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<u>Design</u>

Serious Game Design for Developing Fluency in Crowdfunding

Volume 1 of 1

by

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Thesis for the degree of <u>Doctor of Philosophy</u>

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ABSTRACT

Since the beginning of the present form of crowdfunding, in 2006, crowdfunding has continued to increase in popularity as a higher number of projects seek access to this funding vehicle. This has resulted in the need for independent training materials that can help simulate the socially constructed real world experiences applicants are likely to encounter. At present, these training materials exist as proprietary products accessible only to applicants who are registered on a crowdfunding platform and have either completed, or are in the process of creating, their own crowdfunding campaign.

The purpose of this study was to address the central question of how a serious game can help simulate the crowdfunding experience. In addressing this question, the research developed an appropriate framework for crowdfunding success. Furthermore, it also explored two artefacts suited to these outcomes as a means of housing this framework; a workbook and a board game.

Validating the two products via a mixed methods approach, a robust set of data has been produced that indicate weaknesses and strengths in both products. These mixed methods included observational session summary sheets, playtests, semi-structured interviews and surveys.

Most salient in this data is the need for lexical adjustments in the workbook and for better mechanics and dynamics in the board game design. However, both products were well received and their ability to meet their learning objectives was a positive correlation, indicating that both products are valid tools for improving the understanding of the crowdfunding applicant and simulating the real-world experiences they are likely to encounter.

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Faculty of Computer Science

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DEFINITIONS

Applicant: An individual, or team, seeking to crowdfund their vision.

Crowdconsent: A portmanteau that forms the central motivation for crowdfunding activities, it is the combination of the words 'crowd' and 'consent'. These are the central mainstays of any crowdfunding activity where the applicant is seeking consent from the crowd to create their specific vision (Buckingham, 2015).

Crowdfunding: "[A] process of one party financing a project by requesting and receiving small contributions from many parties in exchange for a form of value to those parties" (Rubinton, 2011: 3).

Serious Game(s): "Serious games are digital games, simulations, virtual environments and mixed reality / media that provide opportunities to engage in activities through responsive narrative / story, gameplay or encounters to inform, influence, for well-being, and / or experience to convey meaning. The quality or success of serious games is characterized by the degree to which purpose has been fulfilled" (Marsh, 2011).

Pedagogy: "Activities that educate or instruct, thereby imparting knowledge or skill" (Susi et al, 2007: 4). [sic]

LIST OF ABBREVIATIONS

ARM	=	Action Research Methodologies.
CCBG	=	Crowded Comments Board Game.
CRA	=	Crowdfunding Readiness Assessment.
DPE	=	Design, Play, Experience.
EIS	=	Enterprise Investment Scheme.
GAME	=	Gathering, Analysis, Modelling and Execution.
GOM	=	Game Object Model.
GOP	=	Game Ontology Project.
LM-GM	=	Learning Mechanics-Game Mechanics.
MDA	=	Mechanics, Dynamics and Aesthetics.
MDE	=	Mechanics, Dynamics and Emotion.
MOOC	=	Mass Online Open Course.
NESTA	=	National Endowment for Science, Technology and the Arts.
OECD	=	Organisation for Economic Co-operation and Development.
PLEX	=	Playful Experience.
PT	=	Play Test.
RQ	=	Research Question.
SDT	=	Self-determination Theory.
SEIS	=	Seed Enterprise Investment Scheme.
UN	=	United Nations.
UX	=	User experience.
VC	=	Venture Capitalist.
WHO	=	World Health Organisation.
WTO	=	World Trade Organisation.

LIST OF ACCOMPANYING MATERIALS

- Accompanying this thesis is a CD containing the *Crowdfunding Readiness Assessment* as a pdf. This is a workbook of 132 pages and as such was considered too long for inclusion as an appendix.

ACADEMIC THESIS: DECLARATION OF AUTHORSHIP

I,   Christopher Buckingham

declare that this thesis and the work presented in it are my own and have been generated by me as the result of my own original research.

<p align="center">Serious Game Design for Developing Fluency in Crowdfunding.</p>

I confirm that:

1.   This work was done wholly or mainly while in candidature for a research degree at this University;

2.   Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;

3.   Where I have consulted the published work of others, this is always clearly attributed;

4.   Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;

5.   I have acknowledged all main sources of help;

6.   Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;

7.   Parts of this work were formerly published as:

Buckingham, C. (2017). *Crowdfunding Readiness Assessment*. Out of Print. Winchester: minivation.

Signed:

Date:

ACKNOWLEDGEMENTS & DEDICATION

In January 2019 we lost my supervisor and mentor Prof. Ashok Ranchhod. This thesis is dedicated to the 'Guru' who is missed for so many reasons by people touched by him all over the world. We all share the joy in our hearts of having known him – even for the briefest of moments. His stars are bright and they carry his light.

Lastly, to my very special and loving family, H, M & T. Whose tears and laughter made me realise there is so much more that I hold dear. That my life is so rich and so full.

I am a very lucky person.

CHAPTER 1: INTRODUCTION

This thesis examines crowdfunding within the context of a serious game in order to design an outcome that can aid the fluency of project management for those seeking to utilise crowdfunding for their projects (the applicants). The objective of the research is to locate the nexus between crowdfunding, learning and serious game design with the aim of benefiting individuals or groups seeking to crowdfund a project. Serious games can provide educational benefits through acquisition of knowledge and the utilisation of this knowledge (Shute et al, 2009; Winn, 2009; Gunter et al, 2008). For this reason, it was felt that new entrants could gain fluency of crowdfunding via the acquisition of factual, conceptual, procedural and meta-cognitive knowledge (Anderson et al, 2001) and that a serious game orientated toward learning could provide the vehicle for delivering this learning experience.

Crowdfunding has existed in its present form since 2006. During this time, it has grown considerably as evidenced in annual reports from The Centre for Alternative Finance (2018), NESTA (2016) and Massolutions (2016), with approximately 70 platforms operating in the UK alone (The Centre for Alternative Finance, 2018). This myriad of platforms and the many models in crowdfunding have resulted in a lack of systems and processes in the approaches to it that could lead to success or failure in obtaining requisite funding for a particular project. This area is therefore ripe for further investigation and the development of an approach that could educate individuals seeking funding for their ideas or projects.

Serious gaming is a dynamic area of research as these types of games can be designed to both educate and motivate individuals to learn about topics as diverse as health issues or business-related topics or in areas where behavioural change is needed, (de Freitas, 2018; Fleming et al, 2017; Hamari & Koivisto, 2015; Winn, 2009). These games simulate real world scenarios and their utilisation is growing (Xu, 2015). Serious game applications are being explored as a training or educational tool in many areas of life, leading to a range of approaches and advances in understanding complex issues (ibid).

Crowdfunding is sometimes a contested term (live debate at Film Expo South, 03 February 2017) as it is multifaceted drawing from culture, economics, entrepreneurialism, identity, and politics under one far-reaching umbrella. This makes it difficult to pin down and study, and yet, at the same time, it is an area ripe for studying the processes and outcomes together with how crowdfunding applicants engage with the process.

While crowdfunding represents disintermediation with traditional forms of project finance (Rubinton, 2011), serious games represent disintermediation with traditional forms of teaching and learning (Winn & Heeter, 2006). Both fields can therefore be positioned as new and disruptive forms that, while advancing knowledge, also open up new challenges, produce new fears among stakeholders and allow new criticisms to emerge (de Freitas, 2018; Seaborn & Fels, 2015). This challenges prior standards and creates fresh possibilities that may themselves be transient as new knowledge and applications emerge (Mollick, 2013), especially when the two areas of study are intertwined.

This changing and challenging landscape forms the backdrop for this research. A review of literature in both crowdfunding and serious gaming reveals no investigations of a framework for crowdfunding or any application of such a framework to a serious game. More precisely there is a gap in the literature of the use of serious games to help improve fundamental conceptualisations for crowdfunding applicants (campaign management). Games are powerful tools for learning and when combined with traditional sources of teaching and learning, their potential is enhanced yet further (de Freitas, 2015, Shaffer, 2006). A serious game is therefore one of the main outcomes in this research.

In crowdfunding there are five distinct classifications; Donation, Reward, Equity, Interest and Mixed, which when combined produce the acronym DREIM (Buckingham, 2015). Within these classes there exist several sub-categories that are dependent on the objective and the needs of the applicant and the business model. Each sub-category represents a different form of crowdfunding and different motivations for the crowd to offer their funding.

Table 1: Crowdfunding models and sub-categories.

	Model				
	Donation	**Reward**	**Equity**	**Interest**	**Mixed**
Sub-categories	D1: Philanthropy D2: Fan Funding D3: Sponsorship (individual) D4: Sponsorship (Corp.)	R1: Shopping R2: R&D R3: Pre-paid R4: CSR R5: Internal project development	E1: Share sale (nominee) E2: Share sale (crowd held) E3: Syndication E4: Syndication (investor led) E5: Community shares	I1: p2p consumer borrowing I2: p2p consumer borrowing - bonds I3: p2b lending I4: p2b factoring I5: Bonds (business) I6: Bonds (consumer) I7: Payday lending I8: High risk loans	M1: Double campaign M2: Blended funding mix M3: Weighted franchise (equality) M4: Weighted franchise (automated)

Equally of interest in these classifications is the commonality that can be found. For example, no matter which class of crowdfunding is used, the request that the applicant presents to funders is a vision of a future created with the assistance of these contributions. This formula for a request is a form of permission seeking by the applicant for that vision. This is termed crowdconsent (see 2.12 below), a portmanteau that summarises the efforts of the applicant in all models of crowdfunding (Buckingham, 2015).

This study makes two conjectures: firstly, that there is a need for a crowdfunding campaign framework that will enable researchers to ground their subject, and secondly, housing such a framework within a serious game will positively impact those seeking to crowdfund their vision. To move from speculation to empirical reality the research seeks to design an appropriate serious game to meet the learning objectives founded on the crowdconsent framework. In this context a serious game design can aid the player in applying knowledge in the real world with their own crowdfunding campaign (Gunter et al, 2008).

In the initial stages this research developed a robust framework for those seeking to utilise crowdfunding for their project. Following validation of this framework in the form of a workbook (Crowdfunding Readiness Assessment) which demonstrated the utility for the applicant seeking to crowdfund their vision, the framework was subsequently used as the basis for the design of a serious game to aid prospective fund seekers.

This is an ethnographic and empirical investigation striving to identify the key factors that positively impact crowdfunding models. It will be argued that all crowdfunding models seek a homogeneous outcome in the form of permission from the crowd to create their vision in some form (crowdconsent), and as such, the framework that emerges from the literature and contact with real world campaign management is applicable across these models. Furthermore, through the nexus of the crowdfunding, learning and serious game literatures this thesis will demonstrate a contribution to academia and the practical spheres with outcomes in the form of a framework for crowdfunding, a task-based workbook and learning via a serious game.

1.1 Auto-ethnography

My personal journey begins with a realisation that there is a lack of research focused on the equity and interest (debt) models of crowdfunding. I have been involved with crowdfunding on some level since 2006, when teaching English as a foreign language in Portugal. I was asked to research disruptive opportunities in the financial markets as the source of material for lessons with management in that sector. It is during this research that I first encountered Zopa.com, a peer-to-peer lending platform for consumer finance. Following this I learnt of Kiva.org, a social impact business that took small loans from people in the richer minority population on the globe and lent these, interest free, to majority world entrepreneurs. Both models were reliant on the crowd to finance the particular needs or desires of others, but their focus was quite different.

These two platforms served their purpose well as conversational prompts for the English classes I was conducting. But the draw of the Zopa and Kiva model was strong. There was a thirst, a lust for knowing that had started and so it was that I engaged, as an investor, on these platforms. Within a few years many new models and applications of crowdfunding would emerge. This served as a source of fuel for my understanding and intrigue.

In 2008 I returned to the UK and completed a Masters in cultural and arts management. A common theme in this sector was the lack of funding and access to finance. Crowdfunding was still in its infancy and was yet to emerge as a significant means of raising funds. This was also where I could add value for this sector. I had a basic understanding of crowdfunding and decided to attempt to create a consultancy that could aid those seeking to understand or utilise crowdfunding.

Alongside the practical engagement as a consultant it was important to keep abreast of academic literature on the topic. The pace of production was starting to increase, but there was a distinct focus in the literature on the donation and the reward models. Very little research was emerging on the equity and interest models. Simultaneously, much of the literature examined the process of crowdfunding from the perspective of the applicant seeking to fund their vision. But the importance of the dialogue between the applicant and the crowd was paramount to the success of the campaigns I had witnessed. So, in an attempt to redress this lack of understanding I started to collate the comments and questions being posed to the applicant by the crowd in these two crowdfunding models.

This resulted in a set of captured anonymous dialogues and a series of conversations related to them and, more importantly, to try and identify ways in which they could help others to understand the crowdfunding process. It was during one of these discussions with Professor Ashok Ranchhod that the idea of a serious game emerged.

Serious games had been a very significant element of my role as a teacher of English as a foreign language. With both adults and teenagers, games were frequently used to aid learning and sources of inspiration for these came in many forms and from many sources. Serious games were an appealing way to explore the possibility of utilising the scraped data sets and contributing something to both academia and the emerging crowdfunding eco-system.

Figure 1: Flow Chart of Significant Events *Leading* to Study.

2009	Consulting begins and regular practical press and academic sources are reviewed and scanned for fresh ideas and thinking.
2011	Reviews are assessed against the practical learning experienced with real world campaigns and management.
2014	Manual scrapes are undertaken in both the equity and interest models of crowdfunding.
2014	Coding follows the scrapes using manual methods (paper and pencil). Subsequent discussions are held and tests introduced.
2015	Possibility of housing crowdfunding in a serious game explored. Outline of post-graduate study proposal drafted.

1.2 Chapter Summary

The thesis will firstly outline a framework for crowdfunding (the crowdconsent framework), it will validate this framework by applying it to a task-based workbook (Crowdfunding Readiness Assessment). Using the framework as scaffold, it will then extend the use of the framework by utilising it with a serious board game, which itself takes a novel approach in that the learning and assessment framework from Anderson et al (2001) shall be used with this serious board game. This game teaches one element of the crowdconsent framework as an experiment to test the efficacy of the concept. This approach is a complex one that will demonstrate a contribution to knowledge on three levels; that the key factors in crowdfunding are housed in the framework, that the workbook can aid the applicant in their understanding and conceptualisation of issues they may face and that a serious board game can teach aspects of the framework.

Finally, this is an inductive study that is positioned within the humanities. It shall use mixed methodologies to approach the complexity of the disciplines it analyses. The underlying philosophical lens is social constructionism and from this perspective the thesis offered an overview of the motivation for the author as an auto-ethnographic statement. The next two chapters provide an in-depth literature review of crowdfunding followed by serious games.

CHAPTER 2: CROWDFUNDING

2.1 Defining Crowdfunding – An Introduction

Crowdfunding has its roots in crowdsourcing a point emphasised by Rubinton (2011: 3) when he introduced definitions of both as: "Crowdsourcing is the process of one party progressing towards a goal by requesting and receiving small contributions from many parties in exchange for a form of value to those parties." In the same paper he defines crowdfunding as: "...the process of one party financing a project by requesting and receiving small contributions from many parties in exchange for a form of value to those parties." (ibid).

Contextualising both in this way Rubinton was able to provide a concise definition that emphasises the relational development of crowdfunding. Rubinton refers to crowdfunding using the term "subset" (ibid) which could be argued to underplay the importance of crowdfunding for contemporary markets.

Conceptually, Rubinton was able to distinguish the basic nuances between crowdsourcing and crowdfunding. The relevance for both concepts is their close proximity. A crowdsourcing vision and strategy must be visible to the crowd and they must be able to understand the proposal. The crowd's support is an essential component of any crowdsourcing attempt, likewise this support is also needed in a crowdfunding context (Rubinton, 2011).

Whereas crowdsourcing may be an extended open call for support, crowdfunding is only available for a limited time and funders have a constrained time in which to pledge their support. So, although the need for displaying crowdsourcing and crowdfunding visions and strategies are a requisite, the time constraints for a crowdfunding campaign often create problems in securing enough support for a project or idea, in crowdsourcing time is of less importance. This is an important point and one that Rubinton does not address in his 2011 paper but is essential in the development of both concepts.

2.2 Motivational Forces

Crowdfunding and sourcing are thus explicitly linked via motivational forces. Further relevance is found in Ankit Sharma's 2010 publication which focused on success factors that tended to act as a motivational force in crowdsourcing. As far as the author can tell, this is the only publication of these factors and they are presented in the table below:

Table 2: Sharma' Crowdsourcing Success Taxonomy.

Factor	Criteria
Vision & Strategy	The crowd must be invited to participate in the vision and understand / accept the strategy behind the appeal. Support can be found from wider stakeholders if the vision is well presented.
Human Capital	These are the skills possessed by the crowd in understanding financial propositions as well as the details of the proposition on offer. The skills as well as the number of people who are willing to fund a proposition, are crucial to its success or failure. There must be a sufficient number of willing skill holders in the crowd.
Infrastructure	The geographical infrastructure must be adequate for the tasks being undertaken. For example, if the crowd are reliant on 3G communication channels, this network must exist and be of a quality and price that makes this initiative possible and accessible.
Linkages & Trust	Linkages are the connectors between and among individuals making up the crowd and the initiator of the crowdsource project. Knowledge transfer may be a key component of making and maintaining links. Trust is variant on cultural norms. Crowdsourced projects with external links to international bodies (e.g. OECD, WHO, WTO, OECD, UN) can also leverage these links to impress a sense of trust with the crowd.
External Environment	Support from government, local enterprise, environmental specialists and local representatives can all be significant factors in the success of the crowdsourced initiative. Living conditions in the locale also need to be considered as crowdsourced initiatives can produce outcomes affecting them.
Motivation alignment with crowd	Tendering the crowd's motivations in the above areas produces an initiative that is endorsed by the crowd and has provision for the necessary resources.

Sharma's analysis focused on several case studies which used mobile devices to help tackle socio-economic issues in African states. Sharma regarded the above six elements as essential for success in the crowdsourcing cases he analysed.

Sharma (2010) highlights the need for the vision and strategy of any crowdsourcing attempt to be visible to the crowd. There is an inherent need for the crowd to see and understand the vision. Likewise, Sharma also raises the need for the crowd to be able to conceptualise the strategy being proposed to fulfil the requirements of creating the stated vision. Gerber et al (2012) found evidence for this in the crowdfunding context. But temporal constraints on campaigning of the vision in crowdsourcing, are very different to those of crowdfunding. With crowdfunding the crowd only have a limited time in which to act as investors in the project, and the applicant only has a limited time in which to canvass the crowd for support. This temporal tension produces urgency in the crowd to be involved with the crowdfunding vision as the campaign only has this one opportunity to deliver. This sense of scarcity was also identified by Mitra & Gilbert (2014) who recognised scarcity as one of the drivers for success in the reward crowdfunding model. Scarcity in this context was also associated with market price as well as the production of the vision itself.

There exists an economic opportunity for the crowd in crowdfunding to purchase the reward at a stated price, which if lower than predicted retail prices present a purchase opportunity favourable to the crowd (Mollick, 2013). For both funder and applicant this opportunity is a closing window for engagement. For the funder there is only a short time span to decide on the chosen level of association with the vision (i.e. advocacy and / or funding). While for the applicant, the positive impact and novelty of their canvassing activity reduces as time passes and apathy begins to be felt by the crowd.

Production and transmission of a quality signal (Mollick, 2013) is therefore, essential in order for crowdconsent to be granted. A quality signal consists of communicative products that are well understood by the addressee. Vertical slicing the vision results in graphics, speech or text which presents the crowd with information they can readily understand. Even the most technical aspects of a vision are explained in ways that can be easily understood by non-experts.

Coupled with this are the findings of Caldieraro et al (2011) and Lin (2011) highlighting the need to supply information to the crowd that can be verified. Verification by the crowd was found to be more likely to lead to support for the vision. This relates directly to the quality of the signal Mollick (2013) emphasised in his paper.

The crowd are composed of individuals with subjective opinions and biases. Their interpretation of the pitch (text, graphic and video) is reliant on their cognitive skill (Lins et al, 2016; Rubinton, 2011; Ward & Ramachandran, 2010; Kappel, 2009). Assessments are made as to the quality of the campaign and all aspects associated with the vision and the strategy including assessments regarding the team, the finances, and the product (Buckingham, 2016a & 2016b). This asymmetrical information is aggregated with other interpreted signals given through either the platform itself or external social media channels, these impressions are vital as triggers for the crowd's behaviour. If positive interpretations are prevalent then funding can be expected (Beier & Wagner, 2014; Caldieraro et al, 2011; Lin et al, 2011).

Another vital aspect of vision and strategy within the crowdfunding context is that of authority. Mitra & Gilbert (2014) made their own quantitative assessment of the success factors on a reward crowdfunding model platform in the USA (Kickstarter). Authority in this study emanated from the ability of the founders to instil confidence in the crowd that they were the right people with the right expertise to enable this vision to succeed. This provides the first heading for this study's introduction of a crowdfunding framework which complements the earlier findings of Sharma (2010), but where Sharma had the heading 'vision and strategy' (for a crowdsourcing campaign) a crowdfunding framework will use the heading *strategy* alone.

The aspects identified by Sharma (2010) are relevant to the crowdfunding context, and evidence for this is found throughout the literature. But whereas Sharma's focus had been solely on the communication of the vison and strategy to the crowd, crowdfunding needs to extend this to include models under consideration. These include the business model and the crowdfunding model. These must be communicated appropriately but the heading of *strategy* alone is more focused than Sharma had identified. *Vision*, in a crowdfunding campaign, is not an entity that should be communicated separately but rather is seen in crowdfunding as something more inclusive.

Vision is thus embedded in all aspects of communication with the crowd. Switching from a more generally focused '*vision and strategy*' to a narrower focused '*strategy*', therefore, provides an emphasis on the inclusivity of the vision in all aspects of communication and not solely linked to the strategy of the campaign. Vision goes beyond the strategy, it is the raison d' etre of the entire campaign and serves as more than a complimentary support for the strategy.

Sharma's next layer was human capital, which again is linked to the crowdfunding context. Human capital is at the confluence of experiences, knowledge and skills of the individual or group and to be in a position of authority means communicating these aspects concisely and coherently to the crowd. Therefore, an essential skill is the ability to communicate the vision and the strategy to the crowd (Mitra & Gilbert, 2014). This skill set is possibly not held by one individual but may be a trait of the group that form to manage the vision and campaign. Beyond this it can also be found in the tribal bonds among the crowd (Goulding et al, 2013).

To communicate well, applicants must be able to form social relationships (Coleman, 2015; Beier & Wagner, 2014) and network with these relations to form what Uzzi (1996) termed embedded networks. That are relationships that go beyond a financial justification for the existence of the network. These are "social relations that shape economic action" (Uzzi, 1996: 674) that are determined in part by the capabilities of the applicant and their team.

> Crowdconsent is a portmanteau of crowd + consent. No matter which model of crowdfunding being utilised the crowd are being asked for permission to create the vision. I call this *permission* crowdconsent (Buckingham, 2015).

In the crowdfunding context the result of the economic action is the granting of crowdconsent (see 2.12 below). The quality of the relationships leading to economic action can directly influence the levels of funding a campaign can garner (Beier & Wagner, 2014). Poor quality levels of communication will result in lower levels of funding. The skill sets of any applicant and their team must include the ability to communicate well with an opaque crowd. This also correlates with Sharma's findings (2010) and provides one of the main headings in the determination of a framework for crowdfunding. But where Sharma (ibid) had used human capital a crowdfunding framework shall use the term *skills*.

The main objection to the term 'human capital' lies in the focus on the economic rationale for the term, skills, on the other hand, move this focus along and open other possibilities for inclusion beyond economics. 'Skills' is a less economically focused term which is inclusive of the crowd, the team and the applicant founder. Culture and knowledge are also separated from the catch-all headline Sharma (ibid) uses. In separating these, much greater depth can be provided regarding these essential components of the vision.

Infrastructure was the third layer of Sharma's framework and similarities are also found in the literature on crowdfunding. Beier & Wagner (2014) found that the quality of the online communication relationship influenced the crowd's decision to fund the vision (offer crowdconsent). Additionally, applicants were expected to act as e-pedlars selling their wares online through the crowdfunding platform, but the number of walk-in potential customers is relatively low (ibid). This situation serves to emphasise the need for the applicant to be present on other external channels of communication in order to spread the news of their vision (Booth, 2015b). Doing so, to an appropriate quality level, may drive more traffic to the campaign. This also relates to the abilities and understanding of the applicant in the skills section above. Knowledge of the existence of the external environment is not enough in itself. It needs to be accompanied by an understanding of the workings of that platform and how best to use it in the promotion of the campaign and the value it adds to the overall vision.

Access to the infrastructure to both create and maintain a presence beyond the platform is therefore necessary. These actions can create a deeper level of understanding and trust among the crowd, helping to support the previous two areas (strategy and skills). Both Coleman (2015) and Beier & Wagner (2014) went further and also suggested that these experiential interactions can also help nurture an emotional as well as cognitive influence.

Aside from the ability to form and nurture relationships within networks, wider links were also found to be a common theme in the literature. But where Sharma (2010) had placed links and trust under one heading in the crowdsourcing context, in crowdfunding it is necessary to separate these headings, for although they supported one another, their corresponding content was found to be more extensive (Buckingham, 2015; Mitra & Gilbert, 2014).

Mitra & Gilbert (2014) established social proof as one of the further success factors when they looked at the language successful projects were using (reward model). Social proof, in the crowdfunding context, is the broadcasting of previous positive actions by the crowd. By informing the rest of the crowd about actions that had already been taken, it acted as a call for others to follow and repeat these actions. In turn, this can lead to greater numbers being encouraged to take action as the Matthew Effect proliferates among the crowd (Mollick, 2013). The Mathew Effect, as Mollick (ibid) explains, is a situation where the quality of the campaign was widely disseminated among the funders' own network. This attracts more attention and action on behalf of the crowd. There results a proliferation of people taking action as they accept the actionable cues they witness in others. This links with the Mitra & Gilbert (2014) paper in that social proof is a condition whereby people take their cues on how to act from others. These cues are signalled by peers in their network which can result in positive outcomes for the crowdfunding campaign.

Extending this concept of actionable observations of others, Mollick (2013) finds that geographical relevance was also a factor in success. He uses the geographical location of Nashville, USA, as an example where Country and Western music is very popular. Projects related to this genre of music are much more likely to be attractive to the population of Nashville than to a geographical location where a different genre is more popular. Projects may be geographically neutral, where no discernible connections or relationship may be present. But where this nexus can be established it should be given adequate focus in the campaign.

Agrawal et al (2011) found that, when compared with traditional venture capitalist (VC) funding, crowdfunding had a much broader geographical appeal to funders and evidence of social proof was geographically widely dispersed. Using the Country and Western music example, individuals may be clustered in certain geographies where this connection is relevant and may back the project, but there may also be a significant spread of individuals beyond the cluster with an interest in this genre of music. Agrawal et al (2011) was able to demonstrate this dispersion in crowdfunding, which to some degree challenges the geographical relevance of the vision. Agrawal et al (2011) found the genre of the vision can in some instances be geographically significant, as in the music example above.

Social proof (Mitra & Gilbert, 2014), geographical relevance and the Matthew Effect (Mollick, 2013) lead to a conceptual tribal connection among agents that form the crowd and the vision for the campaign. There is a dearth of research on tribes in a crowdfunding context. But their existence is evident in the classification of certain categories and the funders that appear to be attracted to these. They can also be found in the type of question and comment produced by certain individuals. This is especially evident in the equity and interest (debt) crowdfunding models. This area has huge potential for future researchers interested in the impacts these groups may have on crowdfunding campaigns not least in their ability to act for the campaign and / or the vision being created. This is a social construct that is plenteous with value and values for those that connect to trust one another and link to form these tribes (Cova et al, 2011).

Sharma connected linkages and trust under one heading, but in the crowdfunding context it becomes necessary to separate trust from links as this enables deeper categories to be developed with relevance to both ties and networks. In doing so in the crowdfunding context, this separation serves to emphasise the importance of the concepts as defendable elements in their own right.

Starting with trust we learn from Coleman's (2015) research that a major element in the social psychology of trust is authenticity. Coleman (ibid) was specifically looking at celebrity involvement in a campaign. Her paper focused on the reward model and its use by musicians. Authenticity is at times problematic, as a tension may exist in the celebrity's world between connecting with their fan base via social media and the management of both celebrity brand and private life.

For campaigns with no celebrity endorsement of their brand, authenticity is still a needed criterion as without this there will be a lack of support for the authority of the people behind the campaign. The quality of the signal may also be damaged if there is a perception that the campaign lacks authenticity (Buckingham, 2015). Authentication for the campaign can be proven by the crowd either online or off, for example checking the details of a board of directors or submitted accounts for a certain period.

Celebrity endorsement can be at almost any level and from almost any field. The British tennis star Andy Murray is one example serving to support the equity model crowdfunding platform, Seedrs. However, endorsements had already occurred on the Crowdcube site. A major rival to Seedrs, they had hosted some high-profile campaigns with endorsements from business and TV including Steve Smith (Poundland founder) and Kevin McCloud (TV presenter). Tennis player Andy Murray is a board member at Seedrs and their profile was raised by their board member's public endorsement of three businesses on the platform in June 2015, just ahead of the annual British tennis tournament held at Wimbledon. These marketing campaigns served a two-fold purpose; to focus attention on both the individual campaigns and the platform hosting these campaigns.

For the crowd, another vital source of information is found through the update process (Xu et al, 2014). Updates act as a two-way communication between the applicant and the funder. For the funder this is an opportunity to ask questions, clarify aspects of the campaign or simply make comments. These can be responded to by the applicant and at times may lead to further interactions between applicant and funder. For an applicant this is an opportunity to convey more of the story behind the vision. It may be the case that not all the story could be told in the pitch and through this interaction these other aspects can be communicated.

Updates impress on the crowd certain perceptions of various aspects of the campaign. Impression management is a long-established concept (Rosenfeld et al, 2002; Leary, 1996; Leary & Kowalski, 1990; Goffman, 1959 [1990]) and is described as "the process by which people control the impressions others form of them" (Leary & Kowalski, 1990: 34). The importance of impressions to the crowdfunding context was highlighted by Lins et al., (2016) as these communications can embed stronger perceptions of trustworthiness among the crowd.

Ties are an interesting aspect in crowdfunding, but to understand why, it is necessary to start with the pioneer in academic interest in this area, Granovetter, and his 1973 paper. For Granovetter there were three classifications of ties in one's social network; strong (friends and family), weak (friends and family of one's friends and family) and absent (not present). This pioneering work found that the weak ties often acted as bridges and connected networks through the inclusion of its members.

The movement of people from one group to another also reinforced weak tie bridges. As people changed jobs, for example, not only would they enlist in the new weak tie, but they would also act as connector between the new network and the old. For crowdfunding the implications of this were accentuated by both Mitra & Gilbert (2014) and Mollick (2013), in both papers network size on social media channels was seen as a success factor in any crowdfunding activity. The bigger the networks the bigger the crowds base from which support could be requested (although not necessarily given).

Linked to this is the ability to create action, in these networks, to 'like' the campaign via social media channels (Mitra & Gilbert, 2014; Mollick, 2013). Liking becomes possible as similarities between applicant and crowd are leveraged. Liking a person or product is an endorsement not only for the applicant creating the vision, but also for the wider crowd. These 'likes' are publicly visible and act to increase positive perceptions of the campaign (Mitra & Gilbert, 2014). Reciprocity is also aligned with these perceptions, the idea that if one makes a favourable offer one is also likely to receive a favourable offer (ibid). Likes are given as either proof of similarity or praise. Either way both likes and reciprocity are provided by ties in the crowd.

Skills and culture replace Sharma's human capital by forming a deeper review of the two concepts in the crowdfunding context. Culture is relevant as it forms a base understanding of the ability of the applicant to internally conceptualise problems based on their past experiences. New experiences and solutions to problems these may furnish, are also reliant on this experiential armoury held by the applicant. Likewise, we can add tacit knowledge to these elements (Polanyi, 1966). The understanding of procedural steps may be held in an internal record specific to the individual and not recorded (or codified) anywhere else.

In an organisational context culture can be problematic to define. Lind (2012) identified two reasons why culture has become so prolific in academic research. Firstly, there are basic "values, ideologies and assumptions" (ibid: 156) that are present in the symbolic representations of an enterprise. In other words, the identities of the organisation, and the people working within it, are manifest through these symbols and then reinforced by actions and outcomes that support these symbolic representations (ibid).

Secondly, the mobility of a workforce combined with the connectedness of any organisational structure with the outside world, manifest in different cultural artefacts and customs for different geographical spaces. As a workforce becomes more mobile so it may reflect these differences in the cultural attitude of the workforce (ibid).

Culture, according to Lind (2012: 157) is manifested in the meanings attributed to "symbols, personalities, myths and stories, rituals and ceremonies and jargon and values". Links are established with social identity and belonging to social groups where common threads emerge in terms of personal preferences and association with one another (Mitra & Gilbert, 2014). Beyond this it also draws attention to the cultural relevance of the socio-geographical nature of the population in which the applicant operates (Mollick, 2013). The importance of this, Mollick found, was relevant in that social connections are often formed through geographical connections. This serves to reinforce the sense of similarity that strengthens the social proof within a group dynamic.

This moves from the micro (individual) through the meso (crowd) to the macro (national / international) environments where policy is applied to an understanding of crowdfunding. In the crowdfunding context, policy relates to compliance with both legal code at macro (state) levels and compliance at meso (platform) level. This is especially salient with the equity (investing) and interest (debt) crowdfunding models where legislation concerning consumer protection is stronger and more robust (especially in Europe).

Incentives for the crowd are also evident in compliance (Buckingham, 2015). They can now feel protected as investors, while possibly feeling more confident that the campaign will deliver as it visibly adheres to standards that are established by third parties that exude authority. A good example would be EIS and SEIS compliance for investors in the equity model.

There are tax benefits attached to these schemes established by the UK government to encourage investment in early stage business development. Compliance with the criteria for these schemes enables an applicant to offer these incentives to the crowd at no financial cost to themselves. In the same vein platforms, especially in the interest (debt) crowdfunding model will regularly seek guarantees from the applicant.

Acknowledging there are limitations with the work of Sharma (2010), where the focus was on social enterprises on the African continent. Progress toward a crowdfunding framework is made by separating the headings Sharma offered and applying the literature on crowdfunding to the development of a framework (as is shown in the next section, 2.3). To summarise the progress thus far, table 3 below explicitly demonstrates the nexus and how each of the headings in crowdsourcing are unpacked and better aligned with the crowdfunding context:

Table 3: Crowdsourced Headings Conversion to Crowdfunding.

Crowdsourcing	Crowdfunding
Vision & Strategy	Strategy
Human Capital	Skills & Culture
Infrastructure	Access
Linkages & Trust	Communities & Trust
External Environment	Regulations & Networks

2.3 Towards a Crowdfunding Framework

Both Rubinton (2011) and Sharma (2010) offer profound insights into the field of crowdsourcing and crowdfunding. Rubinton attempts to define both topics providing definitions that produce sound insights into both arenas. Sharma focused on the crowdsourcing concept, but evidence of the relevance of these same factors leading to success also emerge in the crowdfunding literature. Both authors neglect temporal constraints and the permission that the creators of these calls are asking the crowd to grant. Although the foundations for a framework in crowdfunding are starting to emerge, they are yet to be brought together to form a framework for the granting of crowdconsent.

A campaign in the crowdfunding context can be defined as a "…planned set of broadcasts that aim to motivate the crowd into adding value to a project within a given timeframe" (Buckingham, 2015: 59). Broadcasting of the message was covered by Sharma (2010) in that he stated explicitly that the vision and strategy needed to be communicated with clarity. For Rubinton (2011) this seems to have been implicit in the value recognition that the parties needed in order to mutually create the vision. If these elements are expressed as a research question, it can be stated as:

RQ1: What would an appropriate framework for crowdfunding be?

Clarity is needed as this research moves toward recognition of a framework for crowdfunding. Clarification of the various headings already identified becomes necessary. The research will lean toward Sharma's understanding of the factors leading to success as these are applied in much greater detail than Rubinton's outline. However, in order to clarify how these are associated with one another to produce a framework with relevance to crowdfunding, each heading is restated and classified according to evidence within academic literature. Echoes of Sharma (2010) are heard throughout the above literature focused on crowdfunding. The relevance of Sharma can thus not be understated as a poignant reference and his early contribution has ramifications for the crowdfunding field. His insights remain significant for contemporary researchers in Crowdfunding and sourcing.

2.4 Strategy

In crowdfunding there is a greater temporal tension in that the perception is one of scarcity for the crowd to act (Mitra & Gilbert, 2014). Recognising scarcity as one of the drivers for success in the reward crowdfunding model, Mitra & Gilbert (2014) formed a link between scarcity, market demand and production. There exists an economic opportunity for the crowd in crowdfunding to purchase the reward at a stated price, which, if lower than predicted retail prices, presents a purchase opportunity favourable to the crowd. But in terms of engagement, this opportunity is a closing window where the crowd only have a short time to make a decision and be associated with the vision (Coleman, 2015; Davidson & Poor, 2015).

A prerequisite is the production and transmission of a quality signal (Mollick, 2013). To restate, the crowd are composed of individuals with subjective opinions and biases. Their interpretation of the pitch (text, graphic and video) is reliant on their cognitive skill (Lins et al, 2016; Rubinton, 2011; Ward & Ramachandran, 2010; Kappel, 2009). Asymmetrical information is aggregated with other interpretations of signals provided via the crowdfunding platform and external social media channels through which assessments can be made (Beier & Wagner, 2014; Caldieraro et al, 2011; Lin et al, 2011). Assessments are also reliant on the status of the applicant as an authority that commands respect and signals their competence at being able to create the vision and fulfil the strategy (Mitra & Gilbert, 2014). Authority comes from the ability of the founders to instil confidence in the crowd that they are the right people with the right expertise to enable this vision to succeed (ibid). A strategy has to be signalled with authority and clarity. Lacking either will lead to crowdconsent being withheld. The quality in this communication needs to address the issues that act as barriers to management progress and the solutions they will employ to overcome these barriers as well as provide the vision with sustainable routes which may also allow for future growth opportunities. Quality then becomes a good fit with the overall vision and the decisions made about which pathway is most efficient for the realisation of this vision (Rumelt, 2011).

There is also a significant need to emphasise and state the special capabilities and uniqueness of the product and the team. Therefore, a clear strategy needs to state the reason for the vision (the pain it will solve for others or the value it will create), the values that are held that will support this endeavour and of course the principal actions that will lead to success (ibid: 90).

2.5 Communities

Communities are the ties in one's network which relate to friends and family (strong ties) and friends and family of one's friends and family (weak ties). Crowdfunding also draws on the concept of the tertiary tie (Buckingham, 2015), a third layer to the original concept by Granovetter (1973) where individuals never meet face to face but rather have interaction via computer intermediated affordances.

Network size is considered in several of the papers but evidence suggests a sizeable network is not significant in itself, this network must actively support the campaign through their social media channels (Mitra & Gilbert, 2014; Mollick, 2013). 'Liking' a campaign becomes possible as similarities between applicant and crowd are leveraged. Liking a person or product provides a public endorsement. These endorsements are publicly visible and act to increase positive perceptions of the campaign (Mitra & Gilbert, 2014). Therefore, being able to activate ties (strong, weak and tertiary) in one's networks implies a better outcome for the campaign.

Reciprocity, or at least the possibility of reciprocity, can lead to the building of trust. Providing a 'like' is itself likely to receive a favourable return (ibid). 'Likes' are given as either proof of similarity between individuals or as praise (ibid) and both likes and reciprocity can be provided by various levels of ties. This may become an intimate arrangement if those ties were less well known to the applicant before crowdfunding activities commenced. Davidson & Poor (2015) identified the potential for individuals to coalesce and form their own groups that support one another in the crowdfunding ecosystem.

If these ties were well known to the applicant prior to crowdfunding activities, there was evidence that applicants would view repeating crowdfunding for future projects as an unlikely event (Davidson & Poor, 2015). Resources, like time, could be saved by going directly to these ties thus sidestepping the need to create a crowdfunding campaign. Crowdfunding represents an intensive use of resources, especially the applicant's time. This is a more intensive process than seeking traditional sources of funding in traditional entrepreneurship.

Funding is reliant on the efficient use of the applicant's skills at accessing cultural capital (in the form of experiential learning) from those that have been through the process. If their ties and networks are limited, this will affect the depth of cultural capital they have access to.

For Davidson & Poor (2015), personality type was a key factor in understanding the likelihood of success. Extroverts could call on a broader network than introverts to help their understanding of the process and activate those networks in their favour. These extroverts were simply more likely to confidently reach out and ask for help with the creation of their campaign from the networks they had access to.

Furthermore, they were also more likely to be referred to other networks creating an even greater advantage for that applicant (Davidson & Poor, 2015). Beyond this it may also serve the individual and their tribes that have been notified of this campaign applicant and their needs. This situation arises because as these individuals deliver notifications, so they are perceived as 'cool' or ahead of some trends by the individuals that make up that particular tribe (Goulding et al, 2013). There are multiple motivational factors at play in these scenarios which results in community impacting the ability of the crowdfunding campaign to gain traction.

2.6 Skills

Human capital concerns experiences, knowledge and skills at an individual or collective level. As Mitra & Gilbert (2014) identified, that to be in a position of authority means communicating knowledge of the vision and the strategy concisely and coherently. Thus, the ability to interact with the crowd and impress on them the skills and abilities held by management is paramount (Rosenfeld et al, 2002). This may lead to new directions as feedback from the crowd serves to influence the creation of new variants of the vision (Smith, 2015).

Human capital in the crowdfunding context is no longer just reliant on the skill set inherent in the applicant and their team, but as the crowd can intervene and interact with the perceptions of others, so there is also concern with the skill sets of the crowd. Smith (2015) identifies two levels of influence: collaboration during the production process (ex-ante) and making modifications to the product once released onto the market (post-ante). Smith (ibid) notes that these modifications may not be endorsed by campaign management and are frequently created and then distributed by individual fans of the product. This type of engagement requires the applicant to utilise their skills to form social relationships (Coleman, 2015; Beier & Wagner, 2014) and network with these relations to form what Uzzi (1996) termed embedded networks. That is "social relations that shape economic action" (Uzzi, 1996: 674) that are determined in part by the capacity of the applicant to be able to form these relationships in the first instance and then nurture them into something relevant to the crowdfunding campaign.

In the crowdfunding context, the economic action sought is palpable, the quality of these relationships can directly influence the levels of crowdconsent a campaign can garner (Buckingham, 2015; Davidson & Poor, 2015; Beier & Wagner, 2014; Mollick, 2013). Therefore, the skill set of the applicant and their team must be appropriate for the nurturing of these relationships providing a further heading to a crowdfunding framework. Implicitly these skills are needed at all stages of the crowdfunding campaign, an issue that no author has explicitly tackled.

Located under the heading of skills, we also find the ability of campaign management to conceptualise the problems they may face. If the strategy is well defined and impressed on the crowd, then there is a clearly defined route to success with obstacles stated with considered solutions. Communicating this well in the pitch was a priority in the Mitra & Gilbert (2014) paper, leading to the granting of crowdconsent.

Research by Xu et al (2014) extended this communicative process to include the update process. This process consists of both 'push' and 'pull' (Buckingham, 2016a and b), whereby the push represents the communications despatched by applicants and their teams and pull the comments and questions posed to them by the crowd. Engagement at these levels can help foster trust (see 2.8 below) between the applicant and the crowd (ibid). It empowers the individual in the crowd to find their voice and engage with the applicant by focusing on specific areas of concern or allowing them to rain praise / criticism on the vision being attempted or indeed any aspect of the campaign. The significance of this cannot be understated. This represents a major social aspect of the crowdfunding process and is seen by both Xu et al (2014) and Mitra & Gilbert (2014) as fundamental to the crowdfunding process. This is further reinforced by the crowdfunding platforms and their focus in their training and help guides for applicants on the update process as a key factor leading to success. This material assumes that the applicant's entrepreneurial identity of self has already emerged (Rae, 2005) and that the applicant is now embarking on their entrepreneurial journey.

Rae (2005: 327) explicitly noted that people constructed their identities by;

> "…narrating autobiographical stories in which they are the central actor, as well as narrator and author. Their entrepreneurial identity is socially negotiated as they makes sense of their own identity and renegotiate or "re-invent" themselves in their own and others' perceptions through the stories they tell. Change and development occurs as learning experiences shape their personal and social identity." [sic]

Applying this to the crowdfunding context highlights the skill needed to include in this narrative the ability of the applicant to manage the vision being proposed. If they are relatively unknown in their field or sector the skill set needed will require them to be able to impress on the crowd aspects of their previous track-record and how this translates to the managing the new venture. According to Rae (ibid) learning continues as the applicant experiences shared learning in their development of both the vision and of self.

2.7 Customs

Customs form part of the culture and can become problematic as they embrace so much of the premise on which identities at all levels are built and created and norms are defined within acceptable parameters of taste (Bourdieu, 1984). Culture, then, can embrace everything we, as humans, do and create together (Jenkins, 2016). This is seen on a spectrum of profound beliefs and traditions through to radical art forms that push back against these same parameters.

This confluence of taste and cultural class was highlighted in Bourdieu's conceptualisation of cultural capital and habitus. These served to distinguish between social and economic distinctions of agents. Bourdieu used the French school system (in the 1970's) to contextualise the problem by demonstrating how birth advantages reinforced social prestige and how the school system supported the former through the positioning of aesthetics and cultural values (Bourdieu, 1984).

Bourdieu developed a new term, 'habitus', to describe the "cultural tastes and social preferences" (Elliot, 2014; 169) of the French society he analysed. Using this new concept, he was able to demonstrate a distinction between economic 'baselines' (ibid) and social status. The latter is conveyed through the accumulation and display of both material objects and preferences or tastes for a certain quality and style, especially in the arts.

Habitus formation begins in the early development of a child. Natural talent and intelligence are not birth rights; they are characteristics unique to the individual but having these internal provisions may not be enough as the school system, Bourdieu argued, was geared to reinforce the advantages of birth. Bourdieu demonstrated this through qualitative indicators of the numbers entering university from the middle and upper classes. The school system produced an affinity between the system of educating and bourgeois tastes, which were supported by the system and in this way legitimised higher art forms which were regularly appreciated and accumulated by the corresponding social classes (Bourdieu, 1984; see also Carey, 2006).

Moving to a contemporary setting, Bourdieu's premise is still evident in that early exposure to new technology provides those of higher social status (and thus economic baselines) early advantage through their ability to understand and gain confidence in the use and application of new technologies. Through this acquisition they are able to leverage knowledge to convert cultural capital into a form of economic capital. Acquired knowledge of this nature means a deeper relationship between cultural and economic forms of capital. This is mirrored in contemporary controversies that mire some of the open source and commons movements (Slee, 2015).

As an example, criticism has been widespread of the open data movement where the power to understand and compute masses of data is centred on a few large corporations with the resources to conduct these functions. This has led to land grabs in India's states, which are fuelled by the cultural capital advantages of the corporate few against the commons. What starts as a process of streamlining an older system and bringing it up to date with contemporary technological advances, descends into chaos and increases the claims of corruption at all levels and, perhaps more seriously, advantages being given to corporate bodies that already have the resources to process and possibly manipulate the mass of data presented through the project (Slee, 2015).

In the crowdfunding context cultural capital could be positioned as a levying mechanism in that it provides an opportunity to breakdown potential barriers to funding a vision and presents something of an equalising effect on the ability to gain funding for a vision. Crowdfunding knowledge is a form of cultural capital and serves to highlight the dynamism and longevity of Bourdieu's concept. Crowdfunding did not exist, in the contemporary form experienced today, at the time of Bourdieu's writing, yet relevance in terms of biases constructed and reinforced through educational systems, the efficacy of an applicant who understands both the process of crowdfunding and social identity theory, as individuals in the crowd support and identify with one another leading to new production, are all relevant components and pay homage to Bourdieu's original concept.

But was Bourdieu of his time? Does he actually remain relevant to contemporary sociology or were his concepts of a particular historical (all be it, close) spatial and temporal context? These are some of the criticisms levied against Bourdieu (Elliot, 2014).

These arguments often centred on structuration at their foundation and as structure is so central to sociology and contemporary critical thinking it cannot be discounted or omitted from any analysis (Porpora, 1998). Critics charged Bourdieu's concept with being too centred on the individual's static tastes (Elliot, 2014). These charges centred on the rigidity of the habitus and the lack of change afforded the concept over time.

Individual growth and personal development were factors that were considered missing in the original concept and although society could evolve and change, habitus, as it was conveyed by Bourdieu, remained compartmentalised and relatively static. In short, individual creative action that challenges and has the potential to change the structure of a society was missing. Habitus, for the critics, was a force for exclusion in a society and as such imbued itself with the identity and accepted norms of the agent to reinforce zones in which some were included and some were excluded (ibid). This kind of either / or approach to society and politics was widely seen as one of Bourdieu's weaknesses and was reflected in other areas of his theorising (especially his stance on globalisation) (ibid).

But if we accept cultural capital as the summary of knowledge, skills and values held by the individual, then this capital becomes fluid and convertible to other forms of capital (both economic and social), which are exchangeable. However, they may also form part of a personal journey where the individual has no intention of converting one form of capital to another. It is enough, in itself, for the individual to accumulate cultural capital. Csikszentmihalyi (1991: 67) refers to this as autotelic, which he describes as a "self-contained activity."

In the crowdfunding context this is evident in its use in accumulating knowledge about firms or, more generally, knowledge on certain sectors (Cruz, 2016). This is an extension of the crowdfunding concept where agents gain inside information (such as reports and annual accounts) as an investor. However, the value for these individuals may lie in the data and not necessarily in the pecuniary returns other investors may be motivated to seek (ibid).

Beyond the individual focus on cultural capital, culture, more generally when referring to society and its organisation is a more problematic term in the crowdfunding context. Cultural aspects which are clearly stated may help to clarify elements of the vision that were otherwise not supported or lacked clarity.

The symbolism embedded in the organisational culture may serve to enhance elements that lead to crowdconsent being granted. For example, Booth (2015a) demonstrates how links with nostalgic cultural icons can help connect the campaign with agents in the crowd. Booth describes nostalgia as a means of acceptance of the past through memory and reflections. In this way past pain is forgotten and the nostalgic period, or point of reference, is imbued with a sense of the beauty of that period, or emphasis on the point (Booth, 2015a).

It may be difficult to find, or use, positive language in a pitch that explicitly attempts to detail internal culture. One method could be to demonstrate a link to some cultural iconic presence in the geography or sector / field of operation or, using the above example, to emphasise the past as a euphoric moment that the vision being presented to the crowd is attempting to reinvigorate or return to in some sense.

However, these may serve as a negative if they are not clearly communicated, or they are perceived by the crowd as supporting internal gains for the applicant and their team at the expense of building something that is sustainable and of greater value for the community it serves.

Self-serving interests exposed in the culture of the organisation may lead to a less likely appeal to the crowd. Transparency is needed when crowdfunding a vision, anything less may result in the crowd's detective work uncovering areas that are hidden in the pitch or the updates, whether intentionally or not.

In an interview with Sara (ethics approval number 17976), a crowdfunding consultant, another aspect of culture emerged related to the vision being created and the foundations that led to this realisation and the attempt to crowdfund. The founders of the vision remain founders but also transition to the role of applicant in a crowdfunding campaign.

As part of the pitch there must be a demonstration of the drive and passion these individuals hold for the vision. This needs to be communicated well with the crowd in order to gain crowdconsent. Inclusion of this aspect under the customs heading as opposed to say trust, reflects the internal culture of the organisation bringing this vision to the crowds, rather than purely an exercise in trust building.

2.8 Trust

Freedman & Jin (2009) identified trust as a major component of success in a peer-to-peer consumer lending context. Their research found that good quality signals projected a perception of trustworthiness in the applicant to the crowd. Gerber et al (2012) supported this finding, identifying trust as a major component in their attempt to understand the motivational qualities that lead to support being offered by the crowd (crowdconsent; see 2.12 below) and applicants participating in crowdfunding activities generally.

Funders trusted platforms to deliver positive experiences through the levels of security they provided. This was particularly evident when applicants were little known in an area. This was balanced with the security offered by a platform, which provided a safety net for the funder. They may trust the platform more than the applicant and this can lead to a decision to invest pecuniary resources in a project. Gerber et al (2012) found that this feeling of security, on the Kickstarter platform, was delivered partly by the all-or-nothing model whereby the campaign does not receive any funds until its targets are reached.

If a campaign fails to reach the set targets, money offered by the funder, held in an escrow account, is returned. Funders commented in their research on the sense of security they felt in that they could openly contribute to an engaging and creative community in the knowledge that if not enough people were persuaded to do likewise, they had lost no money (ibid).

Gerber et al (2012) also noted that validation of ideas was a powerful trust mechanism in the granting of crowdconsent. Authenticity of the applicant can be traced through their social media and conversations held on social media channels between the applicant and other funders.

This also serves to underpin the sense of community and engagement often reported by their participants. Social interactions of this nature are commonplace in crowdfunding activities and for the funder they stress the importance of connections with those in their immediate circles (both strong and weak ties) and those in the looser social networks formed via the channels available in the wider infrastructure (tertiary ties).

Tertiary ties are an additional concept to the original 1973 work by Granovetter and form an outer third layer (see Figure 2 below) that connects agents in a digital world who are extremely unlikely to ever physically meet. Tertiary ties discover or are referred to the crowdfunding campaign by others in their networks and can support the campaign by highlighting the idea to their own networks and / or funding the campaign.

To a certain degree this demonstrates the complexity of crowdconsent, as the permission to enable a vision to be created it is not solely focused on the funding of the vision but, particularly in the instance of the tertiary ties, forms of crowdconsent can be the ability or willingness of ties to bring the campaign to the attention of others in their networks so increasing the likelihood of funding targets being met through increased exposure (see 2.5 above).

Figure 2: Networks of Ties Illustrated.
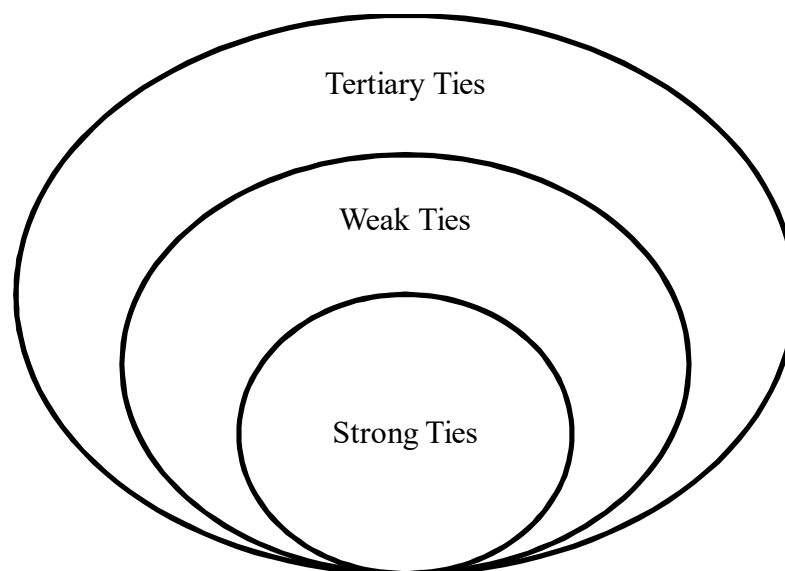
Furthermore, there exists one other set of influencing factors that can motivate or de-motivate the crowd. These are labelled *satellite influencers* (Buckingham, 2015) as they can affect the outcome of the campaign but are not economically active in the success or failure of the campaign. They merely act as a contributing set of agents that can have an impact, positive or negative.

Their existence is confirmed by the fact their contributions to online forums and discussions about the campaign are found at several levels of social media. Their influence stems from their expression of an opinion in favour of, or contrary to, that being presented in the crowdfunding campaign's pitch and subsequent social media activity. If favourable they can help lubricate the process of distributing knowledge about the idea and the campaign to others. If negative they may act as a barrier for the provision of economic contributions toward the campaign.

For the average applicant, satellite influencers are very difficult to identify before launching a campaign. They are only likely to emerge once the campaign has started and agents engage with the campaign and discourse commences on various aspects of the campaign. They may even be tribal in nature, serving to support or reinforce a specific paradigm that has not been considered in the planning of the campaign or in social media discourses (Cova et al, 2011). Their influence, theoretically, does not end or begin with just one layer of tie, they may conceivably have influence right through to the central strong ties, at the centre of the diagram below, this is represented by the line connecting all three layers.

Figure 3: Networks of Ties Illustrated with Satellite Influencers.
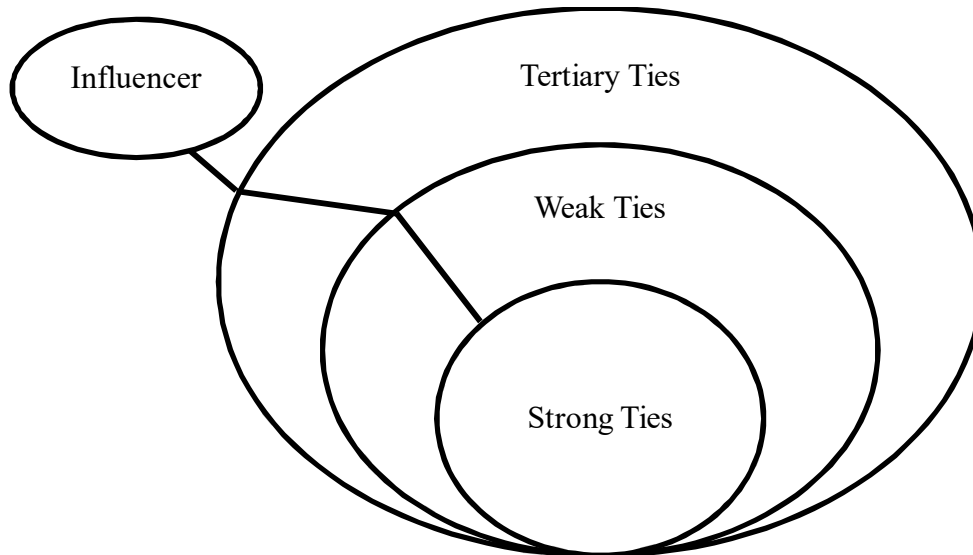
2.9 Networks

A further success factor, in the reward model, found by Mitra & Gilbert (2014), was social proof. Social proof, in the crowdfunding context, is the broadcasting of previous positive actions by the crowd. By informing the rest of the crowd about actions that had already been taken, this acted as a call for others to follow and repeat previous actions. In turn, this may lead to greater numbers being encouraged to take action (Mollick, 2013).

This was also evident in Mollick (2013), where the quality of the campaign was widely disseminated among the funder's own network. This multiplying effect attracts more attention and action on the part of the crowd. There is thus a proliferation of people taking action, which links with the findings of Mitra & Gilbert (2014) in that, where evidence of social proof is found, people are encouraged to act in certain ways because of their interactions. This can result in a positive outcome for a crowdfunding campaign.

Mollick (2013) explored this concept more deeply and found that geographical relevance was also a factor in success. He uses Nashville as an example where Country and Western music is very popular. Projects related to this genre of music are more likely to be attractive to this particular population than to a geographical location where a different style of music is more popular (Mollick, 2013).

Agrawal et al (2011) found that when compared with VC (venture capitalist) funding, crowdfunding had a much broader funder base in terms of geographical spread. This is supported by Mollick's findings that the genre of the vision can be geographically significant. Social proof (Mitra & Gilbert, 2014), geographical relevance (Smith, 2015; Agrawal et al, 2013) and emotional demand (Davidson & Poor, 2015) form a significant combination in the criteria for crowdfunding a vision.

Emotional demands were emphasised by Coleman (2015) and shown to be a major factor for a crowdfunding campaign, especially one that has an established fan base. Coleman's paper is focused on musicians' use of the reward model. She problematized authenticity as a tension was often found, with the applicant connecting with their fan base while managing their branding via social media.

For Coleman (2015), celebrities using the crowdfunding reward model are a prime example of this conflict where the celebrity fan base has a need for personal information and updates on the celebrity at regular intervals. But this may be a minor concern for the celebrity who may outsource the management of this process. The realisation by fans that they are not actually in dialogue with the celebrity can cause disappointment and may lead to them switching their adoration to another celebrity who they perceive as more authentic or genuine (ibid).

For campaigns with no headline celebrity, use of more traditional forms of funding may be more appropriate. Crowdfunding is at times positioned as a utopian relief for the inequality of funding access for lower socio-economic groups in a society. But Davidson & Poor (2015) argue strongly that crowdfunding has the potential to go some way to levelling social inequalities because of the very nature and context of crowdfunding's modus operandi (see 2.1 above).

Networks are vital and access to a wider fan base is a proven prerequisite for funding success (Booth, 2015b; Coleman, 2015; Davidson & Poor, 2015; Mollick, 2013; Bellaflame et al, 2011) but if the applicant can only draw on limited social and economic capital they are faced with a further barrier (Davidson & Poor, 2015). Far from removing barriers for these applicants crowdfunding can be seen as reinforcing these conditions and supporting existing societal stratification thus frustrating their attempts to gain access to funding.

Authenticity becomes problematic if information cannot be verified by the crowd or if authentication is reliant on networks with a higher social mobility where the applicant does not have the same mobility and access to this infrastructure. In these instances, the crowdfunding campaign may be damaged and the impact lessened (Coleman, 2015). Both Caldieraro et al (2011) and Lin (2011) highlighted the need to supply information to the crowd that is verifiable. This process of verification provided a sense of confidence in the applicant, their team and the vision. Once verification was completed, there was also a higher likelihood of information being shared with the wider network, so reinforcing the crowdfunding campaign (conferred by Mollick, 2013).

A critical source of information supply for the crowd is the update mechanism (Lins et al, 2016; Mitra & Gilbert, 2014; Xu et al, 2014). As stated above, updates act as a two-way communication between the applicant and the funder. For the funder this is an opportunity to ask questions, clarify aspects of the campaign or simply make comments. These can be responded to by the applicant and may, at times, lead to further interactions and possible actions. For an applicant this is an opportunity to convey more of the story behind the vision. It may be the case that not all the story could be told in the pitch and through this interaction these additional aspects can be communicated (Buckingham, 2016a & 2016b).

Impressing the crowd through dialogue has a long history in Impression Management Theory (Rosenfeld et al, 2002; Leary, 1996; Goffman, 1990; Leary & Kowalski, 1990). Impression Management Theory is "the process by which people control the impressions others form of them" (Leary & Kowalski, 1990: 34). The importance of this area within the crowdfunding context was highlighted by Lins et al. (2016), as these communications can embed a stronger perception of trustworthiness among the investor community, thus making the granting of crowdconsent more likely.

2.10 Access

Access to infrastructure was highlighted by Beier & Wagner (2014) who found that the quality of the relationship through online communications influenced the crowd's decision to fund the vision. Additionally, applicants in the reward model were expected to act as e-tailers, selling their wares online through the crowdfunding platform. But as Beier & Wagner (ibid) state, the number of walk-in potential customers is relatively low and therefore there is a need for the applicant to be present on other external channels of communication in order to extend knowledge of their campaign. Doing so, to an appropriate level of quality, may drive more traffic to the campaign (ibid).

Therefore, access to the infrastructure is necessary to both create and maintain a presence beyond the crowdfunding platform. These actions can create a deeper level of understanding and trust among the crowd which may reinforce their opinion regarding the vision, strategy and trustworthiness of the applicant (Beier & Wagner, 2014). There was some evidence that experiential interactions of this nature can also help nurture an emotional as well as cognitive influence (ibid).

This was supported by the finding of Davidson & Poor (2015) that applicants experienced a need to cater to the emotional demands of the crowd, utilising available infrastructures to enable this process. These demands were portrayed by Davidson & Poor (ibid) as instances of economic activity which were, at times, led by emotional drivers.

Davidson & Poor (ibid) reported on the perception applicants had of crowdfunding in these circumstances as an enjoyable process. But the extent of the knowledge these applicants already had about the types of infrastructure and the use of these resources prior to launching their crowdfunding campaign is not addressed. For applicants lacking this knowledge, crowdfunding may be a less enjoyable process as the lack of know-how regarding the use of social media, for example, may have a negative impact on the applicant's experience. Applicants could become frustrated at the size of the social network they are able to connect with.

Davidson & Poor (2015) identified the crowdfunding process as a possible means for applicants and funders to combine and form a community with a view to future reciprocity. In this context, the crowdfunding process can produce a feeling of indebtedness to the funders. Applicants that experience this emotional connectedness may be more likely to collaborate for the benefit of the vision being created (Davidson & Poor, 2015).

Barriers were also identified in that the skill sets needed to use the tools embedded in the infrastructure were necessary for their deployment within the campaign (ibid). Assistance could be offered by third parties, so aside from the ability to form and nurture relationships within networks, wider links were also found to be a common theme in the literature consulted (Davidson & Poor, 2015; Mollick, 2013; Gerber et al, 2012).

These concepts also integrate the theories of Bourdieu discussed in section 2.7 above. If agents with more restricted social mobility do not have sufficient human capital to understand the crowdfunding process this acts as a further barrier to access. Their ideas and desires may be frustrated further by a lack of cognition about the processes which lead to success. Deficiencies in their human capital serve to reinforce this cycle of frustration. In Bourdieu's terms it is their access to capital and their habitus that creates these frustrations. Planells (2015) goes even further suggesting that the perceptions of some agents lead to anti-capitalist sentiment in the music crowdfunding genre. Independent producers are able to access the tools and literature required to learn about this new form of funding and to access these platforms. Thus, creating the equilibrated market conditions Planells (ibid) perceives is the premier motivation for the platforms themselves. From the applicant's perspective there is still a need to understand and deliver on the emotional connections that the crowd seek (Davidson & Poor, 2015).

2.11 Regulations

Regulation relates to policy and is found at micro (individual), meso (crowd / platform) and macro (state) levels, and is primarily designed to protect the funder and prevent illegal pecuniary related activities. Regulation, then, relates to compliance of both legal code at macro (state) levels and compliance at the meso (platform) level, with protectionist policies at the micro (applicant / funder) level. This is especially so in the equity (investing) and interest (debt) models where legislation concerning consumer protection is stronger and more robust in the UK market (Massolutions, 2016).

Incentives for the crowd are also found in compliance. They may now be protected as investors possibly feel more confident that the campaign will deliver as it visibly adheres to formulated standards that are established by authoritative third parties (Gergen, 1999). A good example of this is EIS and SEIS compliance for investors in the equity model.

There are tax benefits attached to these schemes which were established by the UK government to encourage investment in early stage business development (Ruthven, 2017). Compliance with the criteria for these schemes enables an applicant to offer these incentives to the crowd at no financial cost to themselves.

2.12 Crowdconsent

Crowdconsent is the outcome of the positive alignment of the above headline factors (strategy, trust, skills, access, networks, communities, customs and regulation). The literature surveyed found that these factors are necessary for positive outcomes in a crowdfunding context. Crafting these elements together produces a framework which establishes the key factors which lead to the granting of permission from the crowd for a vision to be created as funding is consented; crowdconsent is thus derived from this permission granting action.

Figure 4: Basic Headings in the Crowdconsent Framework.
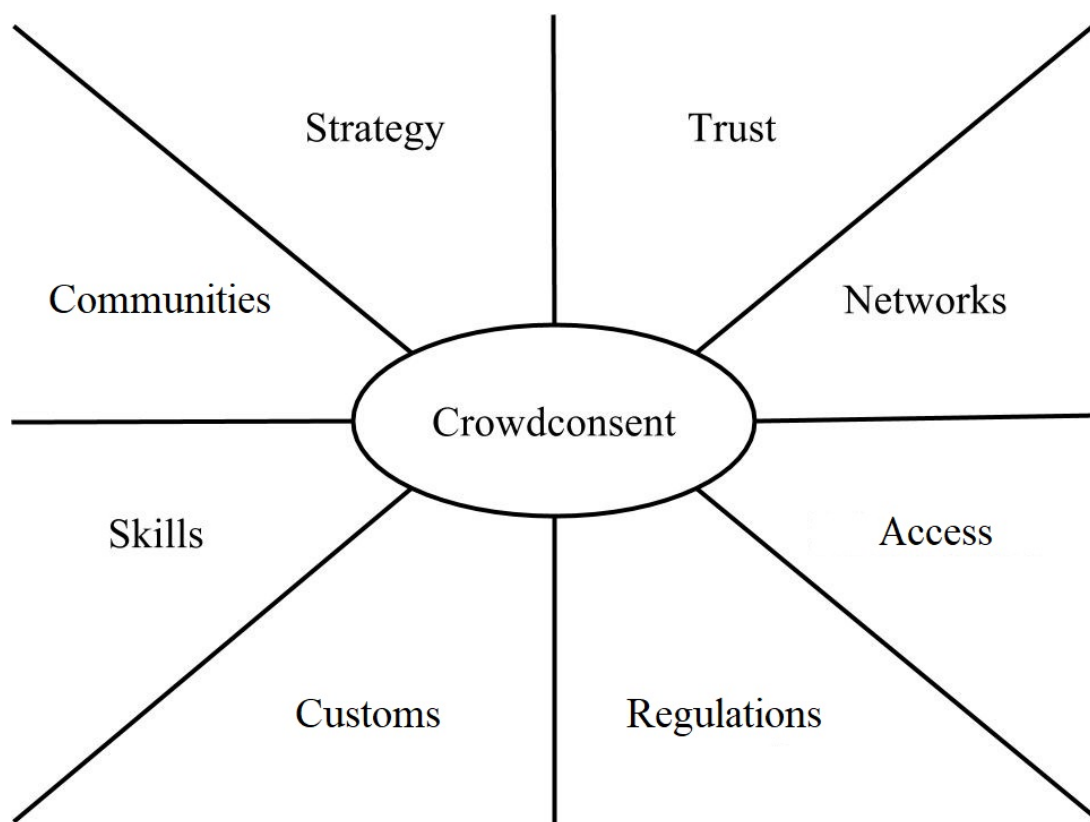
Crowdfunding campaigns seek permission from the crowd to create the vision put before them. Various techniques are available to the applicant in the persuasive discourse to convince the crowd that they are both authentic and capable of achieving the stated objectives within given time frames. Aligning these elements will cover the basic requirements of a campaign to gain crowdconsent and theoretically, addresses research question one (see 2.3 above).

Ultimately, no matter what the motivation behind the applicant's attempt to crowdfund their vision, crowdconsent is universally sought. In terms of success, pecuniary input may not be the objective of the campaign, a situation which is reflected on Kickstarter's own pages where they state "Kickstarter helps artists, musicians, filmmakers, designers, and other creators find the *resources and support* they need to make their ideas a reality" (Kickstarter, 2016, emphasis added). It cannot be ignored that one of the biggest global players for the crowdfunding reward model, Kickstarter, emphasises resources with a wider meaning than referring solely to pecuniary input.

Offers of training an applicant in the science and art of crowdfunding are numerous and can be provided by the platforms themselves as well as dedicated individuals and organisations. However, these are often geared toward a particular crowdfunding model or platform and so are more restrictive if an applicant is seeking further advice on their options within the crowdfunding ecosystem (Buckingham, 2015). Traditional resources such as books and videos are available as are MOOCs dedicated to the concept (as well as crowdfunding being used to fund MOOC modules). However, research to date has revealed no existence of a crowdfunding framework.

2.13 Chapter Summary

Starting with a definition of crowdfunding and differentiating crowdsourcing, this chapter has drawn the main attributes, under eight headings, from the literature that are deemed necessary for a crowdfunding campaign to obtain crowdconsent (a portmanteau that forms the central motivation for crowdfunding activities mainly from the applicant's perspective).

Crowdconsent forms the central aspiration for applicant led crowdfunding activities and is likely if the criteria outlined under each of the eight main headings in the crowdconsent framework are considered in the planning stages. These eight headings serve to support one another as an iterative process of campaign design, resulting in a fresh approach to crowdfunding where the research moves toward a framework dedicated to this area and also makes a novel contribution to knowledge. To reiterate, the central aspect of this framework is crowdconsent as this represents the homogenous nexus that links all key features of a crowdfunding planning strategy.

By classifying the eight headline segments of the framework in the manner set out in figure 4, the internal (left hand side) and external (right hand side) dimensions of the framework are emphasised. These are relevant to the applicant attempting to crowdfund a vision in that conceptualising these areas and addressing their needs will lead to a more robust campaign design. Recurring themes in the literature were communication, engagement, permission, quality and crowdconsent, which are taken as indicators that the framework is conceptually homogeneous in all five models of crowdfunding (philanthropy, research and development, equity sale, debt raising and blended models). However, applying these elements to the crowdfunding eco-system has not been adequately attempted prior to this research. These headline segments are congruous and the next phases were to move from a conceptual understanding to the real world and test the conjecture with experts in the field. To do so, the development of educational cultural outcomes was sought which took the form of a workbook and then a serious game. Serious games were thought the optimal tool for delivering both learning objectives and as a simulation of the crowdfunding experience. This is, as far as the author is aware, a first attempt on two fronts; i) the formulation of a crowdfunding framework and ii) to position learning about crowdfunding within a serious game.

The assumption is that a serious game designed specifically with these eight criteria in mind will positively impact the player / crowdfunding applicant, even when the objective of the campaign is not a funding outcome but one where feedback and opinions are sought (e.g. crowdsourcing). Success can be multisided and must be an established criterion for an applicant before the crowdfunding campaign is launched.

In the formulation of the crowdconsent framework key factors were identified. Beyond academia, a practical outcome with potential for equally significant impact will be the publication of the crowdconsent framework. Once validated by experts and applicants seeking to crowdfund their vision, the crowdconsent framework testing phase will answer research question number one; "What would an appropriate framework for crowdfunding be?"

As an appropriate framework for crowdfunding it will first be necessary to validate the framework in some form before the development of any serious game begins. The selection of papers leading to this point was abstracted from a much wider review which acted as a filter, selecting the most salient for the development of a framework. The contribution from these papers introduced topics that were frequently found to be relevant in the researcher's field work as a consultant in that these papers either supported existing, or introduced new, knowledge to the field that was significant to the success of a crowdfunding campaign. In the next chapter attention moves from crowdfunding to learning and serious game design, the second core theme of this thesis.

CHAPTER 3: SERIOUS GAME DESIGN

3.1 Defining Serious Games

The aim of this short section is two-fold: i) to demonstrate the complexity of the existent definitions, and ii) establish a definition that can be used as this thesis progresses. For the latter point we shall refer to Marsh (2011) as the most appropriate. But this is not to recognise there are several ways to define a serious game and what the expectations are when using the term in the context of a particular situation (Breuer & Bente, 2010). Michael & Chen (2006: 17 – also cited in Breuer & Bente, 2010) define a serious game as "…a game in which education (in its various forms) is the primary goal, rather than entertainment." But as Breuer & Bente (2010) recognise, this is a very broad concept of the term education. Breuer & Bente (ibid) also recognise that serious games are not solely applied to educational delivery. They cite several instances where serious games have a purpose beyond set learning objectives or outcomes (they cite an example of using a serious game for the distraction of patients enduring painful procedures).

Rosyid et al (2018) goes even further and label serious games as serious educational games (SEGs) and position these as alternative learning methodologies, but as an alternative to what, they fail to state. This paper also attempts to bridge the gap between knowledge (pedagogy) and game content (mechanics, dynamics and aesthetics). An ambitious undertaking that leads to their definitions of two categories for SEGs: the difficulty and the similarity category. The difficulty category produces a game with varied levels of difficulty that serve to accommodate learners with different needs in terms of mastery, while the similarity category encourages a learner to repeat engagement within the game and so creates a longer learner experience. Girard et al (2013) expand this concept with the term "multi-media technologies" (ibid: 207) and they explicitly contrast more traditional teaching modes. The term "digital learning" (ibid) is used to emphasise the tendency to view serious games in the context of digital. Comparing video games with serious games they conclude that claiming video games as serious games is a weak claim as all video games could be positioned as teaching "visuospatial or language skills" (ibid: 210). Therefore, the design process must have "utility of purpose" (ibid) from very early stage development. The concept of exogenous or endogenous games is not fully addressed by Girard et al (2013) but they implicitly argue for endogenous game development as optimal for serious games.

Susi et al (2007: 1) use the terms 'predefined objectives' and 'education' in their definition of a serious game as; "…a core meaning that serious games are (digital) games used for purposes other than mere entertainment." They go on to describe the plethora of terms and uses for this type of game. Again, their emphasis is on the digital aspect of these games although, by using parenthesis with the term 'digital' they do hint at the possibility of other forms of game.

Seaborn & Fels (2015: 17) provided many critical insights into the field of gamification as a general eco-system with quite wide applications and genres. But they narrowed their definition of a serious game to: "The intentional use of elements for a gameful experience of non-game tasks and contexts."

The fragmented nature of much of this discourse around serious games has been demonstrated by de Freitas (2018). The focus of this paper is on the efficacy of games as learning tools and the utility this generates in any number of fields but particularly in health. The main issue de Freitas (ibid) notes is not that serious games can help pedagogy, but the degree to which they help learning processes. de Freitas (ibid) explicitly makes a case for more positivist approaches in the search which was limited to the digital 'data-rich' game genre.

Marsh (2011: 63) offers a richer definition: "Serious games are digital games, simulations, virtual environments and mixed reality / media that provide opportunities to engage in activities through responsive narrative / story, gameplay or encounters to inform, influence, for well-being, and / or experience to convey meaning. The quality or success of serious games is characterized by the degree to which purpose has been fulfilled." Success, value or purpose is thus open to interpretation for the serious game with an educational purpose, this may create tension between knowledge and game content.

3.2 Pedagogical Issues

This chapter explores the possible role of a serious game in educating crowdfunding applicants with various desires, experiences and needs which result in the possibility of multiple realities (Gergen, 2009; Burr, 2003; Berger & Luckmann, 1966). The aim is to understand how a serious game can benefit players with cognition of the real world.

Serious games are defined as "…digital games, simulations, virtual environments and mixed reality / media that provide opportunities to engage in activities through responsive narrative / story, gameplay or encounters to inform, influence, for well-being, and / or experience to convey meaning" (Marsh, 2011: 63). Gunter, Kenny & Vick (2008) have emphasised the problematic use of the term *serious game* where little account is taken of the pedagogical objective of the serious game's development. The opening statement of their paper (ibid: 511) provides a summary of this critique: "We are witnessing a mad rush to pour educational content into games in an ad hoc manner in hopes that player / learners are more motivated simply because the content is housed inside a game."

Gunter et al (2008) contention is that the serious game design process is at fault when the focus gives priority to game aesthetics rather than pedagogy. Their position is that serious game design needs to incorporate sound pedagogical strategy from the outset. One of the central problems they identify is that the designer of a serious game may lack any pedagogical understanding or experience. This could result in the game being less effective in its core ability to deliver learning objectives (Gunter et al, 2008).

As a pedagogical aid Gunter et al (ibid) view several rational factors as contributing to the ineffectiveness of a serious game's utility. Most salient for this research are the designer and player perspectives where problems may arise as;

- There is pressure to add pedagogy to existing games without any deeper consideration of the consequences of doing so

- There is a generic approach to saving resources in the development of a capitalist market driven product and this may result in a product with great style but little substance

- Measuring a game as either "…achieving a fun, motivating experience; meeting educational goals; or being a commercial success" (ibid: 513) does not habitually make the product a successful pedagogical product, and;

- A game designer's rationale of design standards may be such that they tend to mistakenly identify game dynamics as a knowledge acquisition tool. This is not necessarily the case.

Learning and transferring the rules for mastering a particular level in a game is not necessarily paramount to mastering knowledge of a subject. Game design may not require previous knowledge to be utilised in the next levels in order for mastery to be gained at that level. But the passage of knowledge may be a necessary prerequisite for advancement when learning a topic (Gunter et al, 2008). As this thesis is concerned with the central question; "How can a serious game help to simulate the crowdfunding experience?" the issues Gunter et al (2008) identify have obvious consequences. By default, acknowledging and understanding these issues will not alleviate them. The issues are deep concerns when developing a serious game and their impact can only be reduced through the stringent implementation of a quality (i.e. fit for purpose) serious game.

Games are a sound educational resource as they are both effective and appealing as an instructional resource (Tondello & Nacke, 2018; Xu, 2015; Girard et al, 2013). By using fundamental serious game components to construct a product that allows for project management seeking to utilise crowdfunding to experiment and learn, will contribute something of worth to both academia and the practical crowdfunding eco-system.

As pedagogical products, serious game designers have many options in terms of the product's final form (e.g. digital or table top game) which can be more or less appropriate according to many variables including time and economic resources available (Seaborn & Fels, 2015) and pedagogical choices.

Fox (2005: 120) takes the view that we learn in traditional school settings as we want our lives enriched, this enrichment is made possible because the long-term outcomes of the school system encourage pupils to understand, remember and apply this acquired knowledge. We shall see echoes of this position in the frameworks introduced below from Anderson et al (2001) but before we venture there, it is worth reflecting on the types of pedagogies a serious game might consider.

Weller (2002: 64-79) provides an insightful overview of the possible options for online teaching. If we accept these pedagogical approaches as the most appropriate for these online conditions, and in turn seek an optimal pedagogy for the development of a serious game with the potential to also be a digital product, then these six become more salient in the search for an optimal pedagogy for the serious game. Weller (ibid) provides a short overview of each pedagogical style with a brief view of the advantages and disadvantages of each (summarised below in Tables 3.2i to 3.2vi).

Table 4: Constructivism Pedagogy.

Pedagogy	Pros & Cons
Constructivism	*Positive*: Learners use their own experiences to construct learning and understanding. It is an open approach in that the multiplicity of biases and experiences are all valid in the learner's construction of knowledge while simultaneously shifting the focus from the educator to the learner. *Negative*: There may be friction if a learner requires a 'traditional' input method where the teacher is the focus (a chalk and talk style) or they require more solid black and white answers and find none offered through this method.

Table 5: Resource Based Learning Pedagogy.

Resource Based Learning (Cognitive Constructionist)	*Positive*: This approach is flexible enough to accommodate almost all learner styles as it is the learner that seeks knowledge via the provided resources which may expose a learner to a variety of views that they may not have otherwise encountered. This in turn may encourage exploration and curiosity. It may also foster better search skills in learners as they are encouraged to use these resources to find out about topics and possibly challenge their instructors resulting in them becoming more active in their learning. *Negative*: Frustrating for learners in that they may be required, or need to, decipher a large amount of irrelevant information before they find a resource that is relevant. Sources may need to be checked for integrity and it may be easy for learners to interpret a source as a legitimate one when in fact it is repeating or creating social commentary with no, or very little evidence, to support their particular view.

Table 6: Collaborative Learning Pedagogy.

Collaborative Learning (Social Constructivist)	*Positive*: Active learning principles are at play as the learner is expected to do something with knowledge and not just be a recipient, which in turn may produce a more reflective style of learner. A practical outcome, for educational institutions where the learner is expecting to leave and find employment, is that collaborative experiences are sought by these employers. Working collaboratively can provide an opportunity for the learner to explore the depths and peripheries of these topics as learner experiences may have a wider base. As we saw in resource-based learning, this can mean exposure to a wider range of viewpoints. *Negative*: Role negotiation can be problematic as can reluctance of individuals to work with one another. Tasks may also take longer to perform, especially if arguments occur or excessive time is used to negotiate roles within the group and this aspect can be even more problematic if a learner leaves a group. Loss of independence can be problematic for some learners as well as cultural barriers that act to reinforce stereotypes. Ultimately failure of a group may become a central concern and override the learning experiences of the group. Failure can be an element of that learning process, but the group may not understand this aspect.

Table 7: Problem Based Learning Pedagogy.

Problem Based Learning	*Positive*: Motivation can be high among learners as they are seeking to solve a problem that they are currently not equipped to solve. This is also reflected in their ownership of the problem which means students may play to their own strengths. This latter point also provides flexibility in a learner's approach to solving the problem as they use their own perceptions and biases which can result in acquisition of wider knowledge as they witness the solutions others have adopted. Again, this is an active learning method, but this time the information is framed by a context resulting in increased significance of the issues. This approach can also be indicative of the possibility of a solution, that is, the learning may allow a learner to fail and make a further attempt at the solution. They may learn through failures which occur in a safe environment of experimentation. *Negative*: Uncertainty over what is expected of the learner and if they are being graded on their solutions, uncertainty over what warrants an optimal solution. Side issues may take more time as they explore the possibility for a solution and the educator may need to offer more guidance to bring learners back to the issue for which a solution is being sought. There may be reluctance on the part of the learner if they are unsure or unclear about what the educator is seeking, especially if the learner is to be graded on their solution. Complexity may also be an issue where the problem is too complex for the learner without some deeper education at specific levels to develop their cognition of the issue being addressed, or, when there really are firm 'right' answers, in which case, this pedagogy may be inappropriate.

Table 8: Narrative Based Learning Pedagogy.

Narrative Based Learning	*Positive*: Narrative in this sense is inclusive of the mode for telling a story. Most people understand how to tell a story and the basic construction of a story with a beginning, a middle and an end. This means that the educator can more easily create an environment where the learner is absorbing, remembering and understanding the story without explanation. This can also mean cohesiveness in the topic as elements of the topic are brought together perhaps shown in relationship with one another. Unfamiliar subjects can be given a 'feel' of familiarity if they are told using the standard formats of a story in that culture. Context can be made easier to demonstrate if anecdotes from the real world are used in the story telling or narrative approach while, in some instances, a narrative can be used to help make the topic more dynamic and accessible. This is especially relevant for learners in topics that are perceived as dry or very challenging. Role playing for example might relieve some of this frustration. *Negative*: There may be a danger that the telling of a narrative becomes the goal at the expense of the intended learning objective. Learners may become so fixated on the telling of their narrative that the relevance and context of the educational topic become opaque to a degree that any value in relation to learning objectives is lost. Narratives may also reaffirm a bias held by the learner which could result in less open or more restricted views of the problem while also becoming a less interactive approach when narratives are compiled by the individual.

Table 9: Situated Learning Pedagogy.

Situated Learning	*Positive*: Learning is embedded within an existing culture and is incidental rather than deliberate. An optimal approach would be to include a realistic problem that needs solving with scaffolding to support and nurture the learner's progress. The educator now steps into the role of facilitator as opposed to educator, and in doing so they become a closer ally of the learner which can enhance the sense of community. *Negative*: Learning takes place in the community it can be hard for the learner to distinguish themselves as an expert or specialist. In turn it may be more difficult for the learner to realise they are making sound progress when the learning is so diversely distributed. Community practice can be difficult if the individual is not naturally adept at the tasks they are expected to learn about in a practical sense. There is a need for long timeframes in which the learning takes place, as this is a less formal process of instruction and the approach can be problematic in some educational environments. Learners accept that speed and immediacy are a very real part of everyday life, slow learning, as emphasised in this approach, may create frustrations for the learner if the approach is not detailed explicitly. This approach favours the notion of the community of practice and as community is so central to this notion, the negatives found in the collaborative learning approach are also relevant here.

In mapping out the selected pedagogies in this way Weller (2002) demonstrated their strengths and weaknesses for the online educational community. This chapter is focused on the possibility of a serious game for the individual seeking to crowdfund their vision (the applicant). In doing so there are dangers that the pedagogies outlined above may not be the most appropriate for the emergence of a cultural product.

Weller (ibid) was not suggesting that the designer of an online curriculum choose one approach and implement it in their course. His position is a much more blended one that explicitly suggests the curriculum designer attempts to mix approaches and apply them for optimisation. This suggests these approaches to pedagogy outlined above are more open than might at first seem the case. In being flexible in the choices made, the designer is being asked to create the potential for deeper thought and reflection on the most appropriate approach and this reflection now becomes part of the design process.

If, as will be contextualised later, we then add to this process the opportunity for the designer to seek and understand the learning objectives of the product (curriculum or otherwise) then a case can be made for a much more robust approach to pedagogical issues. Understanding what these might be and their relative effects on the design of the product may result in a better alignment of the needs of the stakeholders of the product (in this case a serious game) and the design in terms of meeting the stated learning objectives.

3.3 Design, Play and Experience

Delivering the possibility of learning objectives results in attention being drawn to the need for a serious game framework that can support the design and building of a game for the purpose of educating an applicant in a crowdfunding context. A list of reviewed frameworks is found in Table 10 below which summarises a wide-ranging search to explore suitable frameworks for this purpose. The results are chronologically ordered:

Table 10: Reviewed Serious Game Frameworks.

Framework	Author(s)	Year
GAME	Brito et al	2015
LM-GM	Arnab et al	2015
MDE	Robson et al	2015
6-11 Framework	Dillon	2011
PLEX	Arrasvuori et al	2011
DPE	Winn	2009
RETAIN	Gunter et al	2008
GOM	Amory	2007
GOP	Zagal et al	2005
MDA	Hunicke et al	2004

Each framework was considered and critically evaluated for its relevance to the process of building a serious game in the context of aiding fluency for the player / applicant. What emerged were the above 10 design frameworks for serious game development. However, one framework stood out as particularly relevant to the needs and requirements of this research.

The DPE framework developed by Winn (2009) was considered the most relevant and robust as it comprehensively included elements for both designing and measuring the impact of a serious game. Not only this, but it also allowed for flexibility in the attention and focus that could be given to each component in an iterative process of testing and recalibration.

Although not exclusive to the DPE framework, it was given heightened prominence in this framework, which emphasised design flexibility that could accommodate designing for learning objectives that focused on four key components: learning, storytelling, gameplay and user experience (Winn, 2009).

Zyda's (2005) position would challenge Winn's order and exchange learning and storytelling in order of priority. This may seem trivial at first glance, but once a deeper view of classical aesthetics is added, the need for a robust and pleasing story sense becomes more striking. But this design order is a false dichotomy for if the DPE were split into two, drawing a line under storytelling; we can start to build a game that has an equal focus on the pedagogy / storytelling as it does with the gameplay / user experience but maintains a process of iterative inquiry.

DPE becomes an optimal choice as it allows for flexibility in the design process. Although the layers are specifically ordered, they are modular and allow for interpretation for each game created using the framework. In this sense, the framework is presented as a guide rather than a strict set of steps in a linear direction. Game design now becomes flexible and better aligned with the needs of each game being created (Winn, 2009).

Winn (ibid) does offer a caveat to this in that the target audience of the game must at all times be to the fore of any design decisions. In this, Winn also emphasises the need to consider the design / play nexus as an iterative one that supports the overall experience of the player through a mediated platform (ibid). By emphasising this aspect Winn's focus is on the subjective nature of the player as an influencing factor on the design process. This is later echoed by Huotari & Hamari (2012) and Ramirez & Squire (2014).

DPE is an expansion of the earlier MDA framework (Hunicke et al, 2004) and allows deeper design and play analysis. Through the provision of additional layers to gameplay (the focus of MDA) DPE provides learning, storytelling and user experience as additional criteria for the designer.

3.4 Analysing the DPE Framework

In researching this area, the priority was to locate a framework that could encapsulate the necessary pedagogical aspects for the purpose of a game. Serious game designers have had an advantage over their counterparts developing games for entertainment, in that they are able to use a blended approach of both game and training design techniques to build their product (Winn, 2009).

The connection between play and profitability (Salen & Zimmerman, 2004) is not lost in this paradigm, but the value stretches beyond economic profit and extends to effective games designed (and validated) for the use of cognitive enhancement among certain demographics (Bavelier & Green, 2016). This approach of games being used for purposes beyond pure entertainment is where the literature search uncovered the Design, Play and Experience Framework developed by Winn (2009).

This framework, presented as a schematic design (see Figure 5 below), brought together the essential design elements needed for the purposes of designing a serious game. Utilising this framework as an underlying principle for the design of a serious game addressing the comments and questions posed in a crowdfunding campaign, meant a richer product being designed that would meet the needs of the player / applicant in a crowdfunding context. This is possible because of the iterative nature of the framework and the use of levels (layers), which help guide the process as each category is given consideration in the design process.

Figure 5: Winn's DPE Framework (2009).
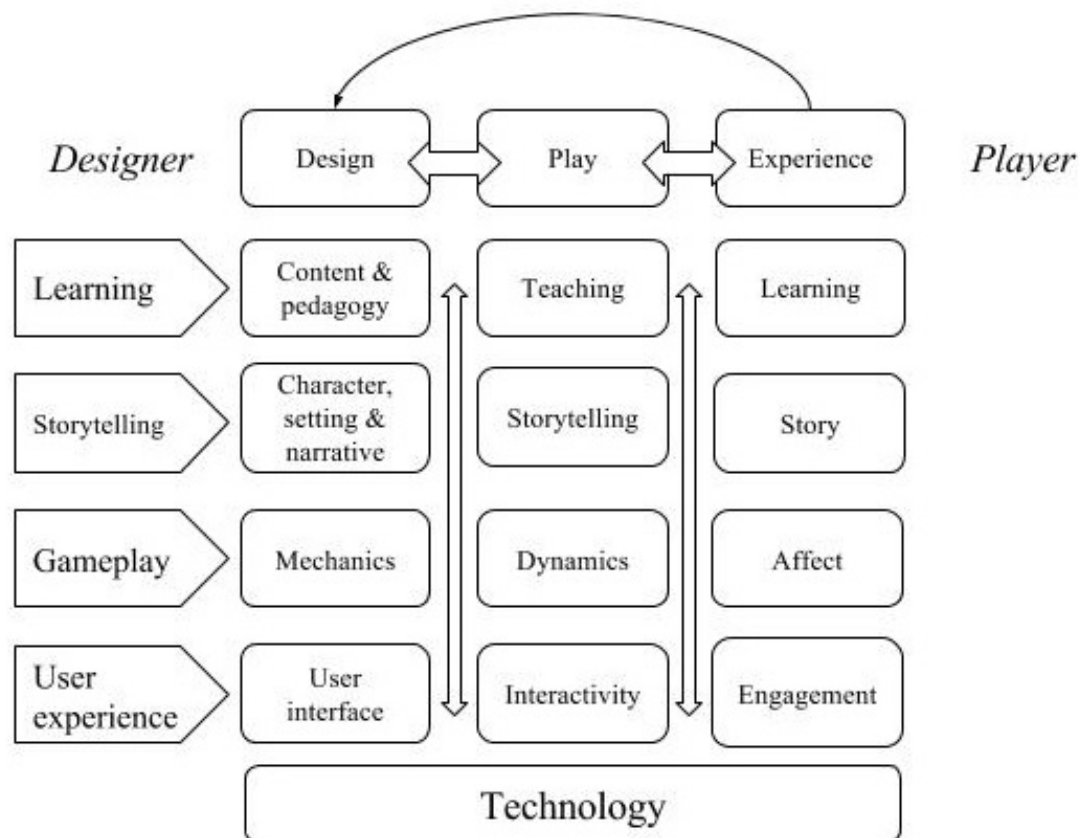
Winn (2009) uses the term layers to describe each of the category headings found in the far-left column above. The four layers (Learning, Storytelling, Gameplay and User Experience) act as content signposts at the vanguard of the design process. Subsequently the content is designed in batches of three that relate back to the main header on the left. A process which is itself iterative and task-based in as far as each label (representing content) is a design component of the whole system.

Although the process, as defined by Winn (2009), is not necessarily linear in that a designer starts with the Learning layer and then progresses to the User Experience layer, for purposes of clarity, these will be presented below following the original linear detail found in Figure 5 above.

Ultimately the overarching headline themes of design, play and experience act as guiding principles, moving as the framework does from designer, through the development phases, to the player. Winn (2009) emphasises the iterative nature of the framework and this is present from the outset as the design, play and experience phases are themselves meant to be a process of refinement.

Playtesting and refinement of all elements of the game are possible and can even be taken to the extreme where strategies are sought that might lead to extreme conditions of play where players attempt to break or bend the rules in order to test the game at levels that would not be a regular condition of play (Yu, 2011). Incorporating these types of playtest, Yu (ibid) concurs with Winn (2009), that the iterative process is a desirable element in a game's development and therefore needs to be included in the strategic development of the any game. Consideration of this iterative and reflective practice in design is a major strength of the DPE framework as it is embedded throughout the design process. It is both vertically and horizontally sliced to provide the designer with maximum data on which to base refinements.

The following sections will provide a linear review of these layers and offer some critical insights on their inclusion in the deign process of a serious game. Each heading will begin with a map of the DPE framework in order to locate each section in the grand scheme.

3.5 Learning Layer
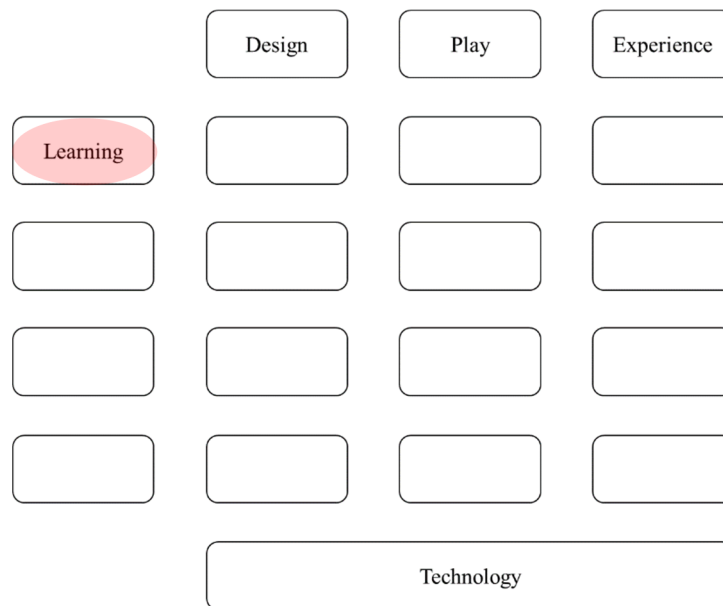
This layer is integral to any activity where teaching and learning are expected to evolve. A designer of a serious game thus needs to be able to understand and develop pedagogy that fits with desired learning objectives. Following Scrivener (1994), learning objectives are defined as the intentional achievements by students, a deceptively simple statement, which, in a serious game context, leaves actual content and delivery to the pedagogical design without further critical input. Given the complexity of developing a serious game the need to state concrete and achievable learning objectives becomes vital if it is to serve the target player group with the stated benefits.

As Shaffer (2006) states, a game is more than the sum of its parts and players will individually experience play and gain value from that experience. Their subjectivity will result in the game being something that is unique to them as a player (De Koven, 2013). This has an impact on any statements concerning the learning objectives, which are generally applied to the serious game. Codified learning objectives may serve particular individuals better than others as some learning objectives may fail some players while others may unintentionally learn aspects not considered by the serious game designer. This is not necessarily problematic, but consideration should be given to this aspect during any iterative design adjustments to the game itself or to the setting of learning objectives.

Criticisms could be levelled at learning objectives which are too narrowly focused, when applied to any learning environment (Anderson et al, 2001). But the spatial environment where play takes place can change for the serious game. Play may not, for example, be confined to a classroom and serious games are not necessarily responsible for, or even relevant to, the standard classroom. This research can also position itself further from this argument in that through the development of the crowdconsent framework, the intention is to develop a series of mini serious games.

The result is less concern for the applicability of the games for the classroom as the setting as this may not be the spatial or temporal parameters in which these games are being played. This is not to suggest that these parameters are no longer relevant, but it does serve to emphasise the focus of the authors, Anderson et al (2001), and their rationale for the development of learning objectives which are specifically dedicated to the classroom setting.

In terms of the overarching rationale for the need to develop and understand the critical application of learning objectives to a serious game, the arguments are still considered relevant as they add an element of caution when codifying learning objectives. As with the problem stated above, where they may be too narrow, the learning objectives provide a standard to be achieved in the serious game. They can act, in this context, as a guiding tool and empower the designer with the ability to create products around the learning objectives that are aligned with the mechanics of the serious game. To restate; learning objectives can act as a reference guide for the designer tasked with developing a serious game. This may even go some way in improving some of the issues identified by Gunter et al (2008).

Shaffer (2006: 69) develops this argument further by suggesting that all games are forms of simulation. Accepting this view, designers of serious games have a multiple task ahead as they design for learning which is both fun and functional, in that the game needs to meet the stated learning objectives. Where these learning objectives have been determined (and by whom) can therefore be an important aspect in helping the designer create something of cultural worth that meets the desired goals.

Goals for serious games can include delivery of set learning results (objectives expressed as anticipated student achievements) that are intentionally manifested through the play experience (Winn, 2009). In this sense, Winn (ibid) suggests that the learning objectives are produced first in the sequence of a serious game design process followed by content and pedagogy. This allows for a clear communication of the learning objectives and provides an early opportunity for the iteration of these between the designer and other stakeholders in the serious game's development (ibid).

A designer may even be in a position to predict issues that are likely to occur when learning objectives are either too narrowly or broadly stated. This presents a positive outcome for some of the issues identified by Gunter et al (2008) in that a serious games designer may have a better understanding of the issues than these authors had given credit for. For Winn (2009) the key to all this is the iterative process and communicative ability of the stakeholders in the game and the designer. If this is a positive interaction it should result in clear, mutually agreed iterations.

These subtle shifts in learning objectives can produce a combinatory result of the play tests and the DPE framework which influenced the design process. This serves to demonstrate the ability of the DPE framework to provide flexibility in the design process of a serious game. No fundamental changes may be necessary in the approach of designing a serious game to fulfil the basic pedagogical needs, the basic game concept could still be applied and the game mechanics remain unchanged while accommodating new learning possibilities.

These changes may also be apparent after play tests have been conducted. It is for this reason that Winn (2009) suggests the entire design process remains iterative and able to be more responsive to new information as these later stages of the game's development are reached. The player can learn the new lexicon and practise reacting to the comments and questions from the crowd within the same game without it changing significantly. However, a new suggestion is added to the mechanics of the game via this new insight, players are now invited to bring with them dictionaries, whether paper or digital editions and additionally the learning objectives are adjusted to accommodate this new learning opportunity.

Learning objectives are an integral component of the concept of a serious game and set learning objectives can be used as criteria for measuring a serious game's learning effectiveness (Winn, 2009). Clearly defining the learning objectives of the game early in the design process will result in a more appropriate product that fits the main purpose and demands of the training requirements, producing a product that is a better fit with, and further supports, learning objectives in their various manifestations (i.e. planned or incidental learning events).

Aiding the development of learning objectives, the framework developed by Anderson et al (2001) will be used as it comprehensively outlines a reductive view of the pedagogical intentions of, and justifications for the games predicted objectives. This framework thus allows the pedagogical design aspects to be expressed on many levels and tested through play to assess the games success. It does not, however, allow for incidental or expressive learning because these are naturally occurring learning moments that can be hoped for, but not predicted with certainty and it is thus extremely difficult to create a strategy for their inclusion (ibid).

The psychological paradigmatic lens applied to the Anderson et al (2001) framework leans toward cognitive psychology. A coherent lens given that the explicit outcomes of the purpose of the learning taxonomy is cognition of enquiry (Anderson et al, 2001). The main purpose is to provide the reader with an ability to understand and apply their own cognition of objectives when designing for pedagogically relevant provisions.

Anderson et al (2001; 15-17) suggest teaching objectives be established on three levels by stating outright that the framework they have developed is focused on the educational objectives with a moderate scope focused on curriculum design for a classroom setting. These three levels of objectives are:

- Global (broad and aspirational objectives)
- Educational (content that leads to desired learner behaviours)
- Instructional (reductionist narrow slices of learning).

Mapping a serious game against these criteria (as will be shown in section 5.2 below) produces a much deeper understanding of the components needed in order to produce desired outcomes. It acts as a benchmark from which forecasts can start to be built, based on these solid foundations.

Measurement of these objectives could be aligned with the achievements by players. For example, global objectives will be met when the players can grasp lexical terms and use appropriate responses, the ability to break down and decipher comments and questions and not just accept them at face value (educational), and the instructional objectives can be measured against the most appropriate responses being negotiated in the game.

However, the efficacy of such a game still remains open and the analysis of the learning objectives were recorded and measured by a system of recording learning events on a tick sheet (see 3.5.3 below) while play commenced. Gibson & de Freitas (2016) highlight some of the issues with data methods and the subsequent analysis. Although this research (ibid) was focused on large longitudinal studies concerning computer intermediated games, some learning is applicable to the non-digital environment. Where these areas overlap can be found in the use of traditional measurements in the educational setting, for example pre-test and post-test assessments to gauge depth of learning. However pre-testing is not without criticism. Gomez & Marklund (2018) suggested pre-tests could affect behaviour during play and in the testing phases, where a player had been 'primed' to answer in a specific context. Methodological issues of this nature are given further coverage in chapter four below.

3.5.1 Content and Pedagogy
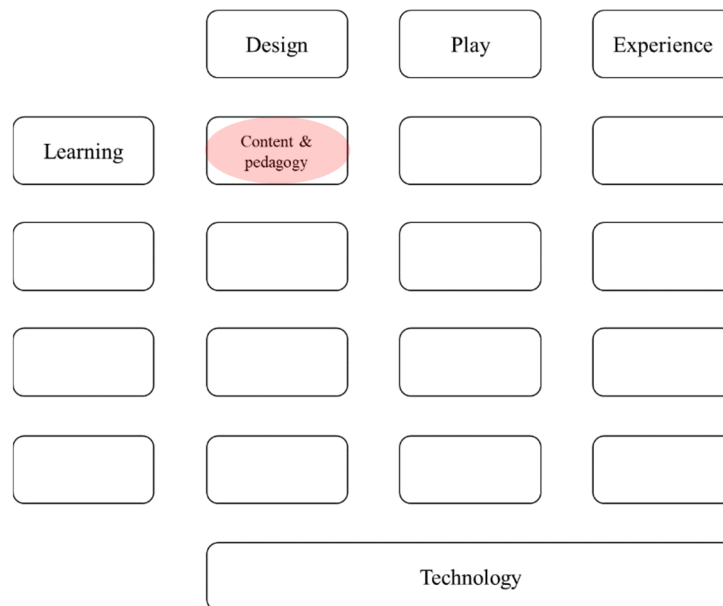
Designing content and applying appropriate pedagogical approaches to a serious game creates a duality that can be problematic given the potential for incidental (or expressive) learning (Ritterfeld & Weber, 2006). This style of learning cannot readily be planned, which means designers cannot easily design for these more organic learning events. However, they may have the potential to impact the serious games planned dynamics (Gee, 2007).

Whether serious game mechanics are co-operative, competitive or a combination these elements have the potential to impact the dynamics of the serious game. For the designer these may be constrained in that they also need to be aligned with the learning objectives and possibly the learning outcomes of the game. Stapleton (2004) reduces this further to either skill-based or content-based learning objectives which attempt (i.e. should) lead to a desired set of learning outcomes.

Furthermore, this also helps produce an understanding of the pedagogy of the game as learning content (for example lexicon or other meaningful contexts) are highlighted and thus given a more central role in the game's mechanics and dynamics. This could, for example, introduce a lightly competitive simulation that relies on some supportive mechanisms as part of the dynamics of the serious game.

Introducing this to the dynamics and mechanics of play, allowing players to score points based on their support for other players, could help introduce new dynamics for them as they socially interact around central educational themes (Buchinger & da Silva Hounsell, 2018; Depping & Mandryk, 2017).

These insights, and the iterative design process proposed through the DPE framework (Winn, 2009), are all relevant as they can help define the type of content that can lead to the delivery of the desired learning objectives, so influencing the pedagogy embedded in the game (ibid). To this end capturing and reacting to feedback from playtests is essential in the development of the game (Winn & Heeter, 2006).

In developing serious games there is an inherent need to address the learning that is expected to be achieved. Laporte & Zaman (2016) argue that this is often achieved with general, holistic learning perspectives which are applied ad hoc to serious games. Rather than a generic application of learning theories to serious games Laporte & Zaman (ibid), suggest that the learning objectives, and subsequent outcomes, should be content–specific and thus more appropriate for the serious game being developed.

As previously stated, this presents issues for the designer if they are reliant on pedagogical input from a source that may fail to understand the complexity of serious game design. This can be equally problematic if the designer lacks understanding of the need for pedagogical content (Gunter et al, 2008).

In order to both balance learning objectives and address specific issues the design process may face; a matrix was sought that would help state the learning objectives clearly as a concrete set of holistic needs that could be met through the development of the serious game. Bloom's Taxonomy of Educational Objectives (1956) was considered one of the most robust approaches. However, Winn (2009) provides a recommendation by Anderson et al (2001) that brought this established teaching aid more up to date.

3.5.2 Teaching
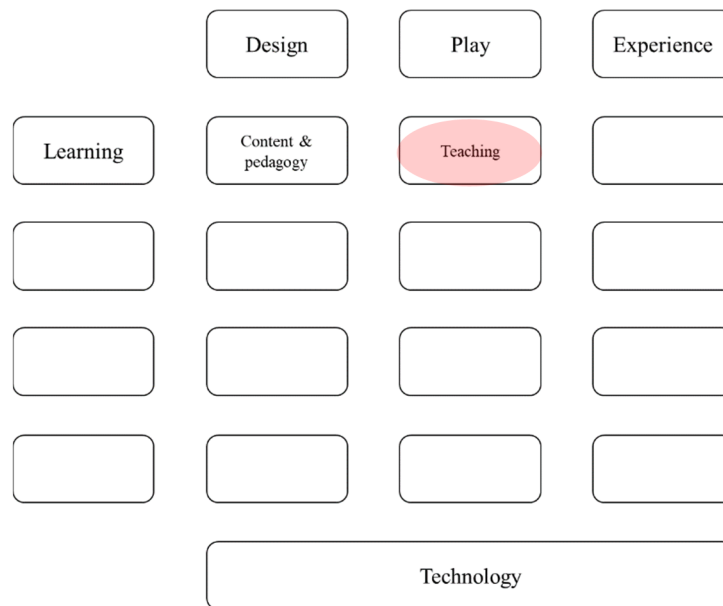
In 1956 Bloom (editor), Engelhart, Furst, Hill and Krathwohl published what was to become one of the 20th century's globally significant teaching resources (Anderson et al, 2001). In 2001 several teacher / writers set about updating the original volume. Anderson, Krathwahl, Airasian, Cruikshank, Mayer, Pintrich, Raths and Wittrock all acted as editors for the revision of Bloom's taxonomy on educational objectives. The need for an updated version was two-fold: first they wanted to highlight the significance of the original title, demonstrating as they did so the relevance to contemporary teaching environments and, secondly, they wanted to bring the title up to date with contemporary approaches to teaching. These approaches had in part been influenced by the socio-cultural context within which these new approaches and developments, in terms of teaching and learning, had advanced (Anderson et al, 2001).

During the review of the various frameworks appropriate for the development of a serious game the researcher selected Winn (2009) and as such it was logical to follow Winn's suggestion of utilising the updated teaching taxonomy from Anderson et al (2001) as a framework for developing learning objectives. The choice of the updated version of Bloom's (1956) original taxonomy by Anderson et al (2001) better informed the design intentions with a robust set of pedagogical criteria that lent themselves well to the overall learning objectives. These were to be embedded within the play experience for the players.

Utilising this taxonomy also meant that the new classifications Anderson et al (2001) established provided greater depth to the understanding of the teaching intentions, which could be given greater focus early in the serious game design process. The main contribution from Anderson et al (2001) was to formulate a new taxonomy for the purpose of enhancing the ability of teachers to deliver learning objectives with a greater degree of clarity both for themselves as educational designers / providers and for their learners (ibid). For the serious game's designer, it could equally help to clarify their objectives, or, at the very least, enable dialogue with stakeholders about these learning objectives.

Table 11: Anderson et al (2001) Taxonomy Table.

The Knowledge Dimension	The Cognitive Process Dimension					
	1 Remember	2 Understand	3 Apply	4 Analyse	5 Evaluate	6 Create
A. Factual Knowledge						
B. Conceptual Knowledge						
C. Procedural Knowledge						
D. Meta-cognitive Knowledge						

This form of taxonomy is useful in outlining the main learning objectives to be targeted in the serious game and could result in a more robust definition of exactly what the learning objectives are attempting to achieve. It may result in the pedagogical delivery of the serious game being given greater focus and clarity. However, fun still needs consideration in the development of the serious game and so a balance is sought between the learning objectives of the game and the fun elements of player interactions, both created and encountered during gameplay (Chatfield, 2011).

Using the verbs remember, understand, apply, analyse, evaluate and create the cognitive process dimension of the taxonomy reinforces the most common types of cognitive process in the development of learning objectives (Anderson et al, 2001). Seeking to apply these cognitive processes to the game in the early stages of development may result in a less opaque game creation with far greater emphasis on the outcomes in an educational context. Below are the original cognitive process dimension verbs and their meaning (ibid: 67):

Process Category   Cognitive Process and Examples

1. **REMEMBER** – retrieve relevant knowledge from long-term memory.

    1.1 Recognising   (e.g., Recognise the dates of important events in U.S. history)

    1.2 Recalling   (e.g., Recall the dates of important events in U.S. history)

2. **UNDERSTAND** – Construct meaning from instructional messages, including oral, written, and graphic communication.

    2.1 Interpreting   (e.g., Paraphrasing important speeches and documents)

    2.2 Exemplifying   (e.g., Give examples of various artistic painting styles)

    2.3 Classifying   (e.g., Classify observed or described cases of mental disorders)

    2.4 Summarising   (e.g., Write a short summary of events portrayed on video tape)

    2.5 Inferring   (e.g., In learning a foreign language, infer grammatical principles from examples)

    2.6 Comparing   (e.g., Compare historical events to contemporary situations)

    2.7 Explaining   (e.g., Explain the causes of important eighteenth-century events in France)

3. **APPLY** – Carry out or use a procedure in a given situation.

    3.1 Executing   (e.g., Divide one whole number by another whole number, both with multiple digits)

    3.2 Implementing   (e.g., Determine in which situations Newton's second law is appropriate)

4. **ANALYSE** – Break material into constituent parts and determine how parts relate to one another and to an over-all structure or purpose.

4.1 Differentiating	(e.g., Distinguish between relevant and irrelevant numbers in a mathematical word problem)
4.2 Organising	(e.g., Structure evidence in a historical description into evidence for and against a particular historical explanation)
4.3 Attributing	(e.g., Determine the point of view of the author of an essay in terms of his or her political perspective)

5. **EVALUATE** – Make judgements based on criteria and standards.

5.1 Checking	(e.g., Determine whether a scientist's conclusions follow from observed data)
5.2 Critiquing	(e.g., Judge which of two methods is the best way to solve a given problem)

6. **CREATE** – Put elements together to form a coherent or functional whole; recognise elements into a new pattern or structure.

6.1 Generating	(e.g., Generate hypotheses to account for an observed phenomenon)
6.2 Planning	(e.g., Plan a research paper on a given historical topic)
6.3 Producing	(e.g., Build habitats for certain species for certain purposes)

These objectives are problematic when taken at face value and attempts are made to apply them all to a single pedagogical product or instance of play. They are too numerous to be accommodated in this manner and were not intended to be used in this way. Adding value to the experience of the player also becomes problematic if they are accepted as being concrete outcomes that *must* be achieved by players in all instances of play. We can speculate that designing the serious game in this way would produce a much too rigid game that would probably fail to enable the social interactions that either Salen & Zimmerman (2004) or Sudnow (1983) encourage (see 3.8.2 below on interactivity).

As Anderson et al (2001) emphasise, this is a journey where teachers are putting together their combinations of learning objectives; a journey which begins with a simple recognition of the noun / verb used in the wording of the learning objectives (ibid: 30). Verbs are most commonly positioned in relation to the six cognitive processes (remember, understand, apply, analyse, evaluate and create), while the noun is positioned according to the four types of knowledge (factual, conceptual, procedural and metacognitive).

Although this approach may seem simplistic it serves well in the creation of objectives for a serious game, as it would for a traditional classroom lesson helping, as it does, to define the intended learning objectives with a rationale from which outcome worthiness can be judged (ibid: 3). Furthermore, the knowledge dimension of the matrix adds greater understanding of the production of objectives by giving space for the development of the content and codification of these learning objectives.

In relation to codification of intended learning objectives, Anderson et al (2001: 3) emphasise the main difference between the cognitive process dimension and the knowledge dimension as mainly one of behavioural outcomes (cognitive process dimension) and content establishment (knowledge dimension). Seen through this lens, the use of the verb / noun combination becomes a more complex operation in which the knowledge dimension plays a significant part as a tool for the development of these objectives. Below are the original knowledge dimension types and their meanings (ibid: 46):

Major types and Subtypes   **Examples**

   A. **FACTUAL KNOWLEDGE – The basic elements students must know to be acquainted with a discipline or solve problems in it**
      Aa Knowledge of terminology: Technical vocabulary, music symbols
      Ab Knowledge of specific details and elements: Major natural resources, reliable sources of information

B. CONCEPTUAL KNOWLEDGE – The interrelationships among the basic elements within a larger structure that enable them to function together

Ba Knowledge of classifications and categories: Periods of geological times, forms of business ownership

Bb Knowledge of principles and generalisations: Pythagorean theorem, law of supply and demand

Bc Knowledge of theories, models, and structures: Theory of evolution, structure of congress

C. PROCEDURAL KNOWLEDGE – How to do something, methods of inquiry, & criteria for using skills, algorithms, techniques, and methods

Ca Knowledge of subject-specific skills and algorithms: Skills used in painting with water colours, whole-number division algorithm

Cb Knowledge of subject-specific techniques and methods: Interviewing techniques, scientific method

Cc Knowledge of criteria for determining when to use appropriate procedures: Criteria used to determine when to apply a procedure involving Newton's second law, criteria used to judge the feasibility of using a particular method to estimate business costs

D. METACOGNITIVE KNOWLEDGE – Knowledge of cognition in general as well as awareness & knowledge of one's own cognition

Da Strategic knowledge: Knowledge of outlining as a means of capturing the structure of a unit of subject matter in a textbook, knowledge of the use of heuristics

Db Knowledge about cognitive tasks, including appropriate contextual and conditional knowledge: Knowledge of the types of tests particular teachers administer, knowledge of the cognitive demands of different tasks

Dc Self-knowledge: Knowledge that critiquing essays is a personal strength, whereas writing essays is a personal weakness; awareness of one's own knowledge level

Although these learning objectives were developed for use in a classroom setting, they are easily adapted to broader contextual settings and applications, including serious games. Adapting the taxonomy proposed by Anderson et al (2001) allows for pedagogical scaffolding and the tensions between games for entertainment and serious games (games developed for purposes beyond pure entertainment) to be clearly defined (Susi et al, 2007).

3.5.3 Learning
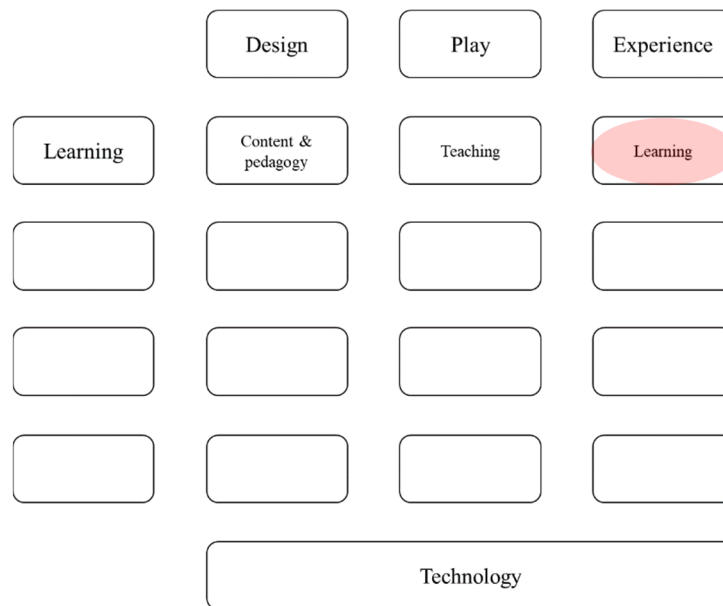
Setting clear learning objectives is a consistent characteristic in the literature on serious games (Buchinger & da Silva Hounsell, 2018; Breuer & Bente, 2010). These authors also went further and suggest a need for adequately delivering teaching within the play experience (Buchinger & Silva Hounsell, 2018; Breuer & Bente, 2010; see also Winn, 2009). Learning within the experience of play, differentiates a serious game from a game built for pure entertainment or fun (Buchinger & da Silva Hounsell, 2018; Lieberman, 2006; Sherry & Pacheco, 2006, Gee, 2003). The latter may still require learning from the player but this is not necessarily concerning actions and cognition of the real world beyond the game, nor is it necessarily an intentionally designed element of the game.

This presents serious games as a *higher* form of game, where the objective of play is beyond mere fun or entertainment and may require some form of learning objective and outcome to be designed for (Yusoff et al, 2009). Serious games are situational in that game mechanics and dynamics found in the game world are used to organise an agent's thinking and thus affect their rational at some level (Ramirez & Squire, 2014). This has deep consequences for the ability of a serious game to deliver on the constructed learning objectives.

Based on socially situated learning theories (ibid), that is theories of learning that are closely aligned with the base concepts of social constructionist thinking (Berger & Luckmann, 1966), the learner is first guided by an external agent (e.g. parent or teacher) who can demonstrate the principles needed to achieve the desired outcome (ibid). Once competency is achieved by the learner, they may then proceed to complete these tasks on their own without further guidance at that specific level (Ramirez & Squire, 2014; Fox, 2005).

Measuring the success of these instructions to deliver the desired understanding and appreciation of the game's objective is an expectancy of play that can only be measured once a player begins the process of developing their own crowdfunding campaign. This concurs with Fox (2005) in that, in his opinion, measuring the success of learning objectives is a fallacy.

Fox's fallacy (ibid) is situated within the ability to understand that learning has actually taken place and that we have developed or extended our knowledge. Learning has taken place once a student is able to "…understand, remember and can [subsequently] apply" this learning (Fox, 2005: 120). The fallacy exists in that unless these steps are taken and observed by the learner or a teacher / guide then there cannot exist a possibility for demonstrating learning has actually taken place. Fox (ibid) contrasts episodic and semantic forms of memory with the social context within which things are learnt. Part of this issue is addressed by de Freitas (2018) who highlights the need to widen any review of the application of serious games as there are many connections and relevance to be found in work being produced in a variety of different disciplines. The challenge, from de Freitas's (ibid) perspective, is being able to form a nexus between these varied disciplines and cognitively apply this understanding to help position serious games (or game science as de Freitas (ibid) adopts from the emerging literature) within these contexts. Wouters & van Oostendorp (2013b) (also cited in de Freitas, 2018) were able to find a strong correlation in their review of serious games that suggested these games were more efficacious once they were blended with other instructional methods and reinforced with more than a single play event. There was, however, a caveat to the Wouters & van Oostendorp (ibid) paper in that these serious games were not found to be more motivational than conventional methods of instruction, but learners learnt more when the games were blended, multiple and social (Wouters & van Oostendorp, 2013b).

Socially situated learning, in the context of a serious game, is an embedded mechanic in the game world. This makes the learning aspects and outcomes difficult to measure unless some form of testing is introduced (Bellotti et al, 2013). Holistically this still presents a problem in that the learning objectives of the game (e.g. enhance fluency in crowdfunding) may only be partially met.

In part the difficulty arises because of the nature and purpose of the game. A prolonged temporal fissure may exist from when the game is physically played, to when a crowdfunding campaign is launched. A serious game is therefore more reliant on the player's ability to accurately recall the game experience and the lexical patterns they encountered in the game world and then apply these to a crowdfunding campaign (or indeed any other real-world scenario) (Girard et al, 2013).

However, this may produce a further tension in the designing of a serious game for the crowdfunding context. If the serious game is to use questions gained from the initial scrape then there would need to be two sets of learning objectives; one for the player as responder to the questions being asked in the game, and, another set of learning objective for the player as interrogator who is afforded the ability to ask further questions and make more insightful enquiries to the first round of responses offered by the player.

This might better reflect the real world of crowdfunding where funders will often ask follow-on questions to the applicant, these may even be answered by the fellow members of the crowd. To reflect this real-world situation a serious game on crowdfunding would need to also address the possibility of secondary questions being asked by players. Table 12 and Table 13 below provide the possible learning objectives from each of the players perspectives.

Table 12: Learning Objectives Player as *Responder*.

Cognitive	Expected Learning Objectives for Responder	Knowledge
Remember	1. Recalling stories and significant events appropriate to response.	Ab
Understand	2. Exemplifying chosen responses as most appropriate to context.	Dc
Understand	3. Inferring the most appropriate response based on the context.	Bc
Understand	4. Explaining responses when probed within the given context.	Bd
Apply	5. Implementing an appropriate language response in the context.	Aa
Analyse	6. Differentiate the responses to nuanced contexts.	Ba
Evaluate	7. Critiquing and selecting appropriate responses in context.	Da
Create	8. Producing convincing responses appropriate to context.	Db

Table 13: Learning Objectives Player as *Interrogator*.

Cognitive	Expected Learning Objectives for Interrogator	Knowledge
Remember	9. Recognising relevant types of questions to ask.	Ba
Remember	10. Recalling previous responses from players.	Ab
Understand	11. Interpreting the true sense of responses.	Bc
Analyse	12. Differentiating between relevant and irrelevant responses.	Bd
Evaluate	13. Checking by asking primary and secondary questions.	Cb
Evaluate	14. Critiquing appropriate primary and secondary questions to ask.	Db
Create	15. Generating appropriate questions and probes.	Da

3.6 Storytelling Layer
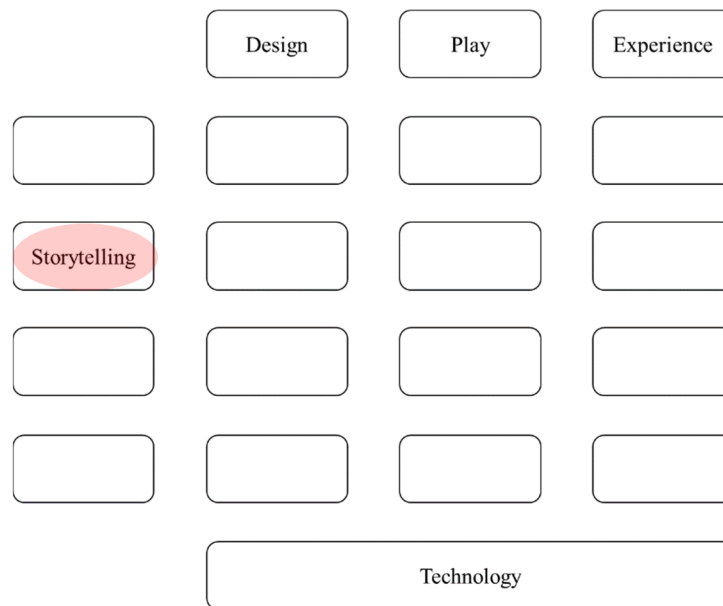
Storytelling can be thought of, in the context of serious game development, as an emplotment of a narrative (Czarniawska, 2004) that are used to support learning objectives. Winn (2009) emphasises a distinction between two stories in games generally; that of the designer and that of the player. There are productions that lack any story such as Pac-Man (Namco, 1980) where the story that may emerge tends more toward the player's interactions with other players post-play and in a social context of some form (e.g. online forums etc.).

The rest is experienced or imagined by the player in the game. For example, players may create stories in their mind as to why the yellow Pac-Man (ibid) is consuming the smaller dots with such gusto, or why the ghosts in the game are trying to catch the player. These are meta-stories created by the player and they could be used to provide an implicit context for the game world that may not have been intended or even considered in the design phases of Pac-Man (ibid).

A further example where the use of emergent storytelling is explicit can be found in Slime Rancher (Monomi Park, 2016). In this video game ranchers are breeding and dealing with critters called *slimes*. Game dynamics allow the slimes to follow simple pre-set codes that when experienced by the player, gives the appearance of autonomous behaviour and collective intelligence to reach the slime's goals (Parkin, 2017).

The reality of the illusion is much more straightforward and makes use of simple coding to provide each slime variant with differing needs and wants (ibid). However, slimes also have global goals in their coding. For example, they move toward food sources and will stack when confined together in a small space (for example when herded into a pen) (Parkin, 2017). The illusion for the player is that these slimes are using autonomous cognition to better their situation. In this regard an emergent story becomes possible, one scripted not by the coder or designer but one imposed on the game by the player (ibid).

Games generally require a designer's story to set the scene and allow the player to immediately gain a sense of the 'what, when, who, where and why' of the game world they have entered. Czarniawska (2004), citing White (1987), brilliantly demonstrates the use of story to shift the telling of facts from *annals* with their lists of facts to *chronicles* where the presentation includes some form of causal events to *story* where plot and / or meaningful structure become evident. For the serious game designer, the tools at their disposal for this purpose are the "setting, character design, and narrative" (Winn, 2009: 1016) from which the game world's story can place the player in the context of the game world.

For a serious game in the crowdfunding context this may emerge as the funder may not be provided all information or that the information they gain may be asymmetrically held by the crowd (Agrawal et al, 2011). This has the potential for an additional dynamic to be offered in that the serious game's players may need to elaborate or even create fictional facts / stories that corroborate and support their initial responses to comments or questions about their campaign (Wouters et al, 2013).

3.6.1 Character, Setting & Narrative
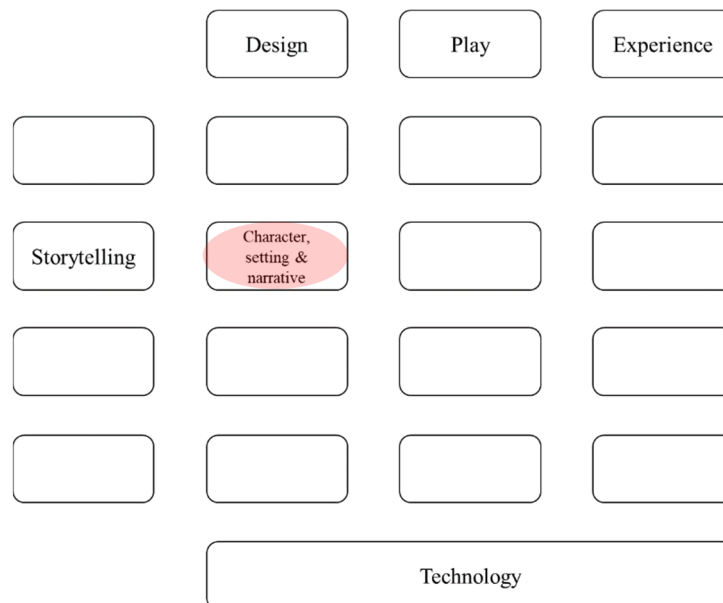
Some serious games supply players with a restricted sense of story. In part, a player's conjectures about what constitutes the story line in the game world of a serious game are implicit in the reasons for playing (in this instance the need to learn about crowdfunding). In this context the setting of the game may also be dependent on the physical place that the player inhabits during play. These are not necessarily emplotted prefabricated fictional elements to the game play and / or the game world. On the contrary, they may be left for the player to determine, with only minimum guidance afforded pre-play through instructions and the supply of additional in-game materials (Tidball, 2011).

However, a player may have been exposed to the original source of the material the game is built on (Crowded Comments – Equity and Crowded Comments – Loans) published in 2016. If this was the case the player would be more likely to have a preconceived impression of the types of comments and questions they might expect in the game. These preconceptions may have led to a rationalisation about what they would expect to encounter in the game world in terms of mechanics, dynamics or even aesthetic (Bandura, 1977). Therefore, the character players assume in the game may be fantasy or a real perception of their own identity. These decisions will be made based on the reaction they have to elements within the game they draw themselves or the perceived reality of the experiences transferred from the real world into the game world.

Player subjectivity and imagination have been observed to be significant in the composition of these characters, based in part on their own internal conversations (Johnson, 2011). The settings therefore are their physical environments where emersion in the game world is allowed to happen. Emplotted narrative is of a player's own creation, guided by the mechanics introduced through the pre-play affordances.

3.6.2 Storytelling
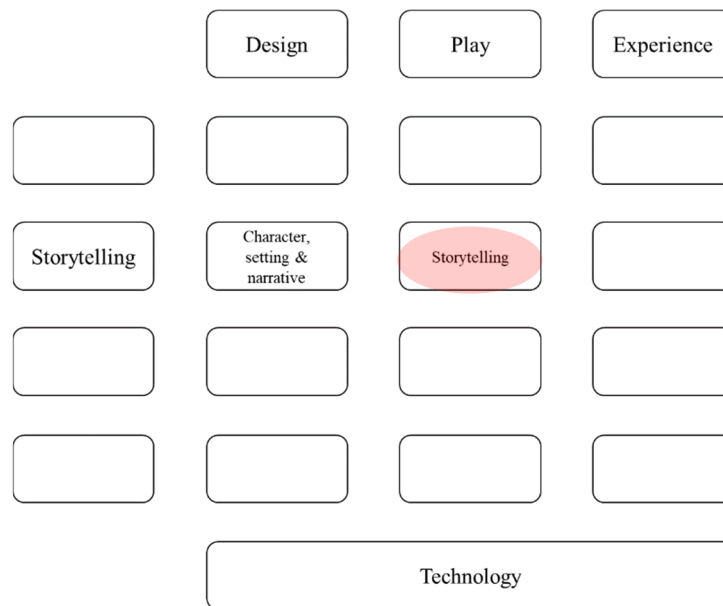
Storytelling design sequences are to a large extent only present at the level of player interaction, possibly even produced by the players in reaction to the context of the game. There is a danger in the design process for serious games that the designer could have been led to focus excessively on this one element at the expense of others. A designer's focus must remain holistically on game system components that are valid for the customer, user or player (Huotari & Hamari, 2012; Lieberman, 2006).

Winn (2009) placed great responsibility on the storytelling aspect of the design to support the learning objectives of the serious game. However, if these are wholly or partially absent Winn (ibid) offers nothing to aid the designer in the storytelling's absence. There is a presumption that this will always be present. As seen above with reference to Slime Rancher (Monomi Park, 2016) this may be an intentional element of the game.

Zyda (2005) cites the failure of edutainment as one reason to move the storyline to the centre of the design process. In his view, pedagogy and story must be better aligned with theory of learning to exploit the opportunity for learning in the serious game. Stories in this sense are almost stealth like in their inclusion of learning (Shreve, 2005). For a serious game player, the story must be immersive and learning secondary to this design requirement (Zyda, 2005), but this may result in further tensions due to a lack of clarity.

Stories can provide players with context and understanding of player expectancy from the game prior to play (Forbech, 2011). In doing so a storyline may be the intrigue needed, possibly through metaphor, to engage the player in the subject matter before play begins.

It could also be argued that Zyda (2005) has failed to adequately account for the need to position learning objectives within the construction of the game. Learning objectives and storylines could be considered as a unifying whole in the development of the serious game and not separate or possibly oppositional factors.

3.6.3 Story
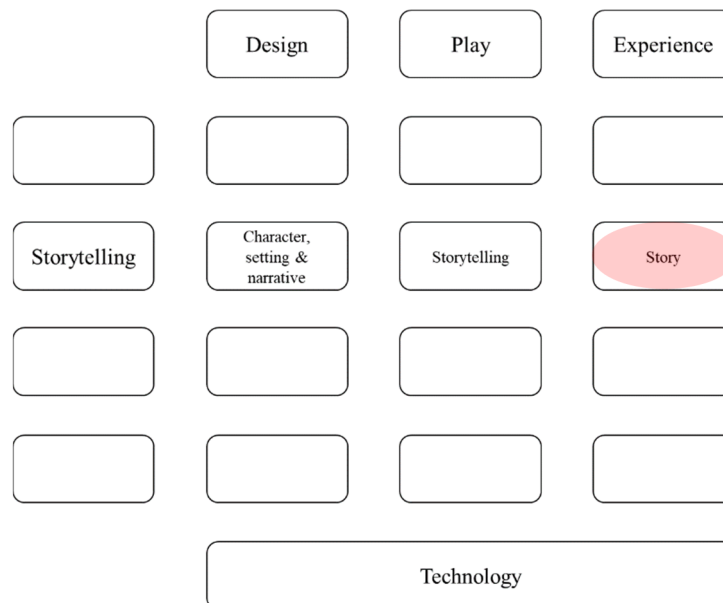
Stories are not unique to games but they have been at the forefront of the debate over games for considerable time. This debate often focuses on either game as stories or stories as a game and frequently produces a polarised view of games (Salen & Zimmerman, 2004). The pressing issue regarding story for the game's designer is a bias toward a particular view of what constitutes a story and the effectiveness of that story within the game world (Forbech, 2011). Salen & Zimmerman (2004) argue that many fields beyond games design are also open to the use of story in the analysis and development of their products. If games designers rely on examples from fields external to game design, they may be placing their game in a dangerous position given that context and meaning can be something unique to each field.

Taking a deeper view of story, it becomes necessary to distinguish story grammar from story schema (Czarniawska, 2004, citing Jean Matter Mandler, 1984). Story grammar concerns the rules of the story and provides the constituent components which create the story. These can then be understood in much broader stories as story grammar remains consistent throughout specific genres of story. An example would be a dungeons and dragons style game that will have particular regularities that can be found throughout the genre of the game type (ibid). The components of story grammar can also help the player understand the sequencing of the story units; players will have an expectation of a sequence or pattern which can help them make sense of the story.

Unexpected turns or twists can add an element of surprise and this may be at odds with the player's expectations. These expectations fall under the heading of story schema and they are the expectations of the patterns that the player will encounter in the game (ibid). In the serious game context, where learning objectives are set as goals for the game, an understanding of the story grammar and schema may help clarify the role the story plays in helping to achieve these objectives. Topics may be susceptible to certain ways of being presented and discussed. Knowledge of this style of presentation may help the designer as they seek to impress on the player an understanding of the world from a certain paradigm (Mullany & Stockwell, 2010).

Schema, from a psycholinguistics perspective, help humans navigate the language choices they make in the context of a given social situation. An example would be in a cinema compared with a large stadium watching an e-sports match (situational schema), the role you are playing, or believe you are playing, in that situation (personal schema) and the knowledge needed to purchase a ticket to enter the cinema or stadium (instrumental schema) are all relevant to the production of the story and, in the case of serious games, the players understanding of their place in the context of that story (Chandler, 2007).

The need to differentiate these elements and create stories that better fit the perspectives being sought through the learning objectives is a challenge for the serious game designer. In the crowdfunding context story is an embedded element of the pitch that campaign creators produce (Buckingham, 2015). Whether applicants state their mission, vision, problems they face or funding requirements, they can all be stated through a story or narrative (Clark, 2009).

Understanding this need and the context for the story is a good example of the holistic requirement of the serious games designer to understand both the liberal market conditions and the likely story schema expected by the players. Using learning objectives to help guide these constructs will theoretically enable much more cohesion among these elements and create serious games that meet their intended outcomes (Kelly, 2011).

By understanding the story grammar and schema a deeper analysis of the experience for the player may also be possible through the story's narrative (Czarniawska, 2004). Comparison may also be possible with games that have similar learning objectives affording even greater insights and analysis. As Ramirez & Squire (2014) argue, serious games often fall below expectations in curricular settings because the narrative is viewed by serious games designers as a wrapper which acts solely as a motivational affordance in the game. This failure to realise the influence of narrative contexts on the experience of the player results in opportunities being missed to "attune players to new goals and create a deeper purpose for the activity" (ibid: 646).

3.7 Gameplay Layer
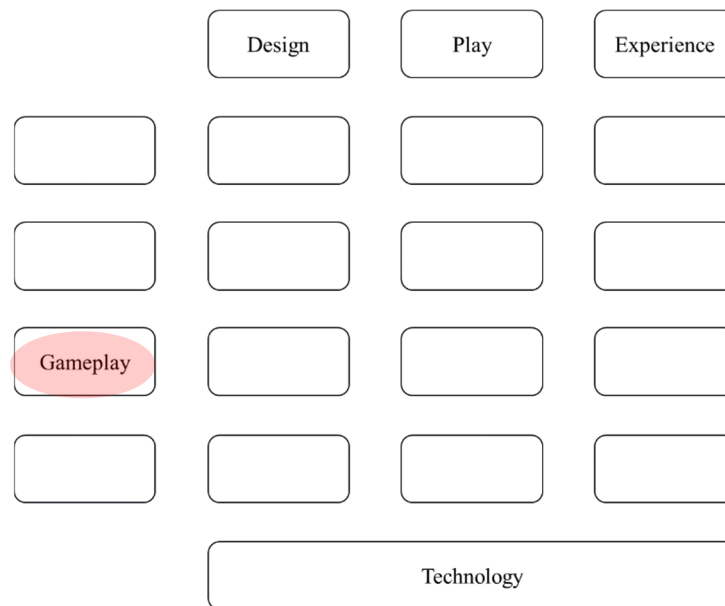
In this layer Winn (2009) explicitly states the inspiration for the DPE framework that emerged from his reading the MDA framework of Hunicke et al (2004). Most notable changes are in the terminology used in the MDA framework (the framework is unpacked in the next few sub-chapters). The original term *aesthetic* is replaced with the term *affect*. Winn (ibid) thought this necessary as it moved the focus of this aspect of the framework away from the visual artistic term that is correlated with aspects of beauty and replaces it with a term correlated more with "emotion or desire" (ibid: 1016).

The MDA Framework has been cited not only as a means to develop games and understand the components needed for the creative process, but also as an analytical tool for reducing games to their core components (Kelly, 2011). This includes analysis of the assumptions embedded in a game and the resultant causes and effects.

Designers themselves may hold erroneous or misinformed views about the causes and effects produced by the game's dynamics and mechanics, that is, the components they themselves are designing (Winn, 2009). This can have some profound effects on player behaviour and therefore needs careful attention if the predetermined learning objectives are to be met and negative outcomes mitigated, as is the case in the development of a quality serious game; that is a serious game worthy of meeting its objectives. Gameplay can, when designed right, enhance the skills of players by focusing their attention on the concepts needed to be successful (Lieberman, 2006). It can provide players with understanding of the effects of their decisions and what actions they need to apply in order to successfully negotiate gameplay and be rewarded in a correspondingly appropriate manner (ibid). In this respect, they can be seen as motivational products.

3.7.1 Mechanics
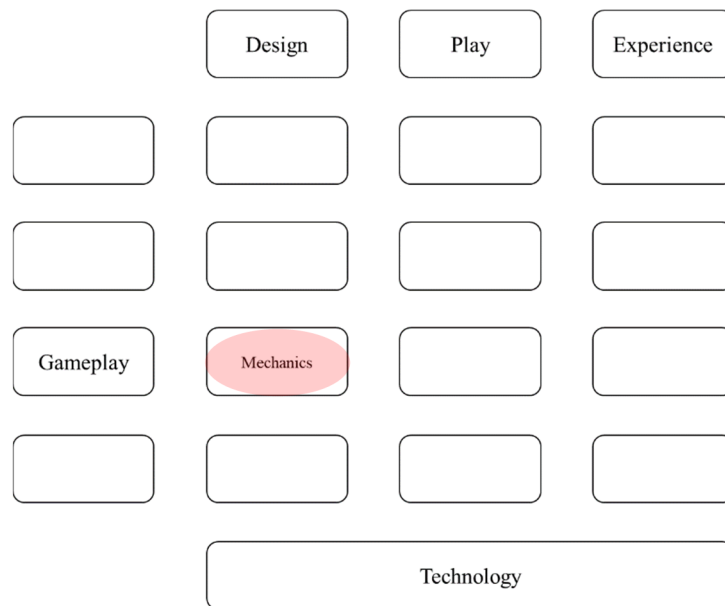
Mechanics represent the basic instructional rules of a game and in this chapter the term infrastructure, mechanic and rule are used interchangeably. Mechanics can be translated to rules and procedures for the making of progress in a game world which may empower the player with the possibility of actionable choices (Hunicke et al, 2004). Delivery of these instructional elements can be in many forms and can greatly influence the design of the serious game (Breuer & Bente, 2010). These constructed rules result in the experiential episodes for the player as they participate in the game world (Waltz & Deterding, 2014).

For the designer of serious games, this translation of their vision to the experiences of the player results in the voluntary act of play. There must, therefore, be willingness on the behalf of the player to interact with the game in the first instance (Caillois, 1958). This primary interaction may be with the rules or instructions of the game. Being concise and cohesive becomes a priority for the designer with responsibility for the creation of the instructions and rules. Decisions in this regard are influenced by the mechanics of the game they are tasked with codifying. There may even be instances where different versions of the same game require different interpretations (Elias et al, 2012).

Good mechanics can make the play experience something that has positive trace memories post-play while bad mechanics can have the opposite effect, resulting in negative experiences of play. As Ernest (2011: 2) states; "A game is a way to play by a set of rules. Good rules help you find the fun." Ernest (ibid) goes on to compare the workings of a wrist-watch with that of a game. The internal contraptions; cogs, springs and the like, are hidden from view and only a practical output, the display of time, is of value to the wearer. Ernest (ibid) stresses these principles of good game mechanics. The player is unaware of the mechanics but the benefits they provide are that the game is played well and enjoyed by the player.

Elias et al (2012) further suggest that the rules are a much broader set of constructs than most imagine. They provide many examples of mechanics that imply to the player what actions are allowed in the game and what the outcomes of those actions are. Indeed, the mechanics even affect the outcome of the game, they can determine at what point the game should end and at what point a winner (or otherwise) is announced (ibid).

Certain mechanics can be thought of as "standards" within certain genres of game (Elias et al, 2012: 71) and these can be framed as either;

- Player enforced
- Judge enforced, or:
- Environment enforced.

Consequently, these mechanics will impact the serious game and as Elias et al (ibid) concede, they are not the game per se, but they are an important part of the game. Using the example of a fairy tale (Red Riding Hood) Elias et al (ibid) demonstrate how the retelling of the story using different words can produce a variation, but the story, in essence, remains true to the original meaning. They cite a need for the same understanding of mechanics (or infrastructure as they term it) in the production of games. But they also cite some of the problems mechanics as rules can produce for the designer and they go further by offering advice directly to designers.

This advice is centred on what they term first and second order rules (ibid: 74). First order rules are those that players or those watching need to know in order to play or watch a game and understand the interactions they are witnessing. They can make sense of the interactions because they have obtained a certain level of understanding of the game. Second order rules, however, deliver much deeper understanding and nuances of the game's finer points. As we learn the second order rules and comprehend their application to the game so we may gain a richer experience of the game or a deeper understanding of the games processes. These second order rules also make for more experienced players and enthusiasts of the game for these agents now have an understanding, this may position them as a specialist (Elias et al, 2012).

Adjudication is the key to differentiating some of the genres of games. For example, board games or card games rarely have judges or adjudicators to assign fairness or arbitration in the game (ibid). For example, if the game is player enforced then players in the game must decide on the outcomes of any disputes. Judges are generally those that are apart from the game play element in some way and may sit as referee, observing play and interacting only when called on to do so by the players or when they deem a contravention of the rules has taken place. Code can also act in this way determining when breaches of set gameplay and the parameters within computer mediated games occur. Environmental effects are interesting as these are the constraints found in the natural environment in which the game is played. For example, gravity plays an intrinsic part in the game of cricket and even to some degree in board games where a roll of a die is required. But this force acts as a mechanic in that the rules allow for movement or interactions which are naturally constrained (Elias et al, 2012).

Winn (2009) suggests two options for the serious games designer when attempting to imagine a new game. Either an exogenous choice, where the game play and learning content are added to an existing game without any significant change to the mechanic (or dynamic). Or an endogenous choice where the game play is developed from an understanding of the pedagogy and learning objective. Caution is needed according to Elias et al (2012) for the designer that chooses the exogenous option, the addition of more rules to existing content can lead to ever more complicated and opaque rules for the player to comprehend prior to play. Instantly they have created a negative state before play even begins.

Mechanics do however evolve and change over time. Cricket, for example, has for some time had the 20:20 version played and likewise patches for video games are frequent additions to help the game be played better within the original confines of the original mechanic. These examples serve to remind us of Elias et al (2012) comment that a game is not defined by the rules alone but commonly "the rules are defined by the game" (ibid: 74).

For Salen & Zimmerman (2004) there must be a deeper understanding by the designer of how these mechanics are used in the game. In deciphering this element, they cite core mechanics as most salient in understanding how a game's formal system transfers into a worthy experience.

Core mechanics are the repetitive aspects found in virtually all games (Salen & Zimmerman, 2004). They are the components that need regular revisiting and may also involve re-action in order to make progress in the game. Salen & Zimmerman (ibid) cite three components that produce the core mechanic:

i. Sensory output to player (system to player)
ii. Players ability to input (player takes action), and;
iii. Guiding decision-making processes (ibid: 317).

As board games are a known entity that most people are familiar with, it is a logical turn to use this format for any serious game being developed as a test source for meeting set learning objectives aligned with desired mechanics. In class rooms around the globe, board games are frequently used as a teaching aid and a source of fun to deliver learning objectives (Łodzikowski & Jekiel, 2019; Wright et al, 2000). They are relatively easy to construct and adjust as new insights into what works, in terms of the mechanics, are provided via playtests (Gomez & Marklund, 2018; Ernest, 2011) making them ideal for a research project of this nature with limited resources available. Furthermore, board games are proven to increase emotional connectedness of players while learning is in progress (Łodzikowski & Jekiel, 2019; Gomez & Marklund, 2018; Holmes & Gee, 2016). Beyond the classroom setting board games that are simple in design and printable can be used as a means to extend the learning capabilities as learners may be motivated enough to print these games and repeat play in their own time, thus introducing a stealth method of extending learning and engagement between learners and the topics being taught (Łodzikowski & Jekiel, 2019).

3.7.2 Dynamics
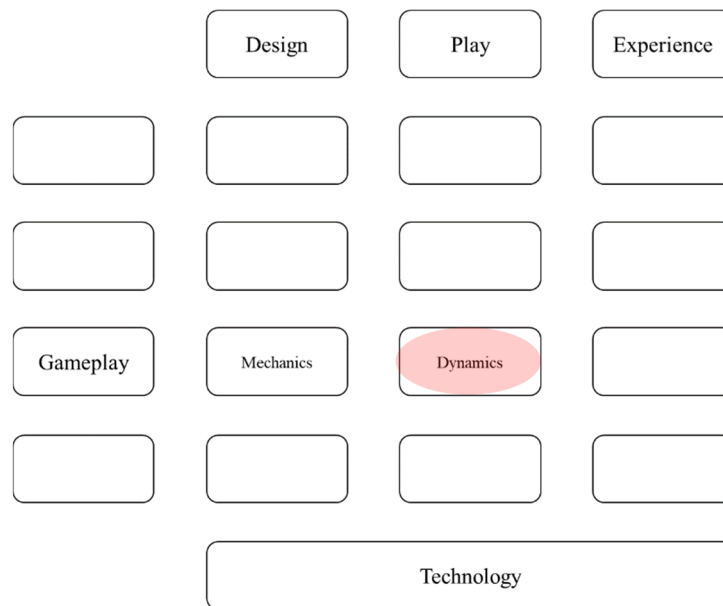
Serious games are a form of constructed reality. They are differentiated from games for pure entertainment as learning objective(s) are found at their centre. In order for the serious game to reach these objectives, and to enable learning to be demonstrated (a learning outcome), there needs to be a sound balance within the game between the components that contribute to the game's fabric and an understanding of the holistic game's outcomes.

Aiding serious game designers to realise this holistic approach games can be thought of as systems. Systems in turn produce the dynamics within the game as experienced by the player. It is the time of play, a player's emersion, their engagement, their social interactions and their game interactions. It is the behaviour which produces results in, and for, the game world.

Systemic thinking empowers a designer to think of the game as housing the components that may combine to produce a complex whole (Salen & Zimmerman, 2004). But this in turn can be problematic as we explore this concept of system thinking at a deeper level. Salen & Zimmerman (ibid) provide examples of this in the game of chess. If we frame it as a game of mathematical human computation, as a socially interactive intermediator or as a game of conflict, each changes the frame through which the game can be viewed and understood.

From a constructionist perspective this re-enforces the view of human nature and reality consisting of multiple realities, all with equal validity from the perspective of the agent who holds that paradigm (Gergen, 1999). For the serious game designer these perspectives may be found to have parameters in the form of the learning objectives. These may act as a barrier to alternative perspectives on the game being developed. These learning objectives may be in a position to provide clarity through the outcomes they are attempting to achieve and in doing so, position one perspective to the game as the most dominant.

Salen & Zimmerman (2004) define a system as "a set of things that affect one another within an environment to form a larger pattern that is different from any of the individual parts" (ibid: 50). They cite Littlejohn (1989) as they define the four components necessary in any system. These components are consistent and as they go on to demonstrate, can change the frame through which the game is understood, which has ramifications for the designer of any game.

Table 14: Four Elements which Constitute a System (Salen & Zimmerman, 2004: 51).

Object	The parts, elements, or variables within the system. These may be physical or abstract or both, depending on the nature of the system.
Attributes	The qualities or properties of the system and its objects.
Internal Relationships	These are among its objects. A crucial aspect of systems.
Environment	They do not exist in a vacuum but are affected by their surroundings.

By way of an example, Salen & Zimmerman (2004: 51-52) view the game of Chess from different perspectives (tables 3.7.2ii to 3.7.2iv below) and the results serve to emphasis the differentiation that these perspectives may provide to a game that is essentially static, unlike football, for example, there have been very few changes to the game's dynamics.

Table 15: Chess as a Mathematical (formal) System (ibid: 51).

Object	The objects in chess are the pieces on the board and the board itself.
Attributes	These are the characteristics the rules give these objects, such as the starting position of each piece and the specific ways each piece can move and capture.
Internal Relationships	Although the attributes determine the possible movements of the pieces, the internal relationships are actual positions of the pieces on the board. These spatial relationships on the grid determine strategic relationships: one piece might be threatening another one, or protecting an empty square. Some of the pieces might not even be on the board.
Environment	If we are looking just at the formal system of chess, then the environment of the interaction of the objects is the play of the game itself. Play provides the context for the formal elements of a game.

Table 16: Chess as an Experiential System (ibid: 51).

Object	Because we are looking at chess as the interaction between players, the objects of the system are actually the two players themselves.
Attributes	The attributes of each player are the pieces he or she controls, as well as the current state of the game.
Internal Relationships	Because the players are the objects, their interaction constitutes the internal relationships of the system. These relationships would include not just their strategic interaction, but their social, psychological, and emotional communication as well.
Environment	Considering chess as an experiential system, the total environment would have to include not just the board pieces of the game, but the immediate environment that contained the two players as well. We might term this the *context of play*. Any part of the environment that facilitated play would be included in this context. For example, if it were a play-by-email game of chess, the context of play would have to include the software environment in which the players send and receive moves. Any context of play would also include players' preconceptions of chess, such as the fact they think it is cool or nerdy to play. This web of physical, psychological, and cultural association delineates not the experience of the game but rather the context that surrounds the game, the environment within which the experience of play occurs.

Table 17: Chess as a Cultural System (ibid: 52).

Object	The object is the game of chess itself, considered in its broadest cultural sense.
Attributes	The attributes of the game would be the designed elements of the game, as well as information about how, when, and why the game was made and used.
Internal Relationships	The relationships would be between the game and culture. We might find, for example, a relationship between the "black and white" sides of the game and the way that race is referenced when the game pieces are represented figuratively.
Environment	The environment of the system extends beyond any individual game of chess, or even the context of play. The total environment for this cultural framing of chess is culture itself, in all its forms.

These tables are not exhaustive and Salen & Zimmerman (2004) stress the possibility of extending any of these criteria for games, these tables are an example of how, from the designer's perspective, these elements can affect both the dynamics and the mechanics of the game. For the designer these can never be side stepped, their presence is always there and as Mead (1932) described, the past is present. A designer can weave to and thro between these classifications of the system they are producing but the frames of reference themselves can never be abandoned. They are pervasive in games design. Salen & Zimmerman (2004) suggest that it may be advantageous for the designer to limit their frames of reference when designing a games dynamic but the designer has always to remember that the systems are ever present in one form or another and thus should never be forgotten (Salen & Zimmerman, 2004).

In many ways Salen & Zimmerman (ibid) are reminding the designer to see things as they were intended to be seen rather than the way the designer thinks they are. Their biases, although permanent and present, need to be set aside for the cognition of both the learning objectives and the interactions of the game. This statement speaks of the difficulty for the designer when considering the dynamics of the serious game. This issue will be greater still for the designing of endogenous games where the designer is possibly starting from scratch and imagining a new game.

The pressures on the designer may not only be internal, there may also exist external biases and perceptions of what constitutes a good 'fit' with the learning objectives from the various stakeholders in the serious game. The ability to balance potential conflicts with the necessary framing of the serious game, hint at the potential skills deficit of the designer.

3.7.3 Affect

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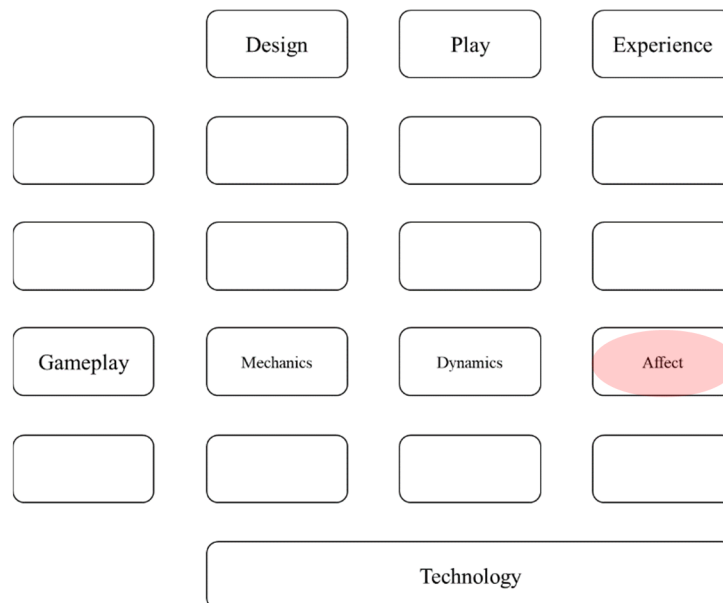
Games are often associated with fun (Heeter et al, 2003; Malone, 1981). For the player this element is either obtained (they experience fun) or not obtained (they do not experience fun) (Winn, 2009). For the designer the concepts that lead to the triggering of this emotional / physical state needs to be formally mapped and justified in the design process. Winn (ibid) emphasises a reductionist approach that decomposes this element in order for the designer to gain a more holistic rationale for the fun the player is to experience.

However, it should also be noted that simply adding fun elements to the serious game is not of itself going to make the serious game more effective as a learning tool. Effective quality and quantity of learning can only be gained from sound pedagogical planning, often a process started prior to the development of the game (Gunter et al, 2008; Susi et al, 2007; Zyda, 2005). The effectiveness of the game depends to some degree on the motivational qualities sought which are then afforded via the game itself. Ritterfeld & Weber (2006) also highlight this issue, but rather than see motivational affordances as one of a number of implicit affordances, in video games this may be for an entertainment effect, they offer a paradigmatic view that relates education and entertainment in a classified representation. Ritterfeld & Weber (2006) focus on the pedagogical supplier to the game (in this paper they are analysing video games) and their view of the use of entertainment in the pedagogical setting.

The effect of this is to highlight three possible outcomes that are based not solely on the material to be taught or the resources available, but on the subjective bias of the pedagogue, this results in three theoretical "pathways" (ibid: 406) that act as a nexus between entertainment and education:

- Motivation paradigm (brings the topic to the learner's attention)
- Reinforcement paradigm (successful learning is rewarded), and:
- Blending paradigm (learning has an enjoyable effect).

Furthermore Ritterfeld & Weber (2006) note that only the reinforcement paradigm offers the player some form of extrinsic reward for their reaching set learning goals. Motivation and blending paradigms, in contrast, both nurture intrinsic rewards. This has ramifications for game designers in that the motivational affordances in the perceived game may be misaligned with those sought by the pedagogue. Likewise, the subjective biases of the pedagogue may create tension in the design process.

Motivational issues are also salient for any game trying to simulate the crowdfunding experience. The various models of crowdfunding (donation, reward, equity, interest and mixed) may require differentiating motivational paradigms in the game. Ultimately this issue will be one of design and the selection of the game 'type' in that either an endogenous or exogenous creation is used as the basis for any simulation. Seeking to simulate the equity model experience, for example, could result in a fairly static product that varies very little in terms of the content and the enjoyment of the player.

The result of this could be a demotivating product that fails to engage the player / learner and so fails to create the desired effect in that learner / player. Immediately this presents a bias; this researcher leans more toward a fun and bright disposition. He would require any simulation to be an enjoyable, fun one for the player / learner. The subjectivity of these terms means that it is difficult for the researcher, writing this in our past, to portray what exactly they require for the product to be enjoyable or fun, even for themselves. Part of this difficulty is that they have no pre-conception of what the game will result in or the form it will take. These are distant fantasies but nevertheless there is an embedded desire for these issues to be salient in the design of the game.

Going some way to achieving this goal, Heeter et al (2003) studied a number of commercial and serious games centred on the space exploration genre. Their analysis, built on the original 14 forms of fun that had been proposed by Garneau (2001), Heeter et al (2003) added two further categories, the final two below of *altruism* and *learning*:

- Beauty
- Immersion
- Intellectual Problem Solving
- Competition
- Social Interaction
- Comedy
- Thrill of Danger
- Physical Activity
- Love
- Creation
- Power
- Discovery
- Advancement & Completion
- Application of an Ability
- Altruism, and:
- Learning.

Taking these as the starting point for the more formal design process, serious game designers are now able to better align their wish for fun elements in the game with the desire to produce a learning product. This was another issue Heeter et al (2003) uncovered in their empirical study, educational games often lacked learning opportunities beyond the game play experience itself. A player may be engaged with the game world and report enjoyment of their playing of the game, but that did not necessarily lead to learning, and as seen above, the opposite was also found by Ritterfeld & Weber (2006).

Effective learning objectives must be stated as a coherent set of associated aims in the serious games production. Once these are recognised and aligned with the mechanics and dynamics the designer of the game can begin the build process with the more likely result that the desired dynamics being produced will lead to the desired learning outcomes (Winn, 2009). This linear approach produces the final, designed for, affect in the game, where the player experiences desired and intended emotional states.

For the designer, there is further support found in this process. Using these objectives, they can effectively benchmark various aspects of the game against these and make judgements about the success of each. The criteria for this judgement can be set in advance and although the outcomes may vary the iterative process of the design itself can mean sound adjustments are made leading to the desired outcomes in the product (Winn, 2009).

Iterations of this nature are inclusive and take account of the fun elements as much as the learning objectives embedded in the game. Seen this way, playtesting phases have clear sets of criteria against which they are being measured and assessed. Overall affects impacting the experience of the player can also be based on these same criteria used in the iterative process as game development continues (Winn, 2009).

3.8 User Experience Layer
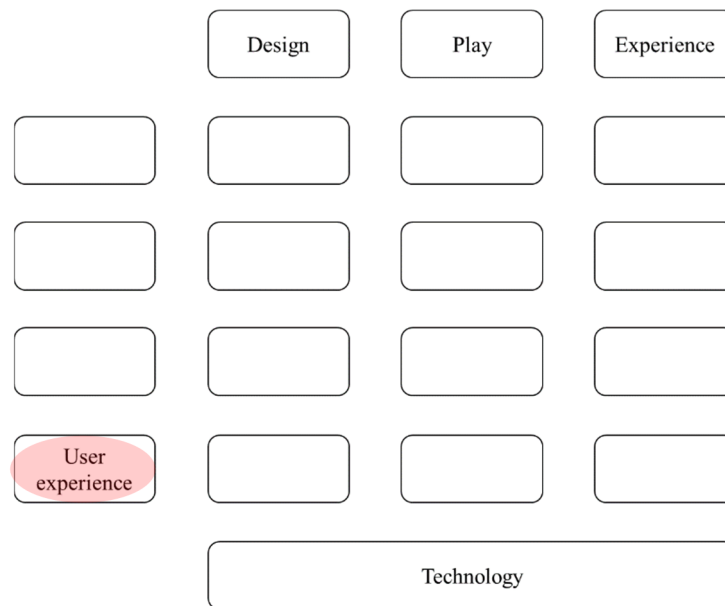
Conceptualising the whole DPE Framework (Winn, 2009) as a production process, one can understand the need for both visible (e.g. the experience for players) and backstage (e.g. planning, organising and managing) of the production. Starting as the DPE Framework (ibid) does with the backstage elements (learning and storytelling layers) it then moves to the sometimes-implicit gameplay layer where many blended opportunities arise before the more aesthetically relevant layer is provided through the user experience. Thus, the linear process could be thought of as part of a spectrum of contact points for the player, which ranges from very few (management planning and design) to a lot (experienced by end users).

The player's visible layer camouflages the graft that had been performed behind the scenes in the board game's production. For the player, understanding the planning and strategy involved in the development process is not of general concern. Players are left with only the visible product they voluntarily experience (De Koven, 2013; Caillois, 1958). This final layer of user experience, being the most visible to the player, is the focus for the player on a number of aesthetic levels (audio, emotional, physical and visual) (Winn, 2009).

For serious game designers there exists a two-dimensional tension not present with games for pure entertainment. This tension is found at the confluence of delivering a fun and enjoyable game product, and, in parallel, delivering pre-set learning objectives (ibid). The user interface, being the most visible element of the whole framework, is where objectives are most achievable for a designer; this is where the learner / player interact with the game.

Good design elements of the game are necessary for the product to be both engaging and to embed a utility that leads to constructed learning experiences. As Winn (ibid; 1018) states: "The game design manifests itself through the user interface." Transparency of the user interface removes the hesitation that would otherwise be present as a player has to stop to read instructions, or, in the case of digital games, fumbles for the correct button to press to achieve desired actions (ibid).

In this layer and the next few sub-chapters, we will problematise the immersive elements of a serious game, which is countered with arguments in favour of the very same immersive qualities. This is followed by a focus on the constructed realities of the designer and the consequences this may have for the serious game's development before considering the issue of designing for specific objectives and outcomes.

3.8.1 User Interface
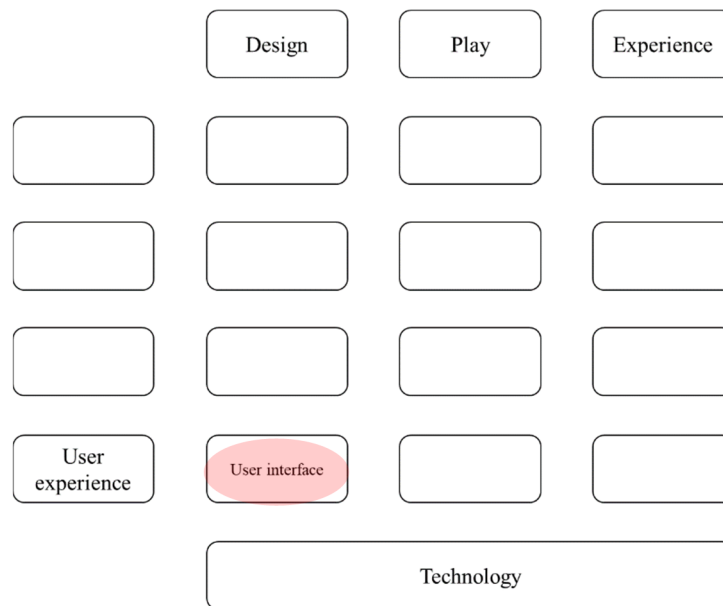
There are various concerns for designers when considering an interface between game and player. Players' in their various game world states may become separated from reality, an element which is being taken to new levels with the introduction of augmented and virtual reality (Girard et al, 2013). This state of emersion can also be seen in board games where the focus on the game and the user interface with the parameters of the board become an abstraction to reality (Huizinga, 1930). For Bogost (2011) this can be problematic for the serious game where training or education at some level are expected to have been attained. Bogost (ibid) sees this as a failing of serious games in that the abstraction of the player from reality, and the emersion they may encounter in the serious game, may not actually provide them with the necessary skills needed in the real world as they encounter issues and are expected to deal with the messiness of social interactions beyond the interface they have encountered in training.

This negative view of serious games as a learning tool from Bogost (2011) is refuted by Wouters et al (2013) when they state that computer games (the only form analysed in their paper) are capable of simulating tasks in the game that are the same as those that will be required in the real world. But they also provide a caveat in their paper, that is, that these serious games must utilise the same cognitive processes as would be found in the real world.

This point seems relevant here as discussion of the user interface in the context of Winn's (2009) paper makes use of a player's cognition to comprehend and accept the parameters of the game. For the designer of serious games; it demonstrates the complexity of the pedagogical issues that Gunter et al (2008) identified.

User Interface is especially problematic for the physical board game designer. Iterations in the digital form may be instantaneous to the products morphology into something more aligned with an aesthetic that is perceived as desired by either the player or the designer. For the board game product with its physical presence, this possibility is a potentially longer journey. Reflections for the designer may be purposeful and desirable but the fact that the players are sitting in front of a physical product composed of atoms, as opposed to a digital product composed of bits, creates a greater tension in that material costs and production times for changes may be higher and longer. In the extreme these could act as a barrier to changes being implemented, even when evidence from playtesting demonstrates a need for such changes.

3.8.2 Interactivity
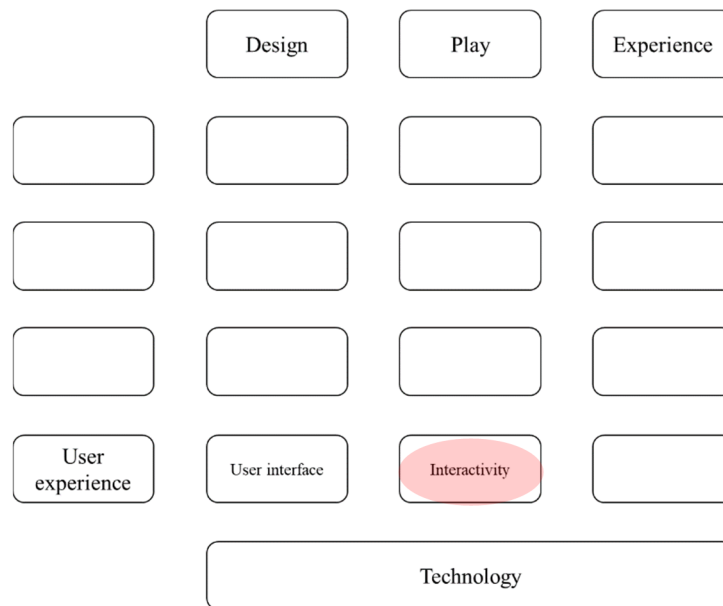
Interactivity is significantly reliant on the choices made by the games designer (Winn, 2009). The design elements that lead to the possibility of interactions at any level within the game world are predetermined by the subjective design principles and values that are present within the cognition of the creator (Salen & Zimmerman, 2004). Therefore, it follows that any constructed interactivity will be emergent based on a subjective interpretation formed from a designer's own cognition. This can be problematic if, and / or, when, interpretation of the objective observation of the game, the reporting of play tests or the interpretation of a set of learning objectives in a serious game is required.

This is especially salient when the designer lacks any prior knowledge of the subject that forms the basis for the serious game. The issue may be one of general cognition of the topic or simply failing to comprehend the necessary interactions sought for the learner to reach the stated goals. Shaffer (2006) emphasises the point that for the designer this also becomes problematic if the designer re-enforces the underlying assumptions that they began with in the early development phases. As Shaffer (2006) notes auto expressivity has a relatively long history in academia, but this shifts the focus of the underlying assumptions from designer to learner.

In this context the game, or simulation, helps to challenge and reiterate some of these assumptions in the hope that learning and expanded knowledge are gained by the learner / player. It thus becomes difficult to separate the game world from the world that the designer inhabits and interprets. A caveat to this lies in the learning objectives, in the case of serious games these are a defined set of necessities that the game is attempting to achieve through adhering to, and making an attempt to produce, a game design that meets the established learning objectives. This impacts on the design process and influences the choices made in terms of how players interact and engage in the game. There is a direct influence on the dynamics of the serious game as outlined by Salen & Zimmerman (2004) and reproduced below:

Table 18: "A multivalent model of interactivity", taken from Salen & Zimmerman (2004: 59-60) [sic].

Criteria	Function
1 Cognitive interactivity; or interpretive participation	This is the psychological, emotional, and intellectual participation between a person and a system. Example: the complex imaginative interaction between a single player and a graphic adventure game.
2 Functional interactivity; or utilitarian participation	Included here: functional, structural interactions with the material components of the system (whether real or virtual). For example, the graphic adventure you played: how was the interface? How "sticky" were the buttons? What was the response time? How legible was the font on your high-resolution monitor? All of these elements are part of the total experience of interaction.
3 Explicit interactivity; or participation with designed choices and procedures	This is "interaction" in the obvious sense of the word: overt participation by clicking the non-linear links of a hypertext novel, following the rules of a board game, rearranging the clothing on a set of paper dolls, using the joystick to maneuver Ms. Pac-Man. Included here: choices, random events, dynamic simulations, and other procedures programmed into the interactive experience.
4 Beyond-the-object-interactivity; or participation within the culture of the object	This is the interaction outside the experience of a single designed system. The clearest examples come from fan culture, in which participants co-construct communal realities, using designed systems as the raw materials. Will Superman come back to life? Does Kirk love Spock?
Responses to this model in the development of the serious game produced in this research are given below in section 5.2.	

Games are socially constructed entities and as such the final product is reliant on the perceptions of the designer to create the intended interactions that a player should experience during the playing of the game (Sudnow, 1983). Salen & Zimmerman (2004) build on these insights from Sudnow (1983) and elect not to set a single definition of interactivity, but rather to demonstrate the levels that concern a designer most. These are split into four modes, each emphasising different design functions, as the replication of their work above demonstrates (Table 18).

Locating fun in this model is problematic as the concept is (Buchinger & Silva Hounsell, 2018) and is not located in any one category. Games may be viewed as 'fun' in that they allow elements of seriousness to be framed in such a way that they produce a sense of fun in the user (Michael & Chen, 2006). The association between games and fun is sometimes seen as an embedded relationship. But as Rigby (2014) states 'fun' does not guarantee that the desired outcomes of a serious game will be reached. Marsh's (2011: 63) definition of a serious game came with a final clause that stipulated "the quality or success of serious games is characterized by the degree to which purpose has been fulfilled". If fun is one of these purposes then a clear definition is needed to clarify when and how the quality of success has been reached.

Indeed, Rigby (ibid: 114) explicitly remarks on the opaque relationship between the concepts of fun and gamification more broadly. The relevance of this is not just confined to academic circles but also has a significant instrumental impact with wider socio-economic consequences. Part of the problem in this conceptual application of fun is that the term is taken at face value and implicitly taken to mean that a more sustainable type of engagement will emerge from the simple application of fun gamification mechanics across sectors (ibid). But this is not necessarily the case (Gunter et al, 2008).

Part of the problem in this perception of gamification more broadly is the definition of 'fun'. Fun here is strongly associated with the concept of pleasure. Pleasure in a design context can be a significant intrinsic motivational affordance (Rigby, 2014). Therefore, the context of this argument for the inclusion of pleasure revolves around the central tenet that the pleasure derived by the individual is via a visual experience.

This is most salient in the digital gaming world where classical aesthetic theory is often implicitly relied on as a foundation for pleasure (Kirkpatrick, 2011). Pleasure, in this context, is a gained stimulate derived through the pleasing of the *visual* cortex.

Kirkpatrick (2011) explicitly utilises Kant as his lens for analysing the aesthetic aspect of pleasure. Pleasure and play are related forms in classical aesthetic doctrines, which at some levels are abstract intellectual modelling, and yet, as a practical tool, there are implications at all levels of the design process. For the serious game designer this is vital as: "Aesthetic experience occurs when we find something is pleasing to us by virtue of its form" (ibid: 23). Form, therefore, needs deeper consideration in the designing of games with specific purposes as their aim.

This may be more of a challenge for a board game designer who may have no opportunity of immersing the player in the game world to the depth that a digital game may allow. The opportunity for (visual) stimulation is more limited. However, a serious board game may take advantage of affording players a combination of stimulation and aesthetic pleasure through social interaction (Buchinger & Silva Hounsell, 2018). This shifts the context of fun from an exclusively visual aesthetic to one which is more inclusive, which finds pleasure and fun within game play. These elements are embedded design choices and include challenges, curiosity and fantasy (O'Brien & Toms, 2008).

Arousing curiosity in the learner / player and including levels of both fantasy and challenge were emphasised by Malone (1982) when he examined the design of user interfaces for early computing. His findings are some of the underlying foundational insights regarding the sustainability of the learner / player in the interaction with a computer mediated learning environment (Arrasvuori et al, 2011, O'Brien & Toms, 2008; Sim et al, 2006).

An aspect of serious games is that the experiences they afford are emotionally connected to the player and thus retention of knowledge on factual, conceptual, procedural and meta-cognitive levels can be enhanced (Anderson et al, 2001). This is partly enabled through the pleasurable experience acting as a conduit through which a player may wish to be in the game. Positive emotional experiences encourage learners to repeat actions that they have found pleasurable, enjoyable and fun (Gee, 2007).

Even multiplex tasked based learning can trigger these emotive states and carry the learner / player to higher levels of understanding (Rigby, 2014). If this is a requirement in a serious game, then fun, pleasure and enjoyable experiences are necessary for a serious game to deliver predetermined learning objectives. Fun thus becomes a primary concern in the design process of a serious game with intentional learning objectives.

3.8.3 Engagement
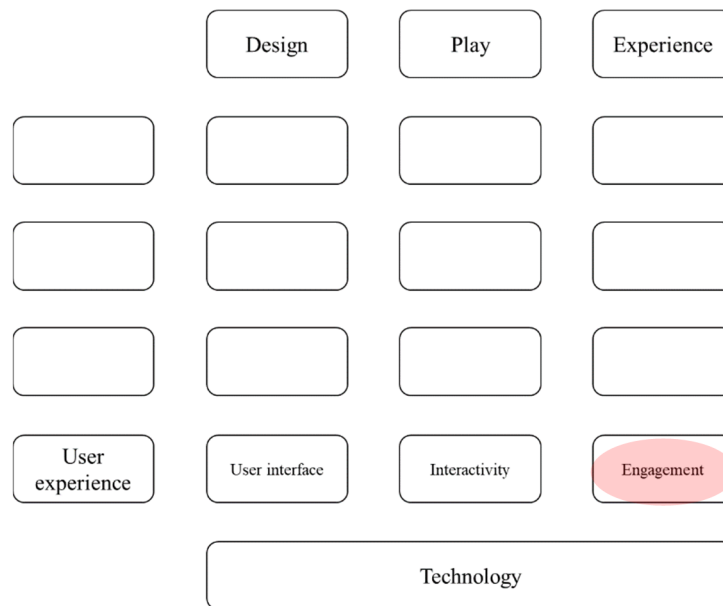
Huotari & Hamari (2012) emphasise the inability of the designer to corral the engagement of the player in one direction. Designers, they state, can design for a particular outcome but cannot offer guarantees that these outcomes will be met. Designers are at the mercy of the player's engagement with the game.

There are obvious problems with this scenario for the serious game designer who wishes to develop a game for the purposes of meeting certain set learning objectives. If player engagement can affect the type of engagement that a player experiences, then the view put forward by Huotari & Hamari (ibid) creates a tension in that the resulting outcome may be an unplanned one.

This is a point also noted by Gee (2007). Commercial games, designed for entertainment purposes, can offer players an intricate and difficult set of learning possibilities implicit in the fundamental engineering of the game, that is, learning as in becoming familiar with the mechanics and dynamics of the game as opposed to educational mastery of a topic. Engagement, for Gee (ibid), should not be seen as a separate entity from the learning objectives serious games are aiming for. In this respect the learning objectives need to be aligned with the game's appeal (Gee, 2007; Sherry & Pacheco, 2006).

Responsibility for engagement rests with the designer who must ensure that the engagement / objectives ratios are appropriately aligned. One possible method of measuring this is through observation of playtesting using a checklist, recording whether or not learning objectives were achieved by the players.

An essential factor in the engagement of the player in a serious game is fun (Gee, 2007; Lieberman, 2006; Sherry & Pacheco, 2006). For the player to experience fun at the front end of the game, at the point of contact with the product, means designing for this factor from the outset. In seeking to understand a player's experience of fun in a serious game, the iterative process of design recalibration will mean that each version created post-playtest will remove design flaws that fail to provide the opportunity for the learning objectives to be achieved while allowing for players to have fun (Peketz, 2016).

3.9 Technology
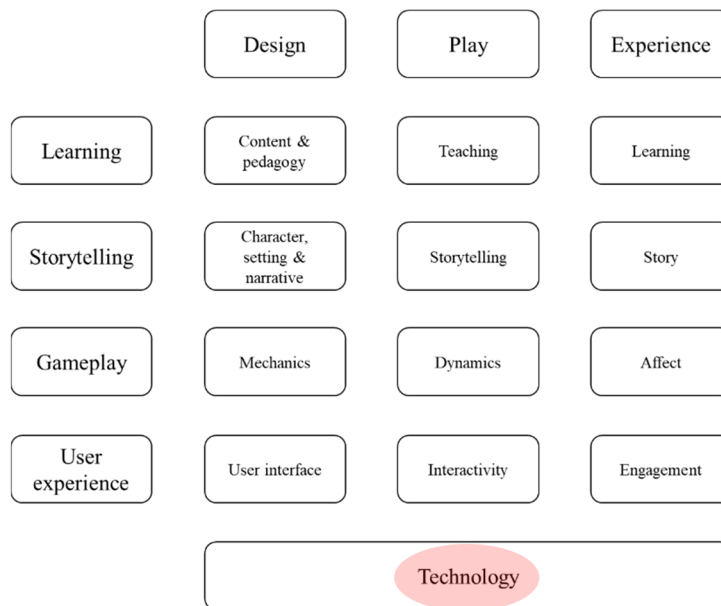
Underlying all the layers that combine to create the DPE Framework (Winn, 2009) is a reliance on, and need for technology. Access to and the ability to use technological infrastructure is a significant factor that may act as a constraint on the potential to design and build serious games.

In many ways access to and knowledge of technology drives the design process, playing a significant role in the types of games produced for any of the many genres. The reliance on ancient gaming tools (board, cards and die or dice) (Bell, 1979) in combination with contemporary graphic software may produce a game that is reliant on concepts from our past which are greatly enhanced with contemporary tools.

The issue then becomes the optimal design for reaching the learning objectives being sought in the design. It becomes necessary to understand the use of technology and not just assume there is sufficient access. Technology, according to McLuhan & Fiore (1967), is fraught with issues over access and bias. Technology is often supplied by corporations where licences are needed to operate the proprietary software. Even open source software has its criticisms (see 1.14 above) which are centred on the ability to mine data and control the open source movement itself (Slee, 2015).

For the educationalist seeking to utilise technology and neutralise opposition to its use in an educational setting, they need to be aware of the undercurrents that are feeding this concern over its use. The question remains; why use technology? For Kanuka, (2008) there needs to be an assessment of the underlying philosophical stance of the educator before technological considerations should be made. Kanuka (ibid) uses determinism as her lens for assessing the degrees of influence technology has on individual educators.

Unfortunately, Kanuka (2008) fails to provide any explicit meaning of the exact form of determinism she is referring to. But she does identify three categories that suggest she is faithful to the *regulatory* form of determinism (Mautner, 2005).

This branch of determinism holds the view that for every event or state of affairs there are antecedent events or states of affairs that are consequences of the antecedents causes reflected in the true laws of nature relevant to the focus of these events or states of affairs (ibid: 155). Reformulating this statement; the past affects our present and future actions or events (Mead, 1932), and the more stable laws of nature are the means through which this process of effect can be seen.

Kanuka's (2008) three categories are:
- Uses determinism
- Social determinism
- Technological determinism.

Understanding the educator's own perspectives and underlying philosophy, will, according to Kanuka (ibid), provide a loose justification for the use of technology. This is needed as educators must accept that there are always biases present in technology and by understanding these biases and their own motivations, a better use of the technology in question becomes possible. This is a reflection of the arguments advanced by McLuhan & Fiore (1967) and Slee (2015).

It is a warning to the kind of triumphalism of the possibilities of the Web as espoused by Benkler (2006) that most human ills of various sorts could be solved via technology. Benkler's (ibid) view is that the motivational affordances of the Web create a set of freedoms that transform the antecedent methods of cultural production into a more open and equal form. Agents are free to mix and reshape cultural production into something more attuned to their desires and needs.

But as more recent events, especially those involving platforms like Facebook have shown, the debate over surveillance and data protection is far from being solved (The Economist, 22/03/2018.). These issues are also present in the mind of the educator seeking to implement technological affordances to advance their training.

The three underlying philosophical orientations that Kanuka (2008) addresses begins with the uses of determinist orientation. This is perhaps the most simplistic approach to technology in that the orientation positions technology as a neutral tool that extends the capabilities of the educator and the learner. The artefacts that are technologically driven and produced in this view are neutral. They are present merely as servants to the educational requirements of the agents involved.

But this view is overly simplistic according to Kanuka (ibid) as the social context of these artefacts and the political necessity and drive to introduce technology are ignored. An implicit political agenda may exist that creates the need for the introduction of technology that masks the instrumental rationale for the introduction.

As a result, the intentions of the actors become the focus, not the precursor causations. This narrowly focused view risks losing sight of the social and / or political origin of the technology, its deployment and subsequent use. For this reason, technology may be thought of as a fix by educator management for the issue's pedagogical institutions face (Kanuka, 2008: 97).

Social determinism is less enthused by the interactive benefits of technology alone and more open to interpretations of the technological artefacts within the "social systems and cultural contexts" (Kanuka, 2008: 97). The learning experiences are the focus for these educators as the technological artefacts are socially constructed entities that are impacted by wider socio-cultural contexts. Proponents of this view, according to Kanuka (ibid), are also more open to the breaking-up of the institutions that had traditionally held monopoly over the educational system.

However, this leaves open the social choices of the agent to influence the technology and the artefacts that ultimately become the vehicles for delivering learning and teaching. In a liberal market this could sign-post the end of freedom of speech and other institutional values, which prior to the instrumental development of technological artefacts for the pedagogical sector, had not been considered at risk.

But Kanuka (ibid) positions these arguments as inaccurate as they over emphasise the power of social context to hold influence over institutional education. As she states; "Social contexts do not simply manipulate education systems at will. In our everyday lives, there is a dynamic mutual shaping between the social, technology, and user's environments" (Kanuka, 2008: 98). This view may become outdated as technology advances and artificial intelligence starts to dominate the educational sector.

It may also be seen in the future as a naïve position given the sheer dominance of certain social media platforms. As educational technology is instrumental so it is open to influence from market actors and corporations, that may yet prove to be more lucid in their overarching objectives of providing for the globe's population, on their own terms (Slee, 2015).

Lastly, Kanuka cites technological determinism as an orientation where technology holds a central position in our lives. This has some negative connotations for educators who may view technology as being imposed or replacing the proven formulas of the past. These views emerge from the Marxist doctrine of the dominance of the advantaged classes over those below them. In this view, they use technological affordances to support and strengthen their positions within society. This is echoed by Bourdieu (1984) (see 2.7 above) and his analysis of the French school system in the 1970's.

Scholars who support this view are fearful that the technological artefacts that are making education more accessible, to a wider population in a greater number of geographical locations, are in fact being led by the liberal market. This in turn results in several negative outcomes: erosion of academic freedom, the commercialisation of education, the de-professionalism of faculty members and the erosion of academic freedom (Kanuka, 2008). These are at the expense of more traditional pedagogic values of holistic views, engagement, reflectivity and cognitive depth (ibid).

A counter view is also held by some that these same technology artefacts are beneficial to the pedagogical experiences as learning is enhanced via these artefacts. Positive views advance the arguments that technology can help with "argument formation capabilities, increased writing and communication skills, complex problem-solving abilities and opportunities for reflective deliberation" (Kanuka, 2008: 99). These arguments assume that asynchronous communication tools are better at advancing higher order learning.

But as new forms of Internet use and relations emerge there may yet be further orientations that become central to the issue. The choice is ultimately down to the motivation of the individual educator. Now, armed with an understanding of their own biases and a subjective overview of the deterministic orientations with which they are approaching the application of technology, they may be able to address the question of why they intend to use technological artefacts with a clearer and more succinct understanding. Access may still be an issue, but why access is required can at least be answered with confidence.

3.10 Chapter summary

Utilising the DPE framework from Winn (2009) serious games designers may contextualise design decisions against a robust framework that demonstrates the potential ability of these serious games to deliver learning objectives when they are a required element of the game. Player interactions are an essential ingredient in meeting these objectives and also as an element of experiential play in terms of the mechanics and dynamics of the serious game.

Adopting a social constructionist lens (Burr, 2003; Gergen, 1999; Berger & Luckmann, 1966) guides the design process and provides a foundational paradigm from which design decisions can be framed, observed and reported. Through this lens the realities of the players are understood to be multiple and agent biases within these realities are an accepted element of the designed consequences of the serious game and thus of the research.

Adopting the DPE framework (Winn, 2009) allows for analysis to be incorporated while also providing a guide for the designer as they progress iteratively through various stages in the design process. Many frameworks were considered but the DPE framework (ibid) was a more salient framework as it provides the most stringent set of criteria to meet the serious games objectives. These criteria were expanded in this chapter as each of the original layers was critiqued and then expanded providing a deeper analysis of each.

This critique also provided clarity for the designer as a cohesive and holistic view of the game could be gained at a very early stage. Incorporating the DPE framework of serious games and the learning taxonomy from Anderson et al (2001) produces a sound base for the building of a serious game. Blending these further with the crowdconsent framework it is possible to consider a more focused serious game. This leads to the formulation of research question two:

RQ2: How can the framework for crowdfunding help the design of the game?

At this stage the question remains open as to how the framework for crowdfunding can support the design of a serious game in the context of crowdfunding. But there are some signs emerging as to how this might take shape. Pedagogical issues are at the heart of the game, the DPE framework helps guide the design, the game should be fun in terms of the interactivity of the players (and desired by the researcher), and finally, it is a constructed reality that should simulate crowdfunding in the real world.

Exploration of this latter feature suggests the genre of the serious game is more akin to simulations than to any other genre of serious game. Serious games are an important evolution of games (Ranchhod et al, 2014) and gamification more generally. They represent a departure from mono-methods of teaching and learning and are, when designed right, more motivating than some traditional forms of pedagogy (Fox et al, 2018; Kim & Watson III, 2017), and considering these findings, research question number three can be stated as:

RQ3: How can the simulated game educate the applicant in the making of appropriate decisions in the real-world scenario?

Real-world scenarios are an embedded element of the serious game that seek to simulate the actions and consequences of actors 'out there' in the real world. This research seeks to address the issue of how to optimise the nexus between the experiences of the crowdfunding applicant and the designed for experiences of a serious game. Education is a primary goal of this research and so the following combination will address these research questions and identify the optimal design.

Figure 6: Combining Frameworks.
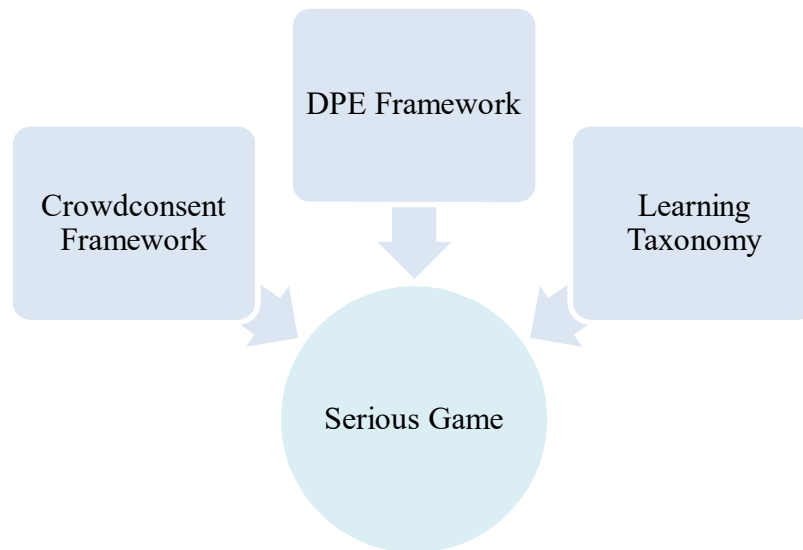
The decision to use a table top board game was premised on the social aspect of these games and the need to observe the interactions of the player with both the game and with other players. These observations would help respond to RQ3 (above) and make optimal use of the resources available to the researcher in the limited time he had to develop and test the game. Crowdfunding is reliant on shared experiences of the applicant and the crowd, board games can be designed to include experiential activities and in so doing the social aspects can be inherent in the very nature of board game design (Gomez & Marklund, 2018; Duffy, 2014). With these considerations at the forefront of the games design a board game was considered a best match with these needs and the limited resources available. The game would be called *Crowded Comments*, and as this was a board game, the abbreviation of CCBG (Crowded Comments Board Game) was used and playtests subsequently began (see 5.2.1 below for play test results).

CHAPTER 4: METHODOLOGY

4.1 Introduction

Social constructionism emphasises the existence of multiple realities with valid (ontological) claims as to how judgements are made about the nature of reality (Burr, 2003; Gergen, 1999; Berger & Luckmann, 1966). This knowledge is a constructed level of understanding, constructed not by natural phenomenon but rather by agent through, and at times as a product of, social interactions. This challenges the natural science paradigm and the objectivity of the more general assumptions of reality this field often sought as a focus (Denzin & Lincoln, 2005).

In Gergen's (1999) view this shift from the objective brings to the fore the ideological assumptions of the past. The flourishing of the social constructionist paradigm challenges doctrine focused on human nature and positions agents as central in determining and ascribing (internally and externally) the reality they witness. They do so through interaction and engagement with other agents, a form of "social process" (ibid: 88).

Gergen (1999) synthesizes prior ideas of the past's influence on the present and presents a compelling case for the multiplicity of the realities acknowledged in contemporary social sciences. He also acknowledges that these are not without fault and are far from being a utopian construct (whichever angle of reality this resides with). The main problem for Gergen (ibid) is individualism and the lack of collective identity in the West's philosophy, through which, a more stable and sustainable society could, in his view, emerge (ibid).

There exists a similar (if a little less complex) problem in game design where system thinking is employed and choices made that correspond to and support certain paradigms influencing the development of a game in the real world, framed as a system in its own right which produces an experience (Kosa & Yilmaz, 2017). Changing the frame changes the system's context, especially for developmental stakeholders. For the social construction ideology this frame is essential as it defines the context for the interaction between agents; it formulates the reality and the rules that each should follow (Burr, 2003; Gergen, 1999; Berger & Luckmann, 1966). A stakeholder's choice of system within each context naturally affects the reality of any game product where interaction is intended.

Systems may house a complexity of components which come together to form a holistic entity, as is often the case in games (Susi et al, 2007; Salen & Zimmerman, 2004). From a social construction perspective, this is the interaction of the agent to form norms and conduct the social process via which engagement and participation can happen at determined levels (Burr, 2003; Gergen, 1999). In a specific game context, systems offer the opportunity for interaction among spaces and with objects that allow for exploration, manipulation and habitation of in-game realities (Salen & Zimmerman, 2004).

These realities are human constructs and artificial intelligence has yet to develop anything that is as scalable as the results that human interaction can produce (Buchinger & Silva Hounsell, 2018). For serious games the components needed to produce the resultant product, within which further social realities are possible, can be designed for resulting in Marsh's (2011) quantifiable levels of success.

But are we approaching a point from which artificial intelligence becomes so pervasive within this field that these realities are no longer human but rather machine productions? Perhaps new terminology is needed to understand and differentiate between the realities and the production of our experiences as either human-constructed or machine-constructed. But a deeper debate might then be needed as to what constitutes human-constructed reality and how, or even should, we be differentiating this from artificially-constructed realities?

The importance of this for the fundamental ideological foundations being proposed here is that they are not just fabricated and fixed in time, but are in a state of flux (Burr, 2003; Gergen, 1999; Berger & Luckmann, 1966). These constructs can be re-negotiated and re-formed to extend the context of the reality to potentially new and future realities (Burr, 2003; Gergen, 1999).

This echoes Mead (1932) in that re-interpretation is a necessary component as new and emergent data add to the existing body of knowledge. We can use mental concepts such as a spiral, from which knowledge is ever increasing outward from the central point, with an outer tail ever lengthening in diameter, as a semantic form of conceptualising this fundamental point that Mead (ibid), and later constructionists, were making.

The digital interactive games industry is a good example of this complexity. Interaction with games has moved on significantly from forms like Pong (Atari, 1972) with basic two-dimensional interaction to Eagle Flight (Ubisoft, 2016) where total virtual reality emersion forms (and informs) the very mechanics and dynamics of the game itself.

These points are not just rhetorically pedantic references to demonstrate this thesis's worthiness of the classification the researcher seeks, they are an attempt to stress the point that the dynamics of a game, the interactions and the use of the system between player and game, is a constructed one that needs attention for the qualification of the success of the game to be realised. Pong (Atari, 1972) and Eagle Flight (Ubisoft, 2016) have very different experiences to offer the player, but these experiences are not intended to denote any superiority or ranking. No classification is being sought here. Play is constructed in both and those that have played Pong (Atari, 1972) when it first became available on the market may well now experience the same thrills of competing, of exhilaration and of fun in Eagle Flight (Ubisoft, 2016).

By extension, viewing crowdfunding as an equally complex and diverse system that, as with games, is developed to deliver, support and enhance various forms of human activity, this thesis can confidently assume that the social construction lens is an appropriate one. Combining this with an inductive paradigm creates a blend of natural social bedfellows from where this research begins, supported still further by mixed methods. Methods used to address these issues included netnography, desk research (reviewing of literature) and observations of play with summary field notes for a deeper understanding of the game's appeal in the real-world and to capture some of the subjective interpretations of the researcher. All of these areas are given deeper consideration below.

4.2 Ethnography

This research has developed three significant cultural artefacts; the crowdconsent framework, a workbook and a serious game that houses specific learning objectives (Anderson et al, 2001) for those seeking to crowdfund their vision. The research seeks to understand if fluency of crowdfunding can be gained via the development of a serious game which simulates the crowdfunding experience.

The focus, through a social construction lens, is both on the design / learning objective nexus and on the shared system of meanings that are produced when players engage with a game. Evidence for the need for this interaction is found in the discussions held among the community on an open platform where these discourses were between funders and applicants seeking to fund their vision. Any development that seeks to apply game-like procedures in order to meet set learning objectives must therefore be interactive if it is to stay true to the real-world experience's players will face once they go live with a crowdfunding campaign.

Engagement at this level creates shared meanings and interpretations (Gill & Johnson, 2010), utilised by the funders to confirm or refute ideas or beliefs about the vision being crowdfunded. For the serious game seeking to simulate this experience, players' experiences must reflect this interactive component. For the observer of the game, this may mean a deeper set of descriptors emerging from the players own perspective as the process of play unfolds (Robson, 1993). This is supported by the interactions witnessed in the real world; players will provide opinions, ask questions or make comments and peers may support or refute these.

In terms of methods for studying these interactions, there are several accepted forms of ethnographic research which have their own reductionist views on the methodology and the methods to employ depending on the research being undertaken (Yin, 2009). This study is not an anthropological analysis of the exotic in far flung geographical areas (Creswell, 2014), but rather a humbler analysis of the benefits of serious games in a specific context (ibid).

Ethnography's classical emphasis as a research method is a longitudinal study of the group's communicative and interpretative processes (Carbaugh, 1989). In this instance the researcher has been observing and keeping notes on campaigns for almost ten years as part of a bigger commercial project where he was (and continues to be) an author and consultant. This precursor life of the researcher has greatly influenced the work presented here. It has helped to guide the production of the serious game and reflections on the problems campaign management face in both teams and as individuals. This subjective observation has led to the creation of various help videos and other artefacts to support the applicant on their crowdfunding journey.

Gill & Johnson (2009) raise the issue of commitment for the ethnographic researcher in terms of the methodological choices they have to make. They list four areas of concern and these are paraphrased below in Table 19:

Table 19: Methical Concerns (Gill & Johnson, 2009: 155-159).

Concern	Detail
1. Verstehen	Gaining access to the sense making attributes of the observed agent. They are basing their actions on the social situation in which they find themselves ergo, a researcher must access this interpretation in order to understand the influential impacts.
2. Ethnocentrism	Inadvertently projecting the researchers own rational veneer onto the observed group and deciphering the observed from this standpoint.
2i. Going native	Loss of researcher's perspective as they identify with and become a member of the observed group.
3. Induction	Allowing the theory to emerge and avoiding the temptation of prejudgement by reliance or referral to theories prior to fieldwork.
4. Variable behaviour	Agents vary their behaviour according to social contexts. The optimal social context for the agent therefore is natural and familiar.

There is also a fifth concern highlighted by Carbaugh (1989), that of the critical voice. If ethnography is concerned with the communicative aspects of the cultural lives the observed are living in socio-cultural contexts, then there is a need to consider the practice (what is being observed) and the principles (taxonomy of the observed) by the researcher (ibid). An ontological base is the describing and theorising that happens by the researcher founded on their own ethical stance.

Carbaugh (1989: 267) recognises three types of critical voice:

- The natural

- The academic

- The cultural.

These in turn can be measured against three dimensions of critical voice:

- The object of the criticism

- The posture from which this criticism is being made

- The mode to carry this criticism.

These combinations produce 'moments' (ibid) when the critical voice emerges. There is also the possibility for a lack of critical voice and Carbaugh (ibid) is explicit about the possibility for there being no critical voice in the study (Carbaugh, 1989: 264). Carbaugh (ibid) defines critical voice as the "evaluation from an ethical juncture" (ibid: 264). This definition leaves open the possibility for the socio-cultural background of the researcher to play a part in the ethnographic study. Applying this to a contemporary setting where data is produced in a digital environment, and possibly open to the public in the form of online forums and the like brings new dimensions to the application of the critical voice.

Grounded deeply as it is on the preconceived notions of the early developers of ethnography as a method Yin (2009) and Hine (2000) recognise that the subsequent internal criticism of ethnography as a method has tended to focus on issues related to transparency and the ability of the ethnographer to leave to one side their own ethical stance and become a more objective researcher in the process. The ethnographer in describing their accounts to the world is positioning themselves as authoritative and worthy of being read (Hine, 2000). In effect, ethnography was a story-telling method and Hine states (ibid: 44) "the stories could be more or less convincing but were not necessarily to be evaluated on a basis of their truth to a pre-existing 'real' culture." The selection of the stories to be told was based on both the adopted ethical stance and the critical voice the researcher had assumed.

> More than ten years in the field and having travelled so very, very far with these people, I have convinced them to allow me access and settled into a comfortable relationship with the 'locals'. Ten years in, perhaps now is the time to start telling my stories.

The dialogue box above is one such example. It delivers a short description that delivers both a temporal and spatial stance in less than 50 words which begin to tease the reader with the promise of insightful stories to come. It tells the reader nothing of the place or the time but these are present in the mind of the reader. More important however is the intrigue of possibility this allows in the mind.

Ten years where? What was experienced? Who are the locals? What has the author learnt in this period? How can this add to the academy? This short (nonsensical?) dialogue box presents the authority Hine (2000) refers to while the questions that flow in the mind of the reader are premised not on the text itself but on the meta-text, where the missing lexicon is filled in by the reader from their own ethical stance (ibid). This demonstration is an effective display of the critical voice from Carbaugh (1989) and the authoritative textual construction from Hine (2000).

So far this description of the ethnographic method has concentrated on traditional ethnography, where the researcher has a physical presence in and among those being observed. But the original scrape had led to the realisation that the interactions of the crowd and the applicant in crowdfunding were bounded not by a physical parameter. They are open and networked to some very large communities composed of various motivations for their presence on these digital platforms.

Hine's (2000) stance on this issue is that the traditional approaches of the ethnographic researcher are limited to such a degree that new approaches are needed when dealing with digital platforms. Hine's (ibid) adjustment to ethnography is to emphasise the multi-sided approach which focuses more on the multiple connections of the observed and the consequences of these for the ethnographer's interpretation.

Ethnography requires interactions as well as observation. The traditional view given above is reliant on travel and exploration of place by the ethnographer, a face to face encounter where the faces of the alien are observed and recorded and then reported with or without critical voice intact (Carbaugh, 1989). As academic research, it naturally follows that the most prominent critical voice is an *academic* one, which is a standard reflection of the associated discourse used within the academic's field (ibid).

At a more granular level this discourse is centred on the social sciences where justifications of the findings are in terms of triangulation, for example, are opaquer in nature, muddied by the social nature of the interactions being observed (Outhwaite, 1987). This raises the issue of authenticity in the interpretation of the interaction and in doing so also raises the concept of authenticity for the observed.

Hine (2000) moves the focus of the impact of this issue from one centred on the single and stable identity of the observed to an entity more akin to performers who accept and project character as perceptions of various roles are adhered to, dependent on the social context, which they are, in turn, performing (ibid). This concept presents an interesting dilemma for the critical voice as the possibility for two divergent discourses, that which is found and observed in the 'field' and that which is subsequently reported in, and to, the *academy* (Hine, 2000). Authenticity is questionable as the perceptions of the observed and their acceptance and understanding of what is authentic also needs adequate assessment by the ethnographer (ibid).

Confirming details provided by the observed in the field can be a relatively straight-forward turn by the researcher (McKee & Porter, 2009; Rappaport, 2008). This becomes more problematic for the researcher in cyberspace where the norm has been to view these spaces as socially interactive by nature. If, as Hine suggests, we view this space from another perspective, the space becomes less interactive as the witnessed correspondence is not a social interactive act but a textual act (Hine, 2000). This now presents an even bigger dilemma for the researcher in that authenticating the cyberspace texts is near impossible as no trace exists beyond the text, the identity of the author may never be revealed. This has immediate consequences for any generalisations that are sought.

4.3 Netnography

These points are salient to the original observations which yielded the initial ideas for the creation of a serious game. They are also relevant to the crowdfunding experience for both applicant and player. This observation and the collection of interactions among the online communities of applicants and crowdfunders were unobtrusively collected from public forums where the communities interacted.

As we learned above, traditional ethnographic methods usually desire a longitudinal presence of the researcher and the retelling of observations by the researcher, which results in a method more open to interpretation and bias from both the observed and the observer (Hine, 2000). But this research has no interaction beyond the unobtrusive digital observational post from which the community were surveyed. At this juncture the research methods evolve from ethnography to one of netnography.

Standards for this new approach are emerging. At the vanguard has been Robert Kozinets. His 2002 paper sets out the initial criteria for suitability of the community to be investigated. These are that the community should be:

1. Relevant to the research question
2. Regular and frequent in their postings
3. Sufficient in numbers of community membership
4. Posting detailed and rich data
5. Providing appropriate research question led interactions (Kozinets, 2002: 63).

Although this approach will help some researchers to identify the most appropriate communities for their particular research, it should also be noted that this paper sought to address this issue from a consumer marketing perspective. It was also positioned implicitly for a deductive methodology and so points one and five above are questionable for research utilising an inductive paradigm in its methodology.

For this research the issue was not that the researcher was choosing the group based on a well-defined hypothesis, indeed there was none. The initial observation was born out of curiosity for the topic.

Utilising grounded theory approaches (Hindle, 2004; Glaser & Strauss, 1967) the communities were identified on the basis of their providing some of the richest insights into the kinds of enquiry that were being made to the applicants on these platforms. Points two, three and four were therefore highly relevant to the initial more open observations.

Initial suitability of the community to be investigated can therefore be restated for the inductive researcher as, communities of interest should be:

1. Able to arouse curiosity about the general topic
2. Regular and frequent in their postings
3. Sufficient in numbers of community membership
4. Posting detailed and rich interactions
5. Lead to thicker formulations of research interests.

Kozinets (2002) also listed the conventions for approaching such a method. These were:

- Entrée
- Data collection and analysis
- Providing trustworthy interpretation
- Research ethics
- Member checks.

Entrée is essentially locating the most appropriate group for the researcher and in turn learning much about these communities (Sandlin, 2007; Langer & Beckman, 2005; Kozinets, 2002). By learning as much as possible about these communities the researcher is in a better position to identify the regularity of the posts, they are likely to encounter and the type of community member they are reading. Kozinets (2002: 64) determined four types of community member, or poster, as detailed below in Table 20:

Table 20: Kozinets (2002) Four Poster Categories.

Label	Definition
Tourist	Lacking strong social ties and also lack any serious interest in the topic. According to Kozinets they also frequently posted casual questions.
Mingler	Have stronger social ties with the community but are disinterested in higher levels of consumption. This reminds us that Kozinets was writing for the market researcher concerned with consumer patterns.
Devotee	Strong interest in the consumption of the product(s) that the community are interested in but also have weak community ties.
Insider	These are the strongest in terms of both the ties and bonds they have with the community and the consumption of the product(s) of interest to that community. They are the most frequently referred to and longest-standing community members.

Data collection and analysis is split into two camps; the collected transcripts of the interactions between community members, and, secondly the field notes that the researcher produces during the observation and collection stage. For this research field notes were not a component that was deemed necessary at the observational stage. This demonstrates the need for flexibility in the netnography method when applying it to areas beyond either the deductive paradigm or the field of market research. The observations and capture element of this research was a more static approach in that the interactions were frozen in time once captured and then manipulated to produce a data set that served a narrower focus.

Kozinets (2002) paper was for use as a product and process for understanding a community and the preferences that may be held within that community. In some circumstances this may have led to the possibility of manipulation to better serve the consumer markets that were sponsoring that particular research. In contrast this research was seeking to learn from the community and seek to understand the interrogative nature of the community's interactions. In no way was this observation seeking to influence decision making processes or consumer preferences.

However, as with Kozinets' (ibid) examples, the dangers of the researcher being over-consumed by a large volume of data was a very real possibility. The recommendations are clear in Kozinets' (ibid) paper; use coding to clarify and distinguish categories on thematic lines in the text.

The dangers of this approach are that the contextual richness of the text may hinder the true meaning of the interaction due to the "metaphoric and symbolic" (ibid: 64) interpretations by the researcher. Kozinets (ibid) states this as a possible conflict where there is a possibility for a trade-off between emblematic depth and contextual richness. The concern is that the researcher may interpret the text from their own critical position and in so doing they may miss the intentions or the meanings of the original interaction.

Providing trustworthy interpretation results in the validity found in the sciences being applied to a qualitative method, only the lexical term 'trustworthy' replaces the more scientific term 'validity'. There are some differences too in the use of trustworthiness versus validity. These derive from the social nature of netnography and the interactions that the researcher is most likely seeking to explore. The focus in netnography is on the communication between members and not on the agent per se (Sandlin, 2005; Kozinets, 2002).

This tension produces the biggest variation of ethnography compared with netnography, the former is seeking to observe people while the latter "observes and must recontextualise conversational acts" (Kozinets, 2002: 64). The primary focus of these methods is where the biggest differentiators lie. An ethnographic study may well have a requirement to record and analyse the conversations of the people under examination, but to suggest that this would be the only focus would be to deny the wealth of possibilities ethnography, in its traditional form, may yield. Another emphasis given to the separation of the two methods is that the researcher using netnography is utilising a mediated form of conversational turns. That is, the conversations being observed and captured are on open digital platforms. They are open in the sense that any member of the public may join the community.

Generalising the findings from these platforms and the netnography method is possible using more traditional methods of triangulation. Kozinets (2002) has no issue with the blending of findings from the newer method (netnography) with more traditional forms of validation to arrive at trustworthy findings.

A point Kozinets (ibid) makes in concluding this section of his paper is also worth reiterating here, that is that the netnographer must at all times bear in mind that s/he is observing an online community that may be presenting self as a fantasy rather than as a reflection of the true self (see also Sandlin, 2005). Netnography is essentially about observing a community's act of communication, as opposed to the observation of the whole community in real time behaviour and real-world interactions (ibid).

Likewise, demographic identification and classification is also an issue when using the netnography method. This is due to the nature of netnography where the characteristics of the community member may be falsely provided or may not be identifiable at all. This has obvious impacts for the market researcher who may need to narrow down the exact make-up of the community members and their preferences as expressed in these interactions.

Research ethics in most academic exercises may be expected and with netnography, there are no exceptions in terms of debating the relevance of ethical reviews with online communities (Sandlin, 2005). The two sides are detailed below and take their lead from Haggerty (2004), who was using the Canadian ethics review board as his lens. Essentially the two sides are:

Table 21: Review Debate Camps (Haggerty, 2004: 405).

Camp	Argument
Reviews are necessary	Internet users operate with an assumption of privacy and confidentiality. As such the user's consent is required when a researcher uses this interaction in any form.
Reviews are not necessary	Web postings are analogous to public announcements and comparable to open letters to an editor. As such they are amenable to academic analysis without the necessity for ethical reviews.

Haggerty (2004: 403) reminds the reader that the whole review process dates back to the European holocaust of the 1940s and the trials that followed. In these trials the Nazi atrocities that were inflicted on both Jewish and Gypsy populations were done so without the participants consent. The Nazi arrogance in their assumption that they were rightfully using these subjects for any number for experiments continues to haunt the review procedures of contemporary research globally.

The echoes of this horrendous period in our history and the consequences of these actions have left an indelible mark on the process. This research and particularly these initial observations were covert operations on an open platform of discussion. The debate among the crowd on these platforms was centred on the validity of claims and further interrogation of the positions and business strategies that the applicant(s) had adapted to suit their needs.

These could at times be heated exchanges if, for example, an applicant was considered late in responding to queries. As such it was felt that the declaration of the researcher on these sites might jeopardise interactions between community members and the applicant. The researcher was not part of these interrogations nor did the researcher post any comments or make any financial offers to these projects. The researcher took his position on the observational lookout deck that was the Web platform - and observed.

Neither was consent sought from the platform itself. These are open systems that encourage engagement and as such can be considered amenable to academic analyses. Generally, their terms and conditions state that permission is needed if content is used verbatim and for commercial purposes. Furthermore, no individuals on these platforms were, or could be, identified and no correlation is possible with the observed communications and the individual community members. Nor can the platforms themselves be identified or the companies / applicants seeking funding. Complete anonymity is the result.

Lastly, any attempt to have sought consent would have been an impossible mission worthy of Dr. Holmes, or their academic equivalent. Because the platforms allow community members to use usernames on these sites, further reducing any possibility of identifying individual agents on these platforms, locating them and requesting their consent would have been extremely difficult. Names that were geographically associated, industry associated or fantastical were frequently used. Identifying these individuals would only be possible through the platforms themselves as they alone hold the personal details that would make it possible to link username with real name / identity.

Member checks are seen by Kozinets (2002) as a further step to a robust set of data that can be checked and confirmed by the community members that have been active during the process of observation and their data used to construct meaning. In these instances, Kozinets (2002) argues that the feedback provided to the participants leads to a stronger bond between researcher and participant and that the intended meanings of any recorded interactions can be decoded from the perspective of the participant.

Failing to provide this step leaves the research open to criticism that only one perspective (that of the researcher) is allowed to be defined in the reporting of the interactions. As Carbaugh (1989) suggested above, this leaves open the possibility of a critical voice becoming the dominant voice in the research. These constructed views are from a particular agent and thus may not produce an accurate account of the interaction as was intended by the interlocutors at the time.

Texts may operate in a particular group's interest and may even be presented to implicitly support this particular paradigm. In the coding of the observed data this research undertook to observe the interactions of a particular group as these were the real world lived experiences of the community. In reformatting the questions and presenting them as a less cumbersome text (in terms of flow) some meaning and sentiment may have been lost.

Reporting these to the community would have only been possible with the identification of the individual members of that community. As this was not possible, there was no opportunity for reporting these findings to the originating community members. The only opportunity for feedback was from the interviewees who later trialled a workbook based on these observations. Ethical reviews were sought for this area of the research.

4.4 Practice Introduction

Taking account of the weaknesses and strengths of the ethnographic and netnographic approaches the practical design of the research, as well as the game, was now given attention. This actually proved more succinct given the findings of the literature reviews on both crowdfunding and serious games, which form the bases of the research.

Taking stock; at this early stage the research housed the following:

- Crowdconsent framework
- DPE framework from Winn (2009), plus the;
- Learning Objectives framework from Anderson et al (2001)
- Observations (reformatted and classified)
- Research Questions (one to three)

The next logical step was to address what a serious game dedicated to the simulation of the experiences in the real world of an applicant might look like. Considerations of design became more salient as the research moved toward the realisation of new a cultural outcome. In the event there were two outcomes developed to test the research questions. The first, dedicated to the crowdconsent framework, was designed to test validity. The second saw a board game emerge that made use of the early observations and reformatting of the observed questions to produce a game that would enhance understanding of the types of engagement the applicant might expect in the equity crowdfunding model.

Outcome one was a workbook titled; Crowdfunding Readiness Assessment (CRA) which was produced as a paper-based workbook in order to test the basic idea with experts who had a connection with the crowdfunding eco-system (either as an advisor or applicant). This product was published via the Create Space self-publishing platform from Amazon under the publishing name, minivation. This was the name of the consultancy the researcher established in 2009. The design of this workbook was premised on the professional development of the researcher as an ELT teacher. The design itself went through several iterations and the final result was considered a better fit with the purpose of the workbook (Wright et al, 2000; Scrivener, 1994; Harmer, 1991), in that it offered the reader guidance on the nature of the question being posed and allowed the reader space on the page to reflect a little before answering (using a Likert scale).

Having justified the platform, editing and design considerations were given attention dictated to some degree by the choices Amazon allowed in terms of book size, cover design and other choices that needed consideration. But the basic idea had emerged early in that the testing of the basic concept might be better conducted using more traditional research methods of asking the respondent to 1) read the workbook and take notes and 2) be interviewed by the researcher at a time and place convenient to them.

The content of this workbook emerged from the literature review on crowdfunding and was a direct response to chapter two above. This artefact will be given more coverage below in section 4.4.4 where a deeper look at the product is provided. The outcome was a workbook which developed questions based on the crowdconsent framework. The design process was in two stages; questions were developed for each category which were then added to the workbook. Page design was then prioritised as the outcome became more functional. A Likert scale was used as the workbook was measuring attitudes and beliefs about the applicant's campaign (Losby & Wetmore, 2012). The applicant chose an option presented on the page that best aligned with their feelings and attitudes toward that particular question.

In terms of the theoretical lens adopted, a social construction lens allows for an optimum account of this multi-layered reality, all of which are valid and ultimately reliant on the researcher's own subjectivity while still allowing for utility of an empirically focused inductive paradigm with the inclusion for the researcher's critical voice (Carbaugh, 1989). Finding methods to gain insights into this connected yet ephemeral reality and implicit understanding was necessary for the validity of this study. Hence the multiple methods used for each product, CRA and CCBG, which were an optimal 'fit' with these aims. For the CRA interviews (and to some extent the exit interviews) dangers exist in the interpretation of meaning and classification of words or phrases used by interviewees and in the questions originally seen on crowdfunding platforms. Bias of this nature was reduced through measures where an iterative exploration of the interviews during the writing process included a cross-analysis with the findings of the literature and the playtests (where appropriate). This allowed these issues to be given greater focus and greater consideration when the session summary sheets were also introduced to the methodological mix. This further allows for greater analysis of the researcher's own subjective reality. This method yielded a deeper understanding of responses, especially given the social context of the interactions and the topics in the questionnaire where sense making and comprehension of the questions may be unintended by the author (Fontana & Frey, 2005).

A further advantage of this mixed methods approach was the flexibility in the semi-structured interviews and the juxtaposition of the rigidity of the dot voting poll and questionnaire. In the semi-structured interviews respondents were allowed to drift (somewhat) and breach relevant areas that may not have been highlighted with structured questions which rarely allow for deviation from the set line of enquiry. With a semi-structured interview these areas may be probed for deeper understanding at any point in the process. Thought of as "a conversation with a purpose" (Robson, 1993: 228), this data capture allowed for greater reflexivity as the process took cues from the wording, intonation, facial expressions and body language of respondents.

This wealth of stimuli aided the flow of the interview and helped guide interaction. The primary justification for the use of semi-structured interviews is that, for the social scientist with a strong qualitative element to their study to complete, interviewing is not an impartial apparatus "but rather active interactions between two (or more) people leading to negotiated, contextually based results" (Fontana & Frey, 2005: 698). Semi-structured interviews were chosen as they allow for this flexibility and a degree of negotiation in the interpretation of reimagined events, or even predicted outcomes, to be reformulated in the interviewees' own words. Results are that the 'how's' (the constructive work undertaken to produce the campaign) and the 'what's' (the end vision being created) are encompassed in a single method (Fontana & Frey, 2005). Participation in the negotiated interview can provide a unique insight into the actions of others while also providing flexibility for additional information to be included by the respondent (Robson, 1993).

This type of interview is expansive via the flexibility noted above. Through reflexive accounting maintained by the researcher a better understanding of the social context of the interview process was recorded. In effect it allowed for heightened understanding of the "differences in ideologies, culture and politics between the interlocutors of the interview" (Fontana & Frey, 2005: 711). But this method is not without weaknesses. Not least in the areas of bias and recall of outcomes and events. These problems can also be exacerbated by the interviewer. Planning an interview is an obvious starting point, taking account of the enquiry of the research, the setting and the social position of the interviewer.

Avoiding bias in a structured interview is a key concern, but with the semi-structured interview the nature of the process is one in which the interlocutors may take the conversation in unplanned directions which may / may not yield more value for the research. Seeing the interview "as an active emergent process" (Fontana & Frey, 2005; 706) these biases become an element of the understanding that develops from the interaction. This allows an interview to take the form of a mutually created story, a story that is first told through interaction between interlocutors and then re-written as a dialogic understanding of the 'how' and 'what' by the interviewer. Through their reflexive thoughts it is the interviewer who eventually tells the story to the reader. At no point in this scenario is subjective thought eliminated, on the contrary, it holds a central position in the method and is a part of the activity that creates the narrative of the study including any explicit or implicit bias on the part of the interviewer. As Yin (2009) recognises researchers should not set out on a crusade to furnish their preconceived positions, instead they should attempt to recognise their biases and attempt to reach a more open understanding of the respondent's position as it was meant.

But the preconceived position may be proved or disproved through engagement. This engagement necessarily involves the interaction of both researcher and subject in the interview, an interaction laden with the subjective past experiences of both researcher and subject (Mead, 1932). Yin's (2009) position is that the method chosen must not serve the researcher to reinforce a perception that s/he has already determined prior to the events (interview or playtest). Rather that such a position must be sidestepped and a more open approach adopted (Robson, 1993; Patton, 1990).

Willis, (2007) offers a means of reducing the bias through the reflexive process, a vital tool in the qualitative tool-kit. As the researcher gains in their confidence and ability to conduct interviews, so the skill of the researcher to expose the experiences they seek reference to, will also be enhanced (ibid). This is strongly correlated with the session summary sheets of the playtests and so not confined to the interview process alone but applicable to situations where contact with the empirical is desired. Reflexivity is a longer process than the interview or playtest and as such is a discipline that demands rigour (Robson, 1993). In this process (post-event) the purpose of an interview can be stated in that "the perception of others is meaningful, knowable, and able to be made explicit" (Patton, 1990: 278).

However, there is also a balance needed as priorities shift in the actual process. This study seeks to make sense of the practical applications of the crowdconsent framework and the subsequent serious game via perceptions of experiences with the framework. Combined, these then influenced the development of the serious game. In itself, this might produce biases that may need to be held in check for the validity of the research (Stake, 2005); hence the early decision to use a mixed method approach which included two types of questionnaire in the playtest phase.

Chosen individuals for semi-structured interview in this study were either considering or anticipating the enactment of a crowdfunding campaign, in a variety of crowdfunding models (reward and equity). Silver at al (2013: 58) proposed a "purposive sample" be used to identify the research participants in relation to the research question. The main reasoning behind this is that the right subjects are chosen for the right study. In other words, the fit between the two is optimised. To a degree, this element is made simpler for this study in that the interview participants, in the CRA analysis, will have been exposed to the crowdconsent framework and it is through this exposure that validation is sought.

Stake (2005) also advocated this position as it provides the researcher with a diverse number of participants to choose from. This leads to the selection of the 'typical' and the possible replicability in other research. It thus becomes a more useful tool for the selection and generalisability of the study with some quite diverse product categories, as is the case in this study where; 1) two products were created and tested, and 2) the crowdconsent framework is applied to multiple models of crowdfunding.

This is a new area for the crowdfunding eco-system, with a growing critical body of work to help guide the exploration of the framework (and game as outcome). Wider inferences of campaign results are not possible at this stage. This could be an area for future research with the caveat that this study's focus is on the creation of tools that will aid the development of early planning for future campaigns. These tools will be generalisable to the wider crowdfunding community in that what is sought (crowdconsent) by the applicant is a homogeneous concept found in all models.

Purposive sampling is present via the choices made as to who should be included in the study. Those chosen are seeking utility in crowdfunding and possibly planning to exercise their ability to create and implement a crowdfunding campaign, on either a platform designed for this purpose or in the creation of their own, thus a small number of chosen interviewees with whom a relationship is developed through the study was sought (Tillmann-Healy, 2003).

Seeking a 'typical' (Stake, 2005) crowdfunding case is assumed as the cases are seeking crowdconsent even though these campaigns are individual in terms of their own narratives and contexts that bear on the results of their use of the crowdconsent framework. Each section of the framework is weighted dependent on the priorities and the needs of the campaign, as perceived by the respondent agent. However, resultant products (in this case CRA and CCBG) are applicable and are generalisable across the models of crowdfunding as the motivation for crowdfunding is homogeneous (all are seeking crowdconsent in some form).

This research is not seeking the 'outliers' (Barbour, 2001). The ability to claim an exemplar case in crowdfunding is difficult as the models are emergent and new ideas and processes are being added on a regular basis. Volumes, in general terms of campaign numbers, are growing (cf. Centre for Alternative Finance, NESTA and Massolutions reports) and so statistical generalisations are being sought from several angles by academics and industry. What has been lacking in the literature is qualitative research that seeks to establish whether new and alternative methods of educating potential applicants could be feasible.

In response to Barbour (2001), Silverman (2007) and Stake (2005), who all claim a need for purposive sampling, the issue is one where the outliers are quickly being replaced with others that move their unique qualities of these original outliers to a central position of accepted crowdfunding standards, producing a higher level of churn in the crowdfunding models and their applications. Central issues to a campaign have, as far as the researcher can determine, remained stable during the research and writing phases of this thesis.

As identified in the literature review, these components are applicable across the existing crowdfunding models where crowdconsent, a homogeneous concept, is being sought by the applicants. Future researchers may identify crowdconsent as less salient to the needs of their subjects and as such may further develop frameworks of their own, more aligned with the needs of future users.

Having produced and validated the workbook, the next stage of the research was to move toward a serious game that used the findings in the CRA as scaffolding for the mechanics and dynamics of the game. A broad conceptual outline was already emerging from the literature review on serious games. Design factors needed to be given deeper consideration and having discovered the frameworks dedicated to both serious game design (Winn, 2009) and setting learning objectives (Anderson et al, 2001), there emerged a sense, in the broadest terms, of the games intention and how that might translate to a serious game.

To illustrate the point, the argument set out by Zyda (2005) in 3.3 and 3.6.2 above is that the development of story should be the first thing in the developmental process, but this tended to negate the pedagogy both implicit and explicit in the game's development. It was also useful to recall that not all serious games have learning as an objective or outcome and that the genre and range of serious games is very broad.

But this may have missed the opportunity to centre on pedagogical requirements when they are needed in the serious game. Shreve (2005) suggests that story be stealth like in its inclusion in the serious game for educational purposes and so widens the debate over the inclusion of story in any genre of serious game yet further. This one aspect of the development of a serious game serves to demonstrate the breadth of considerations that need to be accounted for in the process of building a game which is fit for purpose. As Marsh (2011: 63) reminds us: "The quality or success of serious games is characterized by the degree to which purpose has been fulfilled."

The purpose of the research is to address the question of how a serious game can help simulate the crowdfunding experience. Addressing this question meant firstly developing a crowdfunding framework, testing that framework via an outcome of some description and then tackling design aspects of a serious game. The linear approach adopted is outlined below in Table 22.

Table 22: Steps to Realising Both Outcomes.

1 Crowdconsent Framework	2 Game Building
1.1 Observation 1.2 Reformulation 1.3 Literature review 1.4 Crowdconsent framework 1.5 Workbook prototype 1.6 Validation	2.1 Literature Review 2.2 Game prototype 2.3 Validation

The remaining sections of this chapter are therefore structured to provide the reader with a better grasp of the decisions taken in terms of the methodological approaches adopted in this research. In doing so the next two sections will clarify the early data capture and then coding. Following this, attention will turn to the framework itself and next to the Crowdfunding Readiness Assessment (CRA) workbook and then the serious game which emerges from this work before summarising the whole chapter.

4.4.1 Early Data Capture

Over a six-month period from January to June 2014 secondary research was conducted in the form of a weekly observation of the comments made by the crowd (funders) to applicants seeking funding on six UK crowdinvesting (equity) and four crowdlending (debt) platforms. The observations included the responses from the applicant to the crowd and any secondary questions that had been raised by the crowd in response to the primary interrogation originating from their peers on the platform. In order to achieve a coherent taxonomy of these interactions text analysis methods were used. This socially constructed text was first coded using NVivo software which was subsequently replaced with pencil and paper. NVivo produced graphics that were innovative and aesthetically pleasing, however, it was also felt that the analytical capability of NVivo produced associations that were irrelevant to the text being analysed. Pencil and paper on the other hand were able to produce an instant response and allowed the researcher less restrictions in their approach with the text. Barriers were removed and headings and associations that were sought for the taxonomy appeared to emerge with far less restriction than had been the case with the NVivo software.

> Periodical observations are significant as campaigns were live for more than a week. A weekly observation was therefore sufficient to capture fluctuations.

There were almost 1,300 texts captured in the original scrape. These were coded and reformatted where necessary for sense making, replacement of acronyms with full terms, repetition and removal of comments that were deemed unnecessary. An example, of this latter point; being a comment like this: "Awesome project man", where no value was added in terms of the education or enhancement of understanding of the project in question. This process eliminated any identifying factors of either the platform they had been sourced from or identifying characteristics of the crowd members in these interactions. This process reduced the total to 1,104 questions, 604 in crowdinvesting and 500 in crowdlending.

> It should be noted that the researcher did not intervene by asking questions or making comments in these campaigns. To do so may have jeopardised the anonymity of the crowd membership as they may have been traceable to the researcher through other social media channels (Langer & Beckman, 2005).

Coding in this way produced the category headline that would later make-up the headings of the crowdconsent framework. The classification of the questions in both crowdfunding models fell into four groups; financial, other related, project and team (listed alphabetically). This provided an early insight into these models that, as far as the researcher could establish, had previously gone unreported. The aims at this stage were to uncover any relational patterns that have emerged and to test the inference that a taxonomy of these interactions may have been possible. Checks were introduced on the coding as colleagues at a UK university (two programme leaders and one course leader) were asked to look at the designated classifications produced in the first round. The objective was to challenge some of the assumptions made during this first round of coding.

Significantly, after much discussion with colleagues who were experienced academics of qualitative methodologies, this early comprehension was to provide the base from which a set of research questions emerged connecting pedagogy housed in new forms of cultural artefacts, like serious games. Serious games were understood to be an effective tool for training and educational purposes (Ranchhod et al, 2014; Shaffer, 2006). A review then followed of serious games used for educational purposes. This review was deemed an appropriate fit as the base learning objectives from any serious game developed in response to this initial observation would, it was thought at that time, be focused on expected types and formats of question that may arise as a result of this engagement.

This review was an attempt to better understand these games' mechanics, dynamics and objectives and their potential application to a serious game developed to aid those seeking to crowdfund their vision. Understanding these game systems, capable of delivering predetermined learning objectives, was a sharp learning curve for a new researcher in this area. Furthermore, an understanding emerged of the potential for the development of a game for delivering deeper understanding of a business process (Ranchhod et al, 2014). This early insight provided the foundations for the establishment of learning objectives within the context of the design of a serious game (Winn, 2009) aimed at enhancing the fluency of an applicant seeking to utilise crowdfunding (the business process) for their vision.

Serious games have the potential to take many forms and, in this thesis, will be focused on those seeking to utilise crowdfunding. The final outcome is yet to be determined as a digital or non-digital cultural product, for the testing of the concept post-ante, this research has focused on developing a board game. As far as the researcher can establish, there has been only one attempt to simulate crowdfunding with a serious game intent on enhancing the fluency of those seeking to crowdfund a vision. This was a Kickstarter campaign for a pack of player cards applicants would use to guide strategy in the design phase of their campaign. This remains anecdotal as no evidence of the campaign could be found. Poignantly this crowdfunding campaign, reported by interviewee Sara, failed to reach its target and thus never reached the intended market.

Never-the-less, crowdfunding is a subject with various components that can be taught as a transferable set of skills. A serious game can therefore be considered a valid option for an optimal tool for educating those seeking to fund their vision through crowdfunding.

Figure 7: Sequences Leading to Taxonomy.

However, as stated above, a caveat is needed to specify that the actual outcome could equally be a digital or physical one. Furthermore, the study's focus is not on the dynamics or mechanics of the dialogue between the applicant and the crowd, between peers on these crowdfunding platforms or indeed on the regulatory dynamics of the controls for these interactions as established by the platforms. Rather the focus is on the design elements and the ability of the game to establish learning objectives and how these can fit with the design of a serious game dedicated to these purposes.

Based on the literature review the research questions emerge as a legitimate gap for investigation. The design aspects of the end outcome, however, are less clear and not obviously determined from the prior literature. Through inductive methodologies supported by mixed methods to analyse first the crowdconsent framework, and then the application of serious games to this framework, this research has created a robust understanding of the requirements of the users with resultant outcomes better aligned with perceptions of the user's needs.

The ontological grounding of the research is based on a subjective foundation formed via a social construction lens. Through this lens the relationship of a player with other players is a process in flux and not fixed (Dancy & Sosa, 1992). The position adopted for this research is that relationships are formed in the mind and any relational form not in the mind is not of consequence, a research lens more akin to subjective idealism (Blattner, 2004).

The implications of this for the paradigmatic approach in this research are that external environments, not held in the mind, have no importance (Morgan & Smircich, 1980). Put crudely the emphasis in the research questions is to find the constructed meaning of crowdfunding from the perspective of those engaged with the ecosystem. This informs the ontological position as one where the subjective minds of the agents being studied house the lived experience.

The language that helps construct this reality is bound up with the existence of the idea of a self and thus the mind has all the necessary components for the construction of the relationships these agents form and their perceptions of the crowdfunding phenomenon. Reality is, in this context, a multiple and complex creation, a product of the agent's mind relative to the social parameters they have and are encountering (Burr, 2003; Gergen, 1999). For the applicant / player this may create a tension as the interpretation of a lexical meaning is challenged by wider commonly held beliefs about those lexical terms. The most likely outcome of this is the adoption by that player of the wider belief in the lexical unit representation and meaning (Blattner, 2004; Bourdieu, 1984). This is most salient for the ethnographic method of analysis; at this intersection the social psychology of systems of communication and interpretation becomes the focus and may produce bias in interpretations (Creswell, 2014).

In this respect, the design process was purposefully more constrained in terms of the skills and abilities to require the production of a serious board game. The skill sets required to build a non-digital game were already acquired and meant that within the time constraints faced by the researcher, a minimal viable outcome would, at the least, be available for initial testing (Ries, 2011). Working as a designer, Gargarian (1996) observes, the reality is often focused on redesigning as much as designing. It is an iterative process of re-selecting relevant sources of information and applying this information in a manner that creates a compromised solution. One capable of meeting required needs and standards.

Gargarian (1996) goes much further with this line of thinking and introduces the concepts of *using* a perspective in the design process versus *constructing* them. This is highly relevant to this research where the skills acquired by the researcher are applied and used to construct an artefact that is constrained in terms of the complexity of that artefact.

To reiterate, it became obvious that the skills this researcher was using were those that were acquired in his past lived experiences as an EFL teacher. As a researcher, he is constantly constructing new knowledge and skills, but the foundations infiltrate and influence these new constructs (Mead, 1932).

Gargarian (1996) notes that these constructs are then organised and managed in order to aid the design process. As a designer s/he is unconscious of this later application, yet it is present in the iterative process s/he finds the work passing through. These phases produce the artefact and the artefact produces the feedback and the feedback produces emergent versions. The artefact is evolving and the complexity s/he was seeking to avoid is present because the artefact is emerging.

As we saw in chapter three, the cyclical nature of the process is one that designers of serious games cannot escape. Gargarian (1996: 128) notes: "What seems to distinguish the best designers from the rest of us is their ability to take charge of the skill construction and skill management processes." Indeed, this researcher still appears to have much ground to cover in terms of both.

Figure 8: Testing Cycle (Gargarian, 1996).

- The artefact is (re)introduced and playtesting commences...

Introduction

Playtest

- ...playtesting produces emergent knowledge...

Playtest

Refinement

- ...further playtesting with new adjustements..

- ...iterative design adjustements are made...
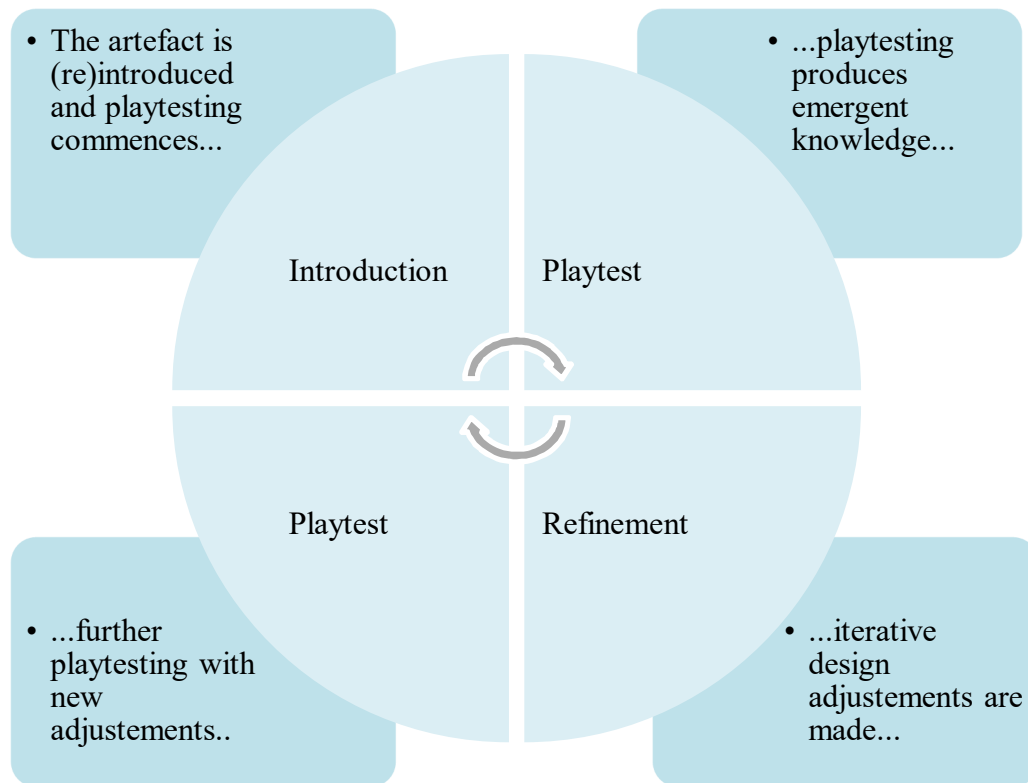
Gargarian (1996) also notes that the application of this thinking is very broad. In fact, it could be argued that anywhere a design solution is sought then acquisition and application of these skills is necessary. By way of an example, Gargarian (ibid) applies this thinking to legal cases where the precedents are sourced and then in what he terms "Hard legal cases" (ibid: 129) new precedents are established via the complexity of these cases. Gargarian (1996) refers to these as open-textured because the past is relevant to the present. For the designer the interpretation of the problem is the beginning of the journey that will lead to an outcome (satisfactory or unsatisfactory).

Interpretation is reliant on determining factors such as which skills are most relevant and which less so, what experiences can the designer call on to aid their understanding and at a deeper level, how can their socio-economic status affect their interpretation? All these granular aspects play their part in the process and all add their own complexity to the issue of design both as a cultural product and for this thesis's methodology.

Gargarian (1996: 127) attempts to answer a central question; "How can a designer know whether he is making progress?" [SIC] To which Gargarian (ibid) raises two concerns that need attention in order to understand if progress is being made:

Controlling process complexity

Promoting user utility

Controlling process complexity is reliant on the skills already acquired. New skills can be added, but as Gargarian (1996) notes, these are not acquired "on the fly" (ibid: 127) and the time constraints of this research mean that the possibility for learning higher order new skills (e.g. video editing or coding computer languages) is somewhat constrained. By relying on the human capital already acquired by the researcher, the research can make progress and deliver robust results without adding to the complexity of the development process. Likewise, as the board game is a fairly recognisable artefact (Selinker, 2011) by the general public, the skills levels required by the players should also be constrained and within their abilities. Failure to meet this standard could result in players experiencing deficient levels of self-efficacy (Bandura, 2010; 1977).

Promoting user utility is to recognise the multi-user, and so multi-interpretive, nature of artefacts (Gargarian, 1996). Serious games, embedded in a board game, are no exception to this point; players will experience differing perspectives of the game and how they then proceed and find utility in these differing perspectives will be an essential component of the observations in the playtesting phases.

Weaknesses in this process were recognised by Ashton (2009) one of which was that subjective defences of criticism of the artefact by players may colour the responses or interpretations by the researcher. This is equally applicable in an interview scenario where criticism of an outcome may be sought. Consciously keeping interjections by the researcher to a minimum may avoid defensive interactions. This may even expose the researcher to further valid criticisms and responses to the product, essential for being able to accurately record the players / users relived experiences. Adjustments and refinement will lead to a better quality of user utility in which the feedback cycle plays an essential role.

4.4.2 Coding in Practice

Seeking thematic categories in a large volume of text is likely to help the researcher clarify their own thinking and provide a solid base for subsequent analysis (Kozinets, 2002). Early data was coded in order to seek relevant classifications and emergent themes within the types of responses that were produced by funders in real world campaigns. This secondary research exercise made use of grounded theory methods as phase one of the research began to be implemented (Hindle, 2004; Glaser & Strauss, 1967).

It should also be stated that phase one was not initially part of a 'research project'. The very term *research project* indicates some well-formed notion of what the researcher is doing and an ascribed objective in the capturing of the secondary data and generation of fresh data at this early stage. In reality the research was yet to be fully formed and there was no established objective other than exploring the possibility for the emergence of research at some later stage.

Figure 9: Coding Sequence.
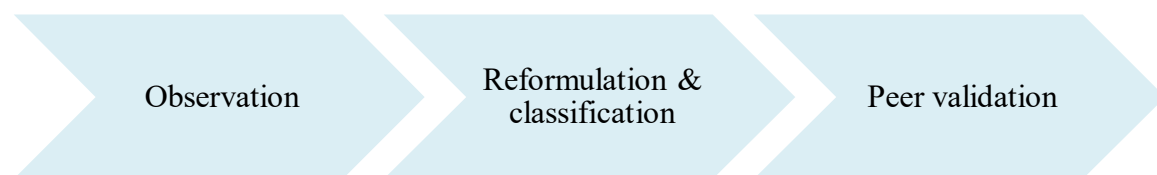
At the time of observation, the exact form of the subsequent research was still being explored and negotiated with various colleagues. The richness of this emergent data suggested that deeper literary reviews were needed to find apriori information relevant to that which was being uncovered. There was a growing realisation that the data was producing a general outline of the types of questions that the crowds were asking on specific models of crowdfunding platforms.

Figure 10: Practice of Coding.
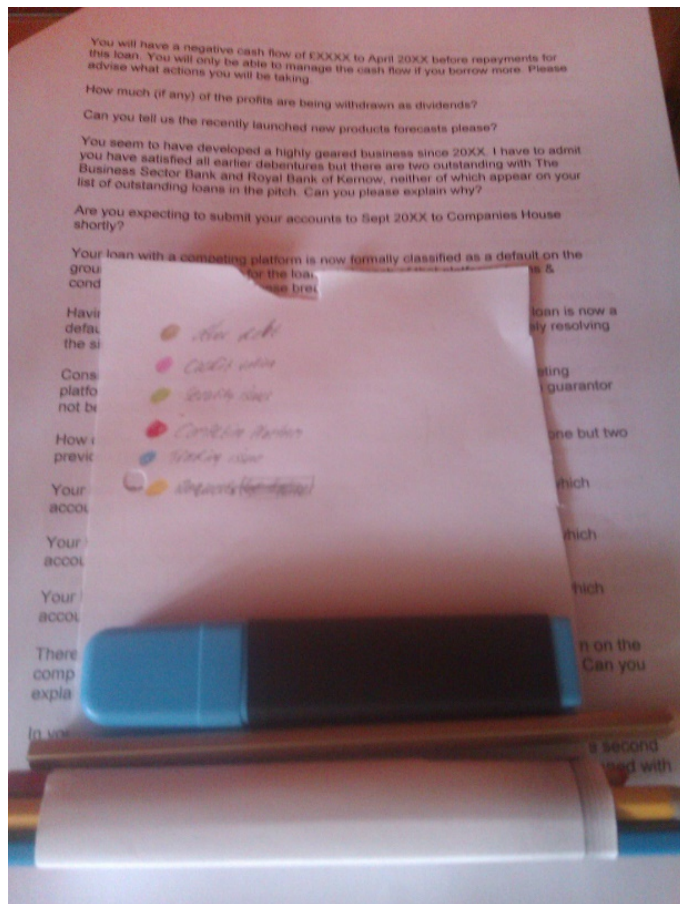
This was a large sample, manually collected data set, which was then reformatted to remove extraneous material such as acronyms, non-value phrases, repetition, sense making and identifying markers. For the most part figures were also removed and replaced with a double X. The rationale for this editing lays in the distraction the figures created and in the possibility of identifying the original author.

Dates and figures were a regular distraction for the researcher when analysing the text. Removing these allowed for a greater flow in the examination of the core topics in the text. Reiteration of the text meant fresh edits were being added to some as and when deemed appropriate, for example removing acronyms and replacing them with their full lexical value. Reformatting was used as a tool to aid the analysis of the text rather than to divert or solicit meaning that would reinforce a preconceived notion. Interrogations were being sought rather than any meta-cognition of the text. However, there were times when grammar was adjusted or a word substituted for less informal terms.

There was a danger in this method in that the text may become tainted or may obscure the intended meaning if these reformats were introduced. However, a second analysis of a random sample of the texts (n = 100) 'copy and pasted' into a separate word document produced an almost identical result in terms of their classification. This was a rigorous double check on the coding which produced only a slight variation. This was deemed necessary as the researcher wanted to ensure that early data captures were sufficiently categorised. This was an important step in that the research was now in a more confident position to move forward and use this data as the underlying focus for the consequent aims and objectives of seeking fluency for the applicant in some form could continue.

Coding in this text analysis phase took the form of three rounds. Round one saw the reformulation of the sentences and a loose topic heading using colour highlights. Round two double checked the coding and the classification heading looking for agreement / disagreement. In round three academic colleagues, with experience of text analysis and qualitative methods more broadly, were asked to mark a sample (n = 100) chosen at random with the headings provided by the researcher. They also had the option of adding any heading they thought more appropriate to the question. This produced a reduction in the number of headings and disagreement on 17 of the sentences of which five were re-categorised and the headline categories were reduced from six to four.

Perhaps a more robust method may have been to blind mark this sample giving a colleague a sample of sentences without headings being provided. This may have produced some additional insights into the classification. The issue that prevented this extra check being implemented was a temporal one. The checks which had been conducted were considered sufficiently robust to move on without warranting additional sets of checks.

4.4.3 Framework Development

As outlined in chapter two, crowdfunding is a legitimate, contemporary and emergent form of raising capital for projects (seed, start-up and growth capital). In chapter three, the use and design of a serious game, which could house crowdfunding simulations, is explored via the Design, Play and Experience framework from Winn (2009). Attention now turns to methods to apply the crowdconsent framework.

With increasing overall crowdfunding campaign volumes (The Centre for Alternative Finance((CAF)), 2018 and Massolutions, 2016) being reported, increases in all models with the exception of the equity model during 2015 and the donation and reward models in 2017 on the UK market (CAF, 2018), campaign management need to be able to develop their fluency of crowdfunding and conceptualise issues they may face with greater clarity. Seen through a social construction lens, the central issue is one where an agent exerts influence over others in an attempt to persuade them, they have an attractive opportunity (Goffman, 1959) and are open to accepting their emotional and financial investment (Coleman, 2015).

The attractiveness of this opportunity is based on the presumption of some value being created that is allied with the needs and desires of the external agents contributing to the project (the crowd) (Fan-Osuala et al, 2018; Cruz, 2016; Coleman, 2015). Contributions from the crowd may also afford a feeling of internalisation with the project by provision of privileged access to rewards in some form (Cruz, 2016).

This research is an empirically based study of pedagogical design with an inductive paradigm that utilises a social construction lens that tends toward relativism over realism (Burr, 2003). It is supported by mixed methods and attempts to establish whether or not a serious game can simulate the lived experience of project managers who want to use crowdfunding.

In seeking to understand the needs of the applicant this design process built first a workbook for testing the framework and then an endogenous serious game. Both are considered cultural artefacts (i.e. communicative outcomes) built from the ground up. An approach which provided much deeper insights supporting the practical designed needs of the user with quality trustworthy products based on reflective iterations (Fletcher, 2012).

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Campaigning in crowdfunding is a communicative process intermediated by the affordances of the technology found on the crowdfunding platforms (Rubinton, 2011). It is an activity whereby the applicant seeking funding attempts to convince peers among the crowd that the vision being put forward is worthy of the crowd's attention (Lins, 2016). As a communicative process crowdfunding facilitates dialogue between the crowd, the crowd and the applicant and the applicant and the crowd (ibid). Attention in the literature has, as far as the researcher can determine, focused on the applicant to the crowd and not on the crowd to the applicant. In short there was a dearth of research on the direction and nature of this interaction.

Figure 11: Categorising the Framework.
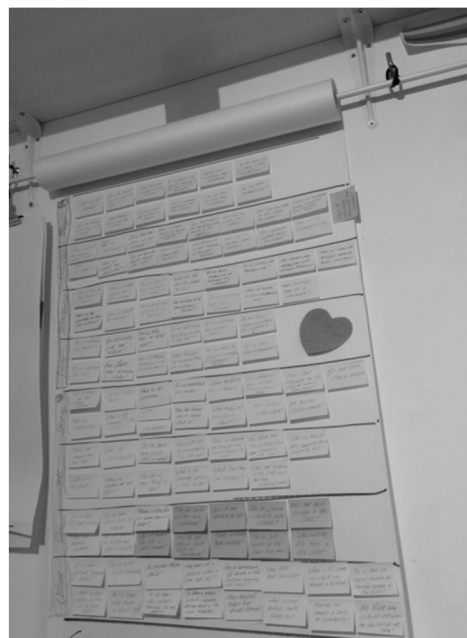
The process of moving the sticky notes gave me a feeling of progress being made. At the time of the exercise I had not fully grasped what was emerging. I felt that some knowledge of what I was doing was present, that there was a point to the exercise, that the activity was leading me somewhere. But this felt like it should be resisted at first, these feelings were too subjective, they weren't 'scientific' enough. Regardless, I continued in the knowledge that this was a type of progress.

A literary search yielded no crowdfunding framework and given the increased output of academic literature on the topic (Booth, 2015b) this is surprising when we consider the above components for a conceptual framework are present (cf. chapter two). Combining this information and synthesising the relevant insights moves closer to the production of a conceptual crowdfunding framework which aims to demonstrate in a graphical form the relationships between these components. An example of the process of mapping this is given in Figure 11 above. Each sticky note represented a classification of the aspect relevant to the framework.

On the far left of this working scroll are the main headings, which later became the eight main headings of the framework itself. This exercise was afforded immediacy by the nature of the movability of the content on the sticky notes. They could easily be moved to feature under a different headline category or create a new headline category entirely.

The intention was to find relationships between core constituents of communication, engagement, permission, quality and crowdconsent. These are consistent themes throughout the crowdfunding review and as such it can be conjectured that the framework could be applicable across the taxonomy of crowdfunding models. But it is in the nature of conceptual models that this presentation be broad and flexible following further development by future researchers where extensions to the existing contribution and the possibility of radically new frameworks are a reality.

The headline sections can be mapped as shown in Figure 12 below. The crowdconsent segment is intentionally located at the centre as this is the connecting theme that underlies all the crowdfunding activities in the outer segments. They all lead to the granting of crowdconsent and thus the creation of the vision being proposed.

Figure 12: Main Headings in the Crowdconsent Framework.
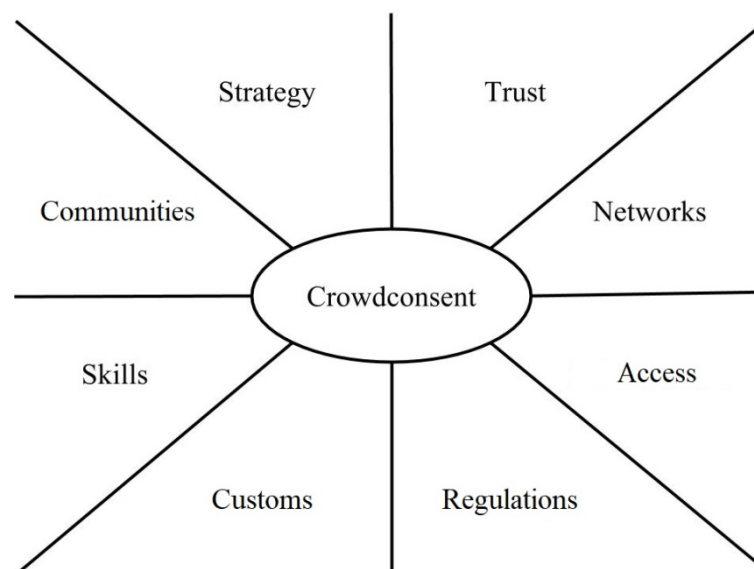
All segments are interrelated and, although not emphasised in the above image, are also iterative. Revisiting these areas as strategies for the research were codified and materialise in other forms (for example video) which enhance the overall quality of the campaign as a product in itself. This is imperative in the framework because entrepreneurs crowdfunding their project (the applicants) face a unique dilemma. Frequently in entrepreneurial activities, strategic planning is in a state of flux and adjustments are required to plans as emerging information is revealed from various sources (Lambrecht et al, 2014). However, when crowdfunding a vision there are only limited opportunities for adjusting these plans. If adjustments are perceived as being too radical then the applicant and their team may be seen as incompetent and crowdconsent withheld (Lins et al, 2016). Adjustments may also lead to delays in delivering the vision post-campaign where new conditions affecting production can emerge that are beyond the applicant's control, but nevertheless have an effect on the crowd's perceptions (Mollick, 2013).

These adjustments may include visual cues that have either high or low validity to the campaign (Mahmood et al, 2019). Mahmood et al (ibid) were able to demonstrate was that the visual cues, such as a logo, were significant in perceptions of innovativeness of the campaign and the vision being proposed. In turn, they (ibid) were able to demonstrate that this could impact the funding potential of a campaign. They (ibid) found that if the members of the crowd held perceptions of a logo as being 'complex' this correlated with perceptions of both the innovativeness and novelty of the vision being proposed.

However, far-reaching adjustments may damage perceptions of trust toward the applicant. The signal sent to notify the crowd of these adjustments may be of a lower quality or the crowd may reject the changes (for example they may consider them as excessively radical) (Lins et al, 2016). Either way, the result could be a perception of inadequate planning on behalf of the applicant and their team (Mollick, 2013). Therefore, iteration in the planning stages is an essential element of drawing together the various requirements to produce a campaign worthy of success. To do so requires an alignment of many components with significant contributions from the papers and experts reported in chapter two.

Table 23, below, provides a more accurate summative overview of the contributing authors and the main issues they addressed. The papers and their authors were selected based on the contribution they made to the overall framework's compilation. In presenting Table 23 it is possible to see the patterns that emerged and the contribution these authors made to the construction of the framework. Future adjustments will undoubtedly be necessary as new and emerging significant findings unveil more issues and trends that will impact the construction of such a framework.

The systematic review used Google Scholar Alerts to notify the researcher of new publications, combined with a monthly online search using Bing, Duck Duck Go and Google (using the search term 'crowdfunding'). Each search result's first three pages were scanned along with standard searches utilising the library catalogues at the University of Southampton.

Two observational sub-headings are included under culture; *biases* and *tacit knowledge*. These are included as they are considered valid observations from both the academic literature on entrepreneurship more widely (Volker & Phillips, 2017; Chell, 2007; Haldin-Herrgard, 2000) and from direct observations by the researcher in their role as consultant.

Mapping the sum of these findings against the main framework headings produces the larger graphical representation above which forms the core of the first outcome, a workbook entitled *Crowdfunding Readiness Assessment* (CRA). Creating this framework is a direct reflection of the secondary research (observation followed by literature review), followed by semi-structured interviews with end users (applicants). This framework is an empirical iteration which summarises each section and, via the CRA, provides a deeper observation of the requirements of each. The full framework can now be produced and can be seen below in Figure 13.

Table 23: Crowdconsent Frameworks Contributing Authors and Issues.

Internal	
Strategy	Mollick (2013): quality signal Mitra & Gilbert (2014): scarcity + authority Gerber at al (2012): support for vision and promises Sharma (2010): visibility to crowd + support
Communities	Mitra & Gilbert (2014): liking (advocacy) and reciprocity Mollick (2013): size of networks Buckingham (2015): depth of networks
Skills	Smith (2015): crowd's skills + ability to feedback Xu et al (2014): updates Mollick (2013): conceptualisation of problems Sharma (2010): human capital Uzzi (1996): embeddedness
Customs	Sara (2017; interview): passion and drive Mollick (2014): nature of population applicant located within Biases (observation) Tacit knowledge (observation)
External	
Trust	Lins et al (2016): impression management theory Smith (2015): collaboration + protection Coleman (2014): authenticity Gerber et al (2012): engage and contribute + use of funds Caldieraro et al (2011): verification
Networks	Davidson & Poor (2015): emotional connectivity Beier & Wagner (2014): develop social relations Mitra & Gilbert (2014): social proof + social ID theory Mollick (2013): geographical relevance + Matthew effect Agrawal et al (2011): geographical attractiveness
Access	Booth (2015): spread ability Planells (2015): independents Beier & Wagner (2014): external sites and crowdfunding platforms Lambrecht et al (2014): information intermediaries Gerber et al (2012): feedback
Regulations	Buckingham (2015): compliance [law / platform] Sharma (2010): risks [prospective / security / regulatory]

Figure 13: Crowdconsent Framework in Full.

Figure 13: Crowdconsent Framework in Full.
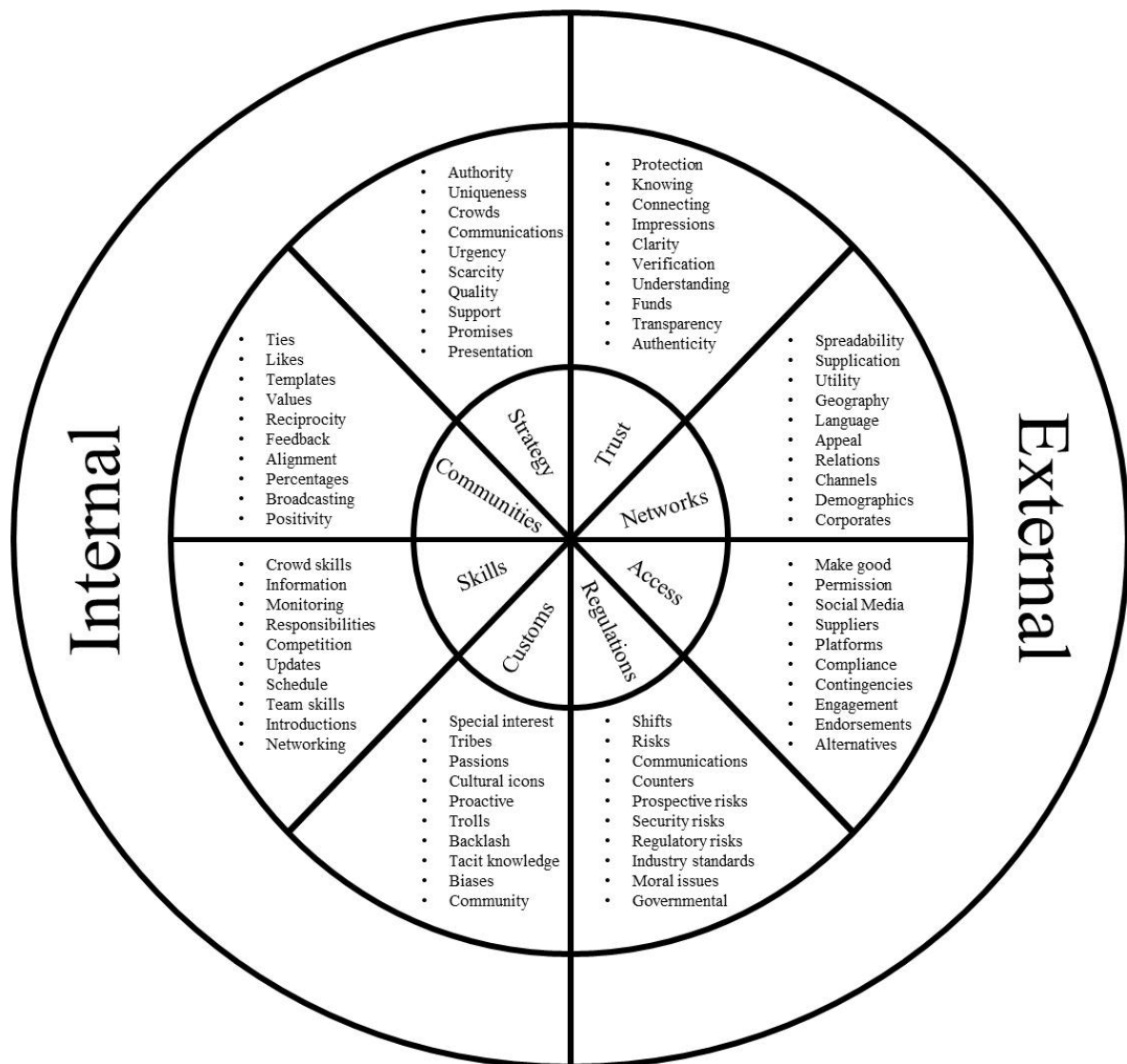
4.4.4 Framework Validation

This research employed semi-structured interviews and where these were not possible, emailed questionnaires, with experts and applicants involved in crowdfunding a vision at some level. The intention was to validate the framework through triangulation. Data was anonymised in accordance with the ethics review submitted and cleared in 2017 (ethics review number 24431) with University of Southampton.

Semi-structured interviews were chosen as they allowed for a degree of greater freedom in the interview when compared with structured interviews (Robson, 1999). The final interview alternative would have been to have had an unstructured interview with the experts. This was considered but rejected on the grounds that the researcher had their 'shopping list' (ibid, 237) of areas that they wanted to discuss with the applicant whom had already received their own copy of the workbook for discussion. The reformatted questions that had been observed in the initial stages were now housed for interrogation in a workbook entitled *Crowdfunding Readiness Assessment* (CRA). This outcome was the focus of the interviews and allowed for triangulation of academic literature, experts and applicants in order to validate the framework.

There is a clear parameter for the inclusion of the subjects for interviewing concerning the crowdconsent framework as they all have direct connections at some level with the crowdfunding process. Semi-structured interviews are themselves a process where data is generated, while simultaneously providing units for later analysis (Denzin & Lincoln, 2005). The purpose of the research at the CRA (Crowdfunding Readiness Assessment) stage was to gain interpretations of the utility afforded by the CRA to individuals who were anticipating using, or had, used crowdfunding. For this reason, a more focused recruitment strategy was adopted in which the subjects were connected at various levels with the crowdfunding process.

By housing the crowdconsent framework in a paperback or pdf workbook, the intention was to provide participants with an artefact familiar to most. Participants were able to request either or both formats, and once they had digested the contents it followed that they engaged with the questionnaire or attended for interview (all, except Sara's which was done via VoIP, were held at Winchester School of Art). The purpose of CRA can be stated as aiding their ability to understand and create more robust crowdfunding campaigns that are successful in reaching their goals.

When dealing with multiple realities and different campaigns, all with needs and desires that fit their specific vision being created, there is a danger that an outcome which attempts to deal with these variations using one formula becomes a one-size-fits-all attempt to solve the issues applicants face. CRA comprehensively covers all success criteria identified from the literature and incorporates these factors into a volume which allows for both interpretation of, and reflection on, the questions as they are thought about in the context of the specific campaign. By doing so, CRA does not make any attempt to side-step the threat of becoming a generic artefact that is applicable to some and not others but rather adds value by guiding the respondent in what they should be considering as they plan their campaign. The depth of these issues and the likelihood that they will affect the campaign were left open to interpretation by the respondent.

The four Interviewees were chosen as they had been responsible for advising on, or executing, a crowdfunding campaign and were recruited through several channels where the researcher is active, including advertising at workshops, talks and various press articles and a call for assistance on the researcher's own social media channels (mostly LinkedIn and Twitter). These interviews and questionnaires formed the basis for the validation of the CRA as a concept in that the basic idea achieved the desired outcome of providing a deeper cognition of the crowdfunding process. This was a subjective process which utilised semi-structured interviews as these aligned well with the aims, ontology, epistemology and methodology of a study framed by a social construction lens, as can be seen in Table 24 below, which holistically outlines the inductive paradigm of this research and in so doing provides some support for the methodological design decisions outlined in this chapter.

Table 24: Taxonomy of the Paradigm (adapted from Denzin & Lincoln, 2005).

	Paradigm of this research
Ontology	Reality is socially constructed and multi-layered.
Epistemology	Constructed reality (conversational) between agents.
Human nature	Language game rules produce social & symbolic capital.
Methodology	Mixed - use of netnography, qualitative & quantitative data.

****

CRA is a workbook over one hundred and thirty pages long and as such a decision was taken in consultation with my supervisors to include the CRA as a pdf on a CD – this is attached to the rear of this thesis for your perusal.

****

Housing the crowdconsent framework in a book format created the first practical outcome of this research. Validated by experts and applicants with the intention of using the crowdfunding model to finance their early stage visions, CRA was written with the intention of being the first outcome to be tested with real world applicants.

Figure 14: CRA (Crowdfunding Readiness Assessment) Front Cover.
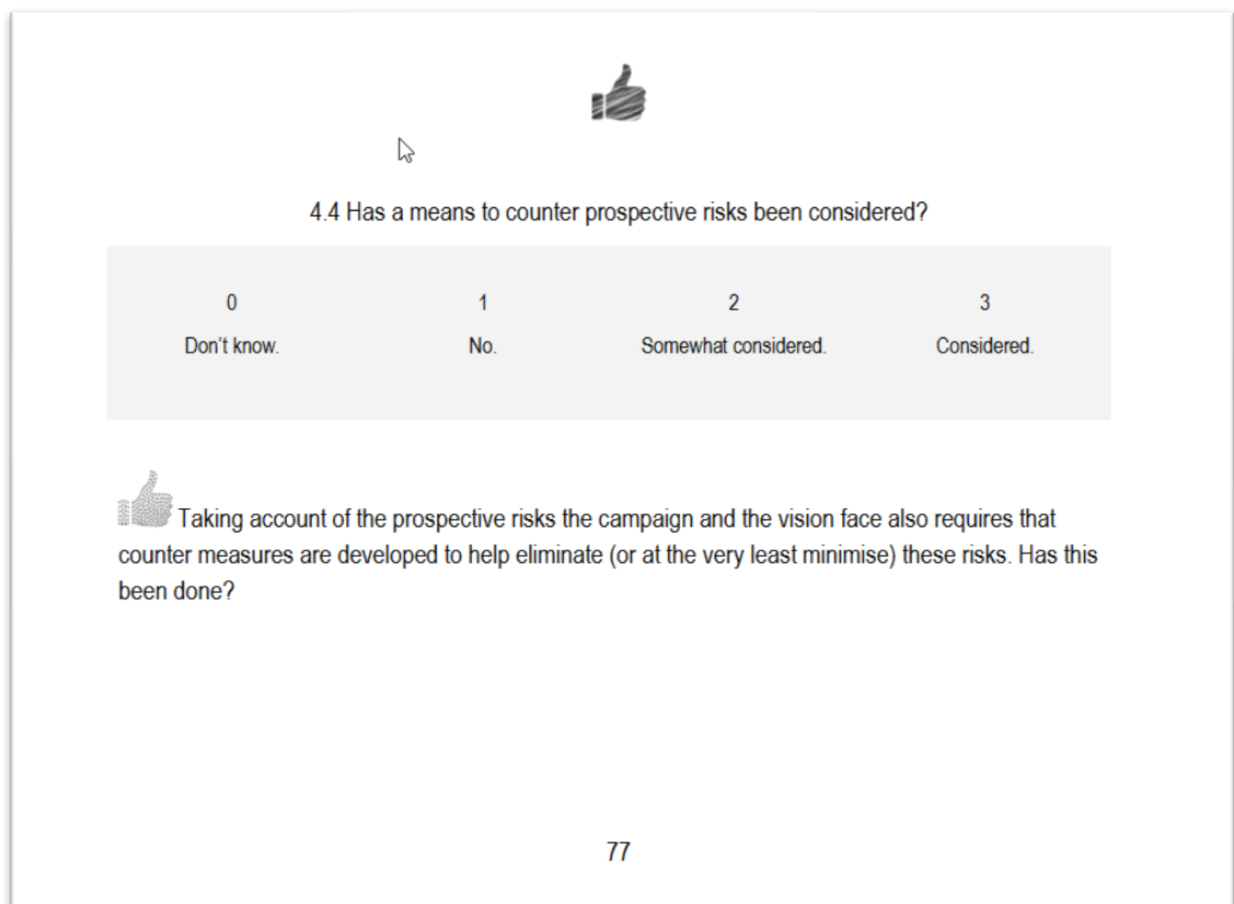
When writing CRA the format was a structured series of questions posed to the applicant who then responded using a Likert scale of 0 (don't know), 1 (low) 2 (medium) and 3 (high). Responses were then mapped against a spider (radar or web) graph (see Figure 16 below). This visual tool could then be used to locate potential weaknesses and strengths in the campaign at the pre-launch stage. Each question was followed by a limited amount of advice, which provided an insight into, and at times a justification of, the question.

In the example provided below the question focuses on prospective risks. Prospective risks are highlighted in the introduction at the beginning of the workbook where each section is given more depth. On the pages with the questions, where the respondent is expected to mark their own knowledge, skill or understanding, there is a further sentence or two to reinforce this understanding. These are intended as guides to the process and not to be taken as absolutes.

For example, in CRA question 4.4 (fourth question under the 'regulation' heading) the focus is on prospective risks and the possible counter measures that could be employed once these are identified. The question is not intended to suggest that there will definitely be prospective risk, the point of the exercise is to introduce the applicant to these issues and suggest that they may need consideration in the planning stages of their campaign, rather than suggesting that they are certainties in their particular instance.

Figure 15: Example Page from CRA (question 4.4, page 77).

Answering these questions, the applicant then aggregates their total score for each section and translates these onto the CRA spider graph, a blank example is given below.

Figure 16: CRA Blank Web Graph.
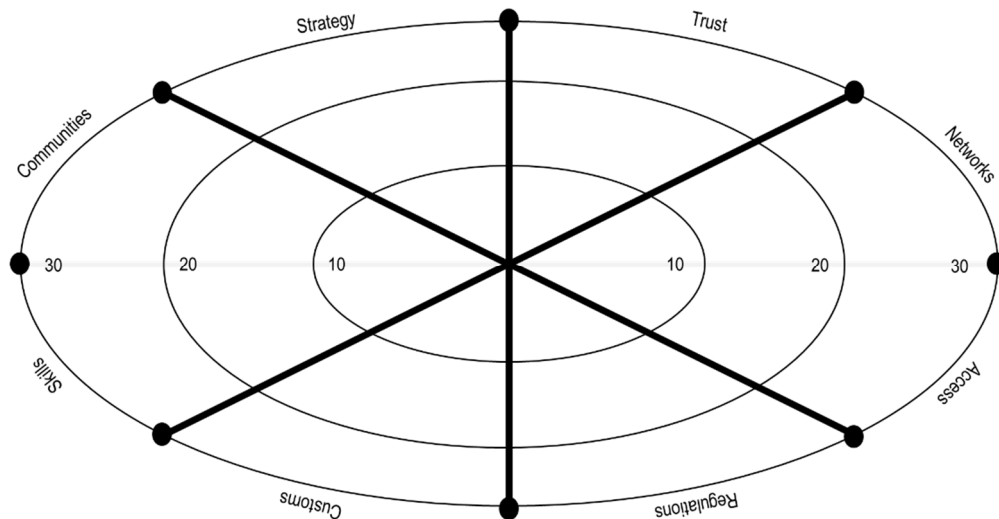
Housing the framework in a publication also meant the possibility of utilising a commercial platform, Amazon, exposing the outcome to the general public where the potential for criticism and praise alike are afforded by their customer review system. This could, in itself, be a valid exercise where the publication is judged not on its academic merit (peer review) but on whether or not it achieves what it intended to achieve; helping applicants seeking to crowdfund their project to gain a deeper understanding and cognition of the entire process. Use of this platform and the subsequent exposure may also mean more radical adjustments may be required by the end users.

This form of research and redesign is a well-documented method of meeting end-user needs and desires. Ries (2011) uses the term 'pivot' to describe a methodology he claimed in the book *The Lean Startup* [sic]. To pivot a product (inclusive of services) is to make adjustments to that product following feedback from the end user or customer. Learning is an integral part of the pivot process and as Ries (2011) states it can be quite a daunting prospect, especially when the product seems to be delivering the value that was initially sought by the entrepreneurial team at the outset. The issue then becomes one of demand. If the demand is lacking and the initial product is not sustainable then there is a clear need to pivot on the learning gained from customer or end user insights (Ries, 2011).

The alternative is to persevere and continue with the product without changes in the hope that growth and market acceptance is forthcoming. Ries (2011) is keen to emphasise the scientific nature of the Lean Startup [sic] approach, but Ries (ibid) also states that the method he advocates is not detached from human nature and the "vision, intuition, [and] judgement" (Ries, 2011: 149) should all be accounted for in the decision-making process that leads to a pronouncement to pivot or persevere (ibid).

Over the course of writing this thesis a debate was had among colleagues over the production of a commercial outcome on the market and the potential for conflict with the research agenda. For example, should the outcome be launched before the research is completed and the thesis published? Is there potential for friction between the researcher's time spent writing the CRA and doing research toward the end thesis?

Generally, it was felt that the CRA underpinned the research and that the potential for conflict was minimal in that the principal rationale for the CRA as a tool was developing the fluency of potential crowdfunding applicants, while also validating the crowdconsent framework. The CRA is a tool for the development of this fluency and added weight to the methodology informing the research holistically. For the applicant, completing the CRA gave them an opportunity to engage with their campaign at a much deeper level. Part of this was the understanding they gained from completing the mapping exercise which forms the finale to the workbook.

Readers of the CRA are invited to answer a series of questions related to the sections of the crowdconsent framework. There are 10 questions to each of the eight sections and scoring with a Likert scale of zero to three, applicants record the final total score in each section. These scores are then mapped on to the spider graph as shown in the example below (Figure 17). As stated above there simply was not enough room to include the workbook here and so a CD is included that provides this outcome as a pdf. The first sections of this workbook are designed to help guide the reader in understanding that although they are encouraged to address each of the questions, this does not imply that all the questions are an inherent issue for that particular campaign. Some discretion on behalf of the applicant is needed.

Figure 17: Example of Completed CRA Web Graph.
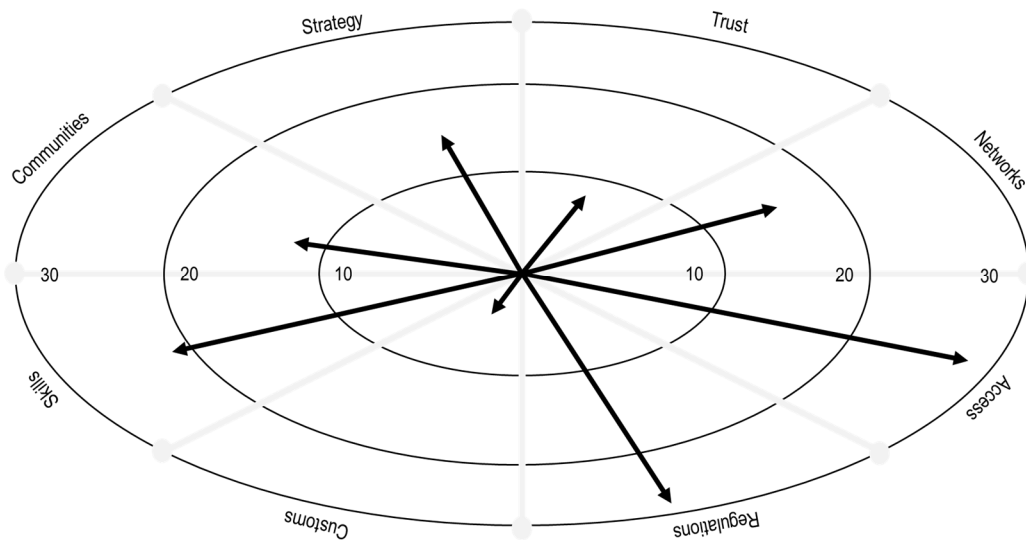
The starting point was a literature review of crowdfunding (chapter two) followed by a serious game review (chapter three) which provided an understanding of the planning and design processes (as related to the crowdfunding and serious game contexts). In this analysis the identification of an optimal product type (e.g. augmented reality games, board games, card games, digital games, MOOCs, serious games and textbooks which included gamification) were also sought. As this element is of primary concern to the user base (the applicants) a bottom-up, rather than a top-down, approach to the design process was adopted early on (see appendix C7).

However, reflections on past cases of practical campaign building, where the researcher had been a consultant, were also considered in this early stage. Their inclusion was a further strength in that the researcher had worked with an eclectic range of campaigns, which had established him as an independent specialist within the crowdfunding eco-system. This is a more aligned methodology with participatory action research where the researcher may form a relationship with the studied subjects who may even help co-ordinate the research process (French, 2009; McInnes & Hibbert, 2007; Dick, 2004).

Both the paperback CRA and the design of any subsequent serious game would be based on reflections of the work the researcher had undertaken and the concerns of experts who validated the crowdconsent framework, via the CRA workbook. This was the first outcome following the literature review. It was created as a means of disseminating information about the crowdconsent framework and gain essential feedback from experts related to the crowdfunding sector. Beyond this, it also solved a practical problem for applicants seeking to crowdfund their vision in that it provided a much deeper analysis of their campaign than had previously been seen on the market. As far as the researcher was aware, this was a first for such an outcome.

In terms of serious game design and production, the crowdconsent framework is an essential support tool in the design process. The conjecture in this research is that a good serious game can positively affect the fluency of a crowdfunding applicant. Iterations of serious game design will be based on reviews and subsequent validations of the framework, which leads to the playtesting of any serious game to, in turn, validate the game as meeting the characteristics and qualities which fulfil the serious game's intended objectives (Marsh, 2011).

The requirement for a 'game' in the first instance emerged from the conceptual bridging of crowdfunding and serious games. Games provide a very broad base from which learning can be delivered and developed as an ongoing process (Shaffer, 2006). Learning, when reduced to core components, can provide levels of understanding that concern the procedures, rubrics and principles of the topic (Gee, 2007, Anderson et al, 2001). Playing and using games can aid the ability of the agent to conceptualise processes like crowdfunding.

Progress in contemporary forms of play and the social undercurrents this can produce are all relevant and useful sense making attributes for the agent (Salen & Zimmerman, 2004) learning to crowdfund. These elements can be reflected in the crowdconsent framework's delivery provided the form is assessed and adequately developed to include robust sets of learning objectives that can help guide design decisions. This adds a further justification for the development of the CRA workbook. Although not a serious game, it allows for assessment of the crowdconsent framework and understanding of and reflection upon, before the focus switches to the development of a serious game.

Following the emergence of a conceptual framework from the literature, testing to assess the validity and viability of the concept as one that can be developed from concept to working model would be the next logical step. In doing so a mixed method approach was used that provided qualitative data from individual interviews and observations, and quantitative data gained from users via questionnaires related to the serious game (Rigby, 2014).

However, each campaign, and the organisational construct behind it, will produce different weaknesses and strengths. Therefore, although the crowdconsent framework is applicable across crowdfunding models, as the principal requirement is repeated in all models (i.e. crowdconsent), the results from any particular use, by any particular applicant, are expected to differ in terms of the characteristics in any particular campaign.

Through research methods that involve direct contact with those working at the crowdfunding coal face, with the crowdconsent framework, the outcome design and, ultimately, the crowdfunding process, may be better understood. To restate, the methods seek to understand optimal serious game design for increased fluency of the applicant within the crowdfunding context. To do so involves firstly framing the questionnaire in the novel form that is the CRA, which underpins the design processes of a serious game's development. In the next section the focus shifts toward a serious game and the methods chosen to test such a game.

4.5 Game Testing Methods

A serious game focused on the interactions of the crowd with the applicant could address issues and concerns that may be raised by the crowd in a real-world crowdfunding campaign. These crowdfunding campaigns are socially constructed entities and have a common factor in all five distinct crowdfunding models; donation, reward, equity, interest and mixed, that is they are seeking crowdconsent – permission from the crowd to create the vision initiated by the applicant. A review of generic press on the topic along with a systematic review of academic literature revealed a bias toward the reward and interest (debt) models.

Scanning the real world of campaigns, comments and questions were generally found to be more focused in the equity and interest forms of crowdfunding. These represented a more rigid business model and reflected a more perceptive investor interrogation with a deeper need to understand the various business models before applying their funding.

On the other hand, the reward model can be characterised as 'shopping for cool'. In this model the comments and questions regularly demonstrate a low level of critical thinking and are generally often supportive in nature rather than treated as an opportunity for interrogation. An example would be a declaration of 'cool' or 'awesome' by an observer who is publicly indicating their respect for the vision and, possibly, the team behind it.

The significance of this area of the crowdfunding process is that crowdfunding is reliant on open discussion through both the forum that accompanies each crowdfunding platform and through channels independent of this forum (such as external social media platforms like Facebook, Instagram, Reddit or Twitter). Comments and questions produced by the crowd in this process are an effective tool for addressing the concerns and issues that funders may raise (Buckingham, 2016a; Desai et al, 2015; Berg Grell et al, 2015). It is also an effective platform for these issues and concerns to be meritoriously addressed by the applicant and their team. It presents an opportunity to add clarity for the crowd and show just how all the various elements are aligned to fulfil the requirements of the business model being proposed (or existent, in the case of projects seeking growth).

Given this utility of the comments and questions for the whole exchange mechanism, it was a surprise to learn that no attempt, as far as the researcher was aware, had been made to develop a serious game based on these interactions in this model. As a socially constructed vehicle for vending a vision, it seemed that an opportunity had been missed in that a serious game, with the right design elements, could fill this gap and provide practical value for the applicant and possibly the funder. The problem when designing the game is how to capture the multi-faceted nature of these comments and questions in a game format that would simultaneously be easily comprehended, fun and educational. This locates RQ2, 'How can the crowdconsent framework for crowdfunding help the design of the serious game?' at the nexus between crowdfunding and serious games.

An early priority, before the development of a game outcome, was to seek the types of comments and questions asked by the crowd and understand their relevance in the context of an equity raise campaign. The main purpose of this exercise was to understand if they were unique or similar in terms of the interrogations, or comments, being made. At this point the game outcome was open to interpretation. All game options, in terms of end outcome, were to be considered and the most appropriate decided upon once these comments and questions were evaluated and some form of taxonomy had been introduced.

The methodology used at this early stage was a grounded theory approach (Hindle, 2004: Strauss & Corbin, 1998). This allowed for an emergent set of taxonomy and theory to form from the perceptions of the lived experiences of real-world campaign management and the crowd asking questions / making comments. There was also a concern that the game would fail to adequately prepare the player for the realities of the interactions they would face once they went live with a campaign.

Fun was recognised as a necessity for player engagement (Herger, 2014; Chatfield, 2010; Heeter et al, 2004), but simultaneously the players needed to comprehend that addressing the crowd in an appropriate manner was a contributory element to the success of their campaign (Mitra & Gilbert, 2014). The sheer volume of potential questions from the crowd and the process of interpretation were equal to the general comprehension of the comments and questions players were most likely to encounter. This educational element needed to be balanced with fun in a serious game (Heeter et al, 2004).

It is an axiom to suggest that a game cannot prepare a player for *all* possible eventual interactions with subjective agents. Agency is a natural characteristic of the crowd and so there will be occasions when statements are made or questions asked that are not found in a serious game designed to simulate interactions. The proposed serious game represents an opportunity to develop the fluency and understanding of the player in the context of the comments and questions likely to emerge through contact with the crowd when seeking to spread the risks of the project through an equity sale, and not to act as a specific set of case studies for players to refer to as a doctrine or policy guide when addressing their crowd's issues. This could be an area of interest to future researchers, where artificial intelligence and game learning concepts are introduced to a digital version of this game. For this study the testing and development of the concept as a cultural product is a priority.

Based on netnographic observation of the nature of the crowdfunding models, the first game to be produced was founded on the comments and questions raised by the crowd in the equity model. Based on subsequent input and feedback from play testers newer versions were realised and tested. Very early versions of the game in phase one saw the production of the first version play tested among friends and family (n = 12 players). This resulted in some refinement (see Appendix A) and phase two saw these refined products being play tested with a wider audience (ethical approval granted by University of Southampton ethics committee: ethics #24431). The methodological approach of phase two was playtesting with mixed methods consisting of observation, anonymous questionnaire, dot voting poll, swift exit interviews and session summary sheets.

Session summary sheets were a novel approach to the methods employed to validate a serious game (see appendix B below). For the social scientist using qualitative methods field notes were a respected approach in their repertoire, especially when interviewing. As an interview progressed notes were taken and these were viewed as a form of additional data for analysis once the interview event had taken place (Tessier, 2012). This could however be both cumbersome and distracting for the interviewer as their attention is diverted during the interview process to record their notes. Advantages were, according to Tessier (2012), that these notes provided a strong analytical object which could be used as reference material to interpret the realities of the interview event.

Their recording traditionally used a pen / pencil and paper brought into the interview and used by the interviewer, but with modernity and advancements in technology computers could replace these methods of recording. A problem exists with this in that the computer can be between the interviewer and the interviewee, acting as a physical barrier (ibid). The same inference could also be made about playtesting where the observer is concerned with recording rather than observing.

Methodologically these exercises were introduced to record the feelings and non-linguistic data of the event and act as a record for reference at any time in the analytical stages. Issues arise as we address the problem of the subjective voice in interpreting the nuances recorded during the interview or playtest. The write-up in these notes remains the wording of the author, and the interpreted reality of this recorded event remains with the researcher (or reader). The reality is often that the researcher has first established the protocols for the capture of the data and then executed the event where this data is captured.

This presents an uncomfortable debate in the literature over the rhetorical activity (Tessier, 2012) of the researcher and their written summaries. In essence this is an epistemological issue where the realities of the text are questioned (Lüders, 2004). It is focused on the realities of the text and the rhetorical nature of social research more broadly and highlights the researcher's "dilemma" between rhetorical construction and empiricism, "from which there is no reliable way out." (ibid: 228).

Methodologically, Tessier (2012) positions these methods of recording as both economically minor and instant; the notes are recorded as historical truths with minimal cost to the researcher and are written at the time of the events (or very close to the event). Tessier (ibid), also notes the possibility for lapse of memory as the research process continues if these notes are *not* taken at the time of the event. As temporal distance of the event increases and attempts are made to recall the event, memories can become blurred and thus become ever opaquer with the mists of the researcher's own biases surfacing during the recalling of the event (ibid).

Continuing with criticism of the method, Tessier (2012) also notes problems concerning the repeatability of the event. It is a one-time event and having completed it the remaining residue in the form of recordings is all that is available to the researcher. Field notes cannot be revisited in the exact spatio-temporal context of the previous event. Any subsequent events may be similar, but not identical in nature (Lüders, 2004). Protocols for the events are suggested by Lüders (2004) as a means of alleviating this issue to some degree, but questions will remain regarding the validity of any subsequent comparative analysis.

Further issues remain relating to the simplicity of field notes as a method of capture (Tessier, 2012). They are often rushed in that their purpose is to record events live and without the skills of short-hand writing methods for recording on paper, or speed typing skills when using a keyboard, the researcher is recording data within temporal constrains. Errors may occur in their recording, interpretation or the sequence that change the reality of the sequence or intended meaning of events in the text.

This issue corresponds with that of the researcher's reality surfacing at the expense of the interviewees. In the note-taking process the interviewer may only record what they perceived as being suggested, or said, in the interview / playtest and thus record perspectives that are aligned more with their own, while the interviewee's / player's perspectives become under-represented in the notes and subsequent write-up (ibid).

For all these failings it was felt that not recording the subjects' interpretations of the event on the behalf of the researcher would be a mistake. The researcher is the sole survivor of each playtest and the one representative present during any sequences of playtesting. It therefore seemed appropriate that a compromise be found. Session summary sheets offered just such a compromise (Robson, 1993). These could be hand-written notes recorded immediately post-play and would capture the subjective feeling of the researcher after each playtest. Topics to be covered were lighting, room set-up, interactions and arguments of the players. The hope with this method was to relive the session, to some degree, when playtest analysis began.

In addition, a further novel approach was adopted in the research as content (word) clouds were used to try and determine the most prolific words and uses of terms in the session summary sheets. These subjective notes by the researcher were difficult to decipher at times as the inexperienced researcher relied on his feelings and interpretations of each session, which was the point; to record qualitative data about each individual playtest. The issue was how to present this data in a format that would make sense.

Using the free online content cloud generation tool, wordclouds.com, the researcher was able to produce content clouds that would emphasise the most common words used in each of the session summary sheets (Cidell, 2010). These were typically seen in the clouds as the larger words in the mix. Although considered novel, there are some uses of content (word) clouds that offer precedence to their use in academic research (cf. Weber & Dacin, 2011; Cidell, 2010).

Appendix B provides more detail about the session summary sheets and the resultant content clouds can be seen in Appendices B1 to B5.

Structurally, playtests followed the same routine as outlined below:

- Entry and room set-up.
- Players were greeted and a brief verbal outline provided.
- Instructions were read and play began.
- Observations were made and the learning objectives were mapped on an observational tick sheet created for this purpose (see Appendix E below).
- Questionnaire distributed and completed, simultaneously a dot voting poll was given to each table and they were asked to vote using the sticky dots provided.
- Short round of questioning and feedback verbally sought as players packed-up.
- Thanks, and praise for insights.
- Session summary sheet completed.
- Pack-up and exit.

The observational tick-sheets were used to record each time a corresponding learning objective appeared to be met. This was a verbal reference to a particular element of the game or game component and provided a quick-fire qualitative method of recording data. Qualitative because there were some issues with the reliability of this method, namely, that with the larger groups playing in one session it proved difficult for the researcher to record every occurrence. There was a high chance that some occurrences had not been recorded as the researcher's attention was elsewhere at the time. Appendix E below shows a blank example of the learning objectives observational check sheet. This used pencil and paper rather than being mediated by electronic device.

4.6 Chapter Summary

Social constructionism has been the adopted underlying lens through which this inductive social research has been viewed. From this paradigm the ontological base can be positioned as one of multiple realities, all socially situated, which leads to the epistemological situation of a constructed reality where language, particularly the interactive language of conversation, is created between agents within the social frame of the interlocutors at that time. Social and symbolic capital is now earned as language game rules produce this value (Harris, 1988). Methodologically this resulted in a mixed method approach where both qualitative and quantitative plans were drawn up, data collected, produced, analysed and reported in this thesis by the researcher.

Two outcomes now begin to emerge; one a framework for crowdfunding and the second a serious game, which applies the findings from the framework to a simulation of some form. Both seek validation as products of worthiness to their respective end users. Triangulation for the framework is to be modelled as shown below in Figure 18:

Figure 18: Crowdconsent Framework Triangulation.
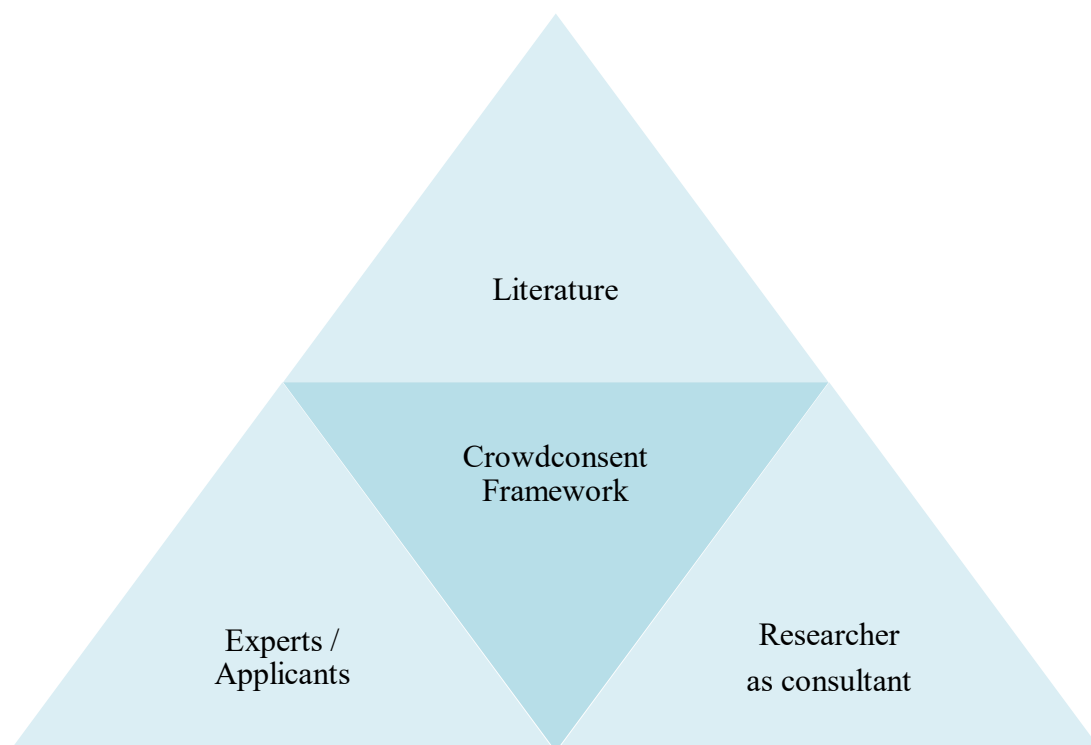
Validation using this method may seem a little explicitly scientific for research in the inductive paradigm field, but induction was the path chosen in the initial explorations of the observed conversations on the platforms for equity and debt crowdfunding. It began with no hypothesis and the only theory that it could claim was that something may have emerged from the observations. Thus, this research remains rooted in the inductive camp, although that is not to say that value of deductive methods is not recognised, simply that there exists a track-record of induction.

Using the method of triangulation as set out above (4.6i), to validate the crowdconsent framework via the Crowdfunding Readiness Assessment (CRA) workbook, takes a more scientific turn in this approach. Distributed to the respondents, CRA was the basis of discussion both in interview and where necessary emailed questionnaire. This workbook covers all eight headings in the crowdconsent framework and applicants use a Likert scale for the self-reporting of the dynamics of a campaign. For the experts, their views are not so much how this worked in aiding their cognition of the crowdfunding process but more focused on the value they predict this will create for their mentees or clients. CRA is lengthy as each of the eight headings in the crowdconsent framework has in turn ten sub-headings which represent the main findings from the literature and the working experiences of the researcher.

CRA responds to research question (RQ) one: "What would an appropriate framework for crowdfunding be?" If the assumptions made in this thesis are correct, then the answer will be something analogous to the crowdconsent framework. But as suggested above, this is reliant on the findings of the contact that will follow with the end users and experts in the crowdfunding eco-system.

Attention now turns to the planning and building of a serious game. There is a concern that the depth of the CRA may not be possible to replicate in the serious game and that there is simply too much content for this purpose. For this reason, it may be necessary to produce multiple mini games or to produce one game focused on one element of the crowdconsent framework with the explicit aim of addressing RQ2: "How can the framework for crowdfunding help the design of the game?"

At this stage it is envisaged that the framework will act as a guiding principle in terms of the mechanics and dynamics of a serious game. This is especially salient if the game is to be an endogenous one, built from the ground-up, rather than applying the framework to an existing game structure. This is dependent on the framework being validated and corrections being made through an iterative process of design. This process of iteration is also expected with the serious game in that the process of designing and building will involve testing and reflection on the input from the players themselves.

Serious game players will not necessarily be seeking to crowdfund their vision. Game testing at this stage will be to gauge how effective the principles of the mechanics, dynamics and affects are in the created game world. The focus will, therefore, be in part on the fun aspects of the game and the feelings of the players while playing. Combined with this will be the appropriateness of the game for a player to learn, as such the learning objectives as set out in chapter three will also be an element of any playtesting using the learning objectives check sheet.

Figure 19: Playtest Methods.
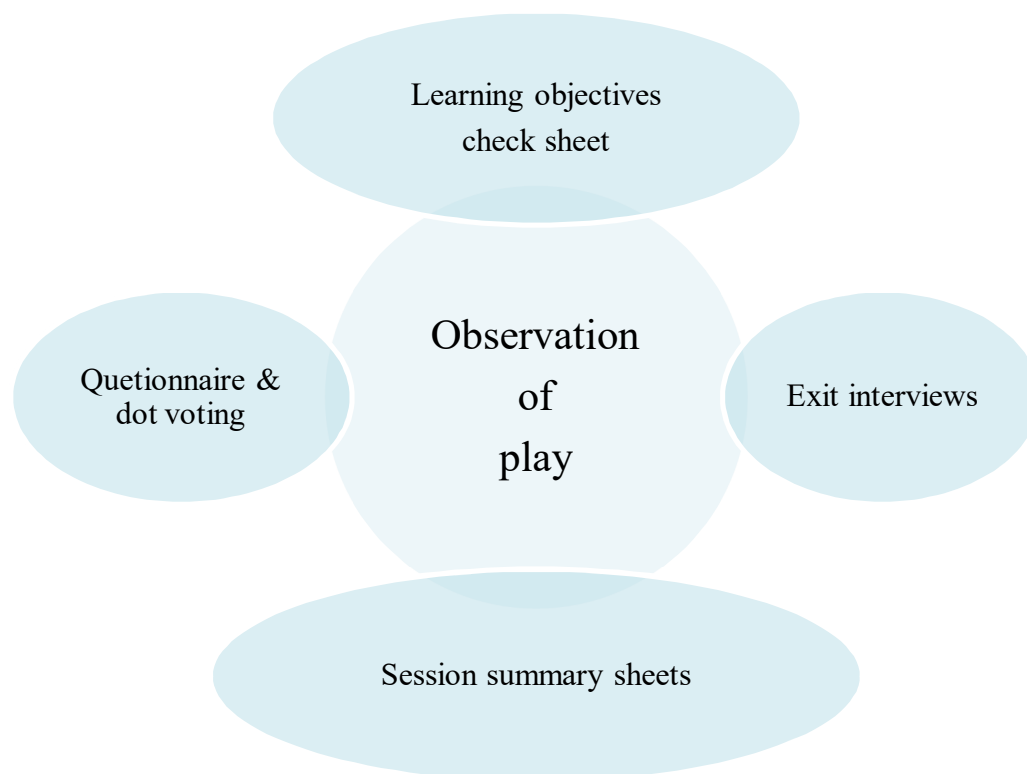
Principally, the learning objectives check sheet will act as a tick-sheet for the recording of learning objectives being met during play. The sheet will contain all the corresponding headline learning objectives and the observer can mark when an objective has been met or when a corresponding event has been witnessed. This is a simple but effective means of recording and reporting these events. Furthermore, as we learned in chapter three, these learning objectives are considered critical in the design process for a serious game of this nature. By addressing these issues, the playtests may also report any relation to RQ3: "How can the simulated game educate the applicant in the making of appropriate decisions in the real-world scenario?" If this is so, then the research will have met its main goals and will in itself have created something of worth for both academia and the practical world of crowdfunders. To test the responses of the players to each playtest a questionnaire was drawn up that appraised the five essential ingredients of fun as they related to this context. Drawn from the list provided by Garneau (2001) and then extended by Heeter et al (2003), the list of fourteen topics was considered too long for the purposes of this playtesting phase (see 3.7.3 above). The final questionnaire adopted the five most salient reference points:

- Competition
- Social interaction
- Discovery
- Physical activity
- Learning

To reinforce findings from the above questionnaire a dot voting poll was also used whereby the player could vote on aspects of the experience. These were paraphrased from the Institute of Play (2012) Q Design Pack version 1.0. In terms of the methodological approach this meant a much deeper insight being gained from the player; they answered the questionnaire, which was a personal reflection, while the questionnaire in the form of the dot voting poll represented a more open approach where players could physically see their peers' votes. Whether this had any influence on their voting decisions is open to debate. Using random coloured sticky dots, players were also asked to place their dot in the corresponding square. The hope was that this would further reinforce the questionnaire responses of the players and so there was some overlap in the question design.

CHAPTER 5: DESIGN, RESULTS AND DISCUSSION

5.0 Introduction

This chapter is divided into three interrelated sections, where the design aspects of the products are analysed. The results of the interviews and empirical tests are then introduced before moving to discussion and limitations.

In tackling the outcomes of the methodological approaches outlined in chapter four above, beginning with the Crowdfunding Readiness Assessment (CRA) and the validation of the framework presented in the form of a workbook, critical insights were gained from the four semi-structured interviews and two emailed questionnaires where the respondents were unable to attend for interview. In validating the CRA it became clear that the language used in the workbook was an obstacle to clarity for the users, which defeated the objective of the products creation, to act as a support mechanism for those seeking to crowdfund their vision (the applicants). This exercise did however allow the research to respond to the three research questions (RQ1, RQ2 and RQ3) and in doing so has contributed to the creation of new knowledge.

Following some relatively minor adjustments to the crowdconsent framework, the development of the serious game then followed. Once this was completed five empirical playtests of four versions of CCBG (Crowded Comments Board Game) were then conducted. This serious game incorporated the crowdconsent framework which was then analysed through each of the five playtests in turn. It should be noted that no pre-tests were used in this research as they have been reported to prime the subjects in order to focus more acutely on specific aspects of the game. This may alter their behaviour and could have had an influence on their interactivity while playing the game (Gomez & Marklund, 2018).

Following this discussion and limitations of the research will be undertaken before exploring the future possibilities of the final products. A summary is then offered.

5.1 Design: Crowdconsent Framework

The crowdconsent framework is the first, as far as the researcher is aware, such framework dedicated to crowdfunding. It is a compendium of both academic literature review findings, expert opinions and anecdotal findings as experienced by the researcher in his capacity as a crowdfunding consultant working alongside applicants. The purpose of the workbook was to produce a viable product that could be experienced by the respondents in their own time. A product that conveyed the findings of the crowdconsent framework in a manner that made sense for the respondent and in summarising the crowdconsent framework, its purpose was to act as a guide and reference manual to the topics. In turn this gave the semi-structured interviews (and the two emailed questionnaires) a more definite focus.

In validating the crowdconsent framework, four semi-structured interviews were held and two emailed questionnaires were delivered as two respondents (Robbie and Mario) were unable to attend an interview. There were two additional interviews planned but these were not realised and reflect the unpredictable nature of entrepreneurship and those seeking to manage a project for crowdfunding. The interviews that did materialise ranged from 45 minutes to one hour fifty minutes in length. The focus, as stated above, was the practical uses of the CRA (Crowdfunding Readiness Assessment) for the respondents, or for their mentees. Sara and Wally were both advisors to businesses of various sizes and with varied issues seeking solutions. Sara specialises in the third sector (charities and the like) while Wally focuses on commercial projects and has a marketing background with some large businesses (250+ employees).

Henry and Steve were both applicants in the past and both had successfully funded their projects (linked anonymity approved by ethics review board). Henry used the reward model, while Steve had used the equity model. Consequently, Steve had also consulted on two larger projects (seeking to raise over £1 million). Steve is a certified high net worth individual and has in the past invested in several start-ups. His expertise is therefore both as a crowdfunding applicant and as an investor.

The remaining two respondents, Robbie and Mario, had both used the reward model to crowdfund their projects. For Robbie, this attempt failed to reach the £250,000 target, while for Mario he succeeded in reaching his target of £10,000. Respondents were all sent a copy of the Crowdfunding Readiness Assessment (CRA) workbook prior to engagement.

Table 25: List of Interviewees & Questionnaire Respondents (pseudo-names in order to anonymise these respondents and protect their identity).

Name	Sector	Interaction
Sara	Consulting	Interview
Wally	Marketing	Interview
Henry	Publishing	Interview
Steve	Software	Interview
Robbie	Hardware	Questionnaire
Mario	Games	Questionnaire

The method tested the product by supplying applicants with a paperback or pdf version of the CRA (according to their own preference). Following their study of the CRA and their working through the content, there was a semi-structured interview or emailed questionnaire was undertaken. The formats were decided on as this represented the intended formats for the final product. The workbook was published with Amazon.co.uk using their CreateSpace platform.

Based on both the literature review and the experiences of the researcher as a consultant the most appropriate framework for crowdfunding success can be stated as a framework which encompasses the main components identified in the literature blended with the researcher's own findings as consultant and the answers from the respondents to the interviews and questionnaire. Housing as it does the necessary components for the granting of crowdconsent, it maps out these components and provides visibility to the sometimes-opaque process of crowdfunding. Dividing the eight main headings into four, which represented internal and external aspects, the outcome aimed to produce something more easily digestible for the applicant. CRA can therefore be positioned as an appropriate framework for crowdfunding.

Critiquing this framework with experts and crowdfunding applicants it became clear that the language used needed to be adjusted in order to achieve the goal of producing a cultural outcome with value addendum for these users. One comment in particular highlights the issue:

> "Some of the language wasn't appropriate I think for third sector donations rewards programme but possibly more for businesses…because some of them are for business speak and some of them isn't what the language of the third sector…" (Interviewee Sara) [sic]

This became a common theme during contact with the respondents in interview and the CRA questionnaire. At issue is the propensity for the CRA to cover all crowdfunding models. As crowdfunding campaigns seek to gain crowdconsent the questions were thought appropriate to all models. However, each crowdfunding campaign will be characterised by some unique traits, mainly those of the personality of the applicant and their team and in this respect the CRA has an inherent weakness as suggested by respondent Robbie:

> "It covers a lot of ground and there was some relevance in all sections; but every campaign is going to have a different balance of need. I think the main thing is that the scope was right – you had to think through all the main issues." (Questionnaire respondent, Robbie)

A critical issue with this insight is that the applicant will not be aware of the main issues before embarking on their own crowdfunding journey. This is one of the motivators for using CRA; it can prepare the applicant before they launch. However, if the terms are problematic, then it fails to deliver the intended overarching objective of adequately preparing the applicant for the experience of crowdfunding their vision. CRA is unique, as questionnaire respondent Robbie, further commented:

> "There does not seem to be anything else that explores this [crowdfunding planning] in such detail, and also provides something that you do not just read, but that you use repeatedly to check on progress in planning and proposed execution." (Questionnaire respondent Robbie)

This respondent recognised the depth of coverage being attempted in the workbook, that the crowdfunding models are all covered and that the reflective process of the workbook is one where alterations are made to the self-assessed questions on an ongoing basis. That this relies on the framework itself can be considered a positive correlation and would suggest that the crowdconsent framework is beneficial in the format chosen for testing here, the CRA workbook. The limitations of this approach lie mainly in the format and the language used.

Adjusting the format and possibly moving to digital would afford accessibility on the move and adjusting the language used in the workbook would afford greater clarity for the reader. Interviewee Sara's focus was on the third sector, and she offered some critical insights into this sector and their probable resistance to CRA as a useful tool for their crowdfunding planning. In simple terms the CRA was too long. Sara frankly stated it took her ages to work through the book. She also found the opening introduction quite confusing and was baffled at first by the scoring system for the web graph.

As this graph was so pivotal to the outcome and utility of the CRA, this was a major issue. Interviewee Henry also found CRA overall confusing; "*That introduction I didn't feel like I understand, it was like going into a post-grad thesis without like, doing my GCSEs.*" But when asked how clear the instructions were felt to be, he claimed; "*No they were, the instructions were clear.*" This would suggest that the introductory text was written at a level that did not correspond with the expectations, or requirements, of the reader.

Steve also found section two problematic:

> "I struggled with this. Because a lot of these things are about how to score what's going on in someone else's head and not the person who's going, running for the money. Err, so you can't really put a, it's a bit like horse racing, you can't really put a bet on, on whether or not somebody is going to spread your campaign out further, umm, but you can try and ensure it by being interesting." (Interviewee, Steve)

Steve's particular issue stemmed from the terminology that had been used, particularly the term 'language of persuasion'. For Steve, an experienced corporate manager with international experience and a number of start-ups that he had helped to launch, his main gripe was with what he considered the "*bullshit bingo games*" (interviewee Steve, paragraph 16.02 / line 101) that some management use instead of plain English. His main concern was that the term 'language of persuasion' was a meaningless term. Here, perhaps more than at any other point thus far, the opposition between the lexicon of academia and that of some general management is most pronounced.

Henry, Sara, Steve and Wally, had all reflected on the terminology used and made the point that it needed to reflect the people likely to use CRA. Framing this issue as one of value creation, we can suppose that the language used in this first edition is failing to help the reader get to grips with the reality of crowdfunding because the terms used do not necessarily meet their level of comprehension. It is not the everyday language that these people may encounter, use and / or understand.

A solution to this was offered by Henry. When asked what he would do to improve CRA for future crowdfunders he responded;

> "I would change the way it addresses you into a more, sort of, friendly, human [way]…just to have it like OK, this is a friend helping me to do this rather than a test, an assessment, and then to include a lot of diverse kind of examples of crowdfunding that has worked, case studies kind of things, you know, practical" (Interviewee, Henry).

The key term in this was the use of the word 'practical'. Practical is missing in the CRA even though, in defence of CRA, interviewee Jack commented; "I found it really easy and accessible, the simple scoring method, as well as diagrams, were effective." He obviously did not encounter the same difficulties that others had reported. But a further issue now emerges; the inexperience of the interviewer meant that a definition of the term 'practical' was not sought. According to the Cambridge Advanced Learner's Dictionary (Woodford & Jackson, Man. Eds., 2003: 971) there are three possible adjectives; *suitable, effective* or *possible*. Might it be conceivable that all three adjectives are relevant in this context?

The terms used must surely be suitable for the task that it is being utilised for. In academia especially, suitability of terminology is used to clarify and help guide a reader to avoid unintended meaning. The words used are suited to the explanation or definition being conveyed. This could however also be viewed as a means of being more effective in that the terms restrict the reader to those intended and not to deliberate too far on the alternatives that may have been possible if another term had been used. Finally, *possible* relates to the ability of the reader to understand the phrase and put it to use as a signifier for their understanding.

It may seem a trivial point at first glance, but the unintended consequences of the interpretation of the vocabulary used in the CRA could be a major issue. It was intended as a practical product, a product that provided some utility for the reader, a product which afforded a crowdfunding campaign the ability to be done, to become reality at some stage. CRA can therefore be positioned as a consequence of seeking to add value for the applicant.

As interviewee Wally stated in response to being asked: "…could you see any value in CRA as a publication for people wanting to crowdfund their visions?", he responded;

> "Yea, definitely, I think it takes people really well through all the thinking they need to do, it's kind of like here's the homework you need to do to be successful, umm, I think there's a nice framework in there, umm, it takes people through a good linear thought process, ah, but it also moves around a bit, so you need to think about lots of different aspects, it's not just like ask the crowd for money and they will give it. So it gets into all the depth of what's really involved… so I think it works on a couple of levels" (Interviewee Wally).

Similarly, interviewee Steve also had the view that the CRA can help to demonstrate some evidence to the funders that project management have done their research and can demonstrate that they have a viable offer;

> "So if you come into a, err, anybody with money and say look I've done my background research and to prove it here's something that I can show you that shows how I have arrived at these decisions, which is exactly what your book does. Now, in order to, all you're doing is reducing the amount of time that an investor has to research you to figure out whether you're capable or not and, so, umm, the finance part of it, umm, is what you're really working on here, umm, I mean there are other things…" (Interviewee Steve).

Steve's inference here is that CRA covers the main funding issues and adds value for investors by allowing the applicant to demonstrate that they have evidence of the worthiness of their project as a sustainable one. Steve comments on the depth of CRA as a tool. As Steve stated:

> [Referring to VC and Business Angel success rates] "So you're really looking at about one or two percent hit rate for them, which is fine, you know, they're happy with that but it's, err, plodding through the dross, err, that they really don't like, and if they can get somebody to answer the key questions early on, it helps them then make a judgement about whether or not they're gonna invest." (Interviewee Steve)

However, from an applicant's perspective, Henry spoke of the complexity of the CRA and that this actually acted as a barrier for him in completing it. This was also commented on by interviewee Sara. This suggests that there may be an issue in that the perspectives of the CRA are dependent upon the reasons for completing it in the first instance.

Funders may be seeking answers that can help them get to the essential facts and knowledge they require in order to reach a funding decision, while applicants are seeking to understand the appropriateness of crowdfunding in their particular situation. For this this group the complexity of both the structure and the language being used may not be appropriate and thus needs adjustment. This is not inferring that the CRA, or the crowdconsent framework, are not of value for the applicant. It is however, inferring that the language used needs adjusting to afford even greater fluency for this group. The framework is valid as a capable tool that delivers a deeper understanding of the crowdfunding process and as such it can be positioned as an appropriate framework for crowdfunding.

5.2 Design: Serious Game

As a starting point for the development of a serious game, it would be useful to identify the mission of the game – what is it that this serious game is trying to accomplish. To some degree this has been answered in that research questions have been arrived at and the background of how these questions were gathered has also influenced the style and type of game to be produced. These questions serve a dual purpose in this thesis as they inform the methodological approaches to be adopted and the objectives of the design and building of a serious game, which is intended to help applicants through simulation of the crowdfunding experience.

This presents a further issue. The crowdconsent framework and the lived experiences of the applicant, and funders, may not be aligned. The literature tells us where the success factors are in theoretical terms but in a lived sense, there remains a question; are these a reality for the applicant? Answering this question meant introducing the researcher's own lived experiences of the process and seeking to confirm these with experts' views. In this regard there were additions to the framework around risk, passion, drive.

Triangulation produced a more robust crowdconsent framework. In this context the crowdconsent framework is fixed in the present. It is static while the write-up process takes priority and the story of this thesis is told. However, this view of the crowdconsent framework suggests a permanently static entity, fixed in time that is undynamic and unable to morph into anything further. The reality is that the crowdconsent framework has evolved and with the respective insights from the literature, the expert's and the researcher's own input the headings and wording changed during this research. Most noticeable are the changes listed below. These created a framework which is more inclusive and more accessible to the general public through subtle changes in language. Figure 20 shows the original headings while Figure 21 shows the changed headings, which are summarised with the bullet points below:

- Ties > Communities
- Culture > Customs
- Infrastructure > Access
- Policy > Regulation

Figure 20: Original Crowdconsent Framework.
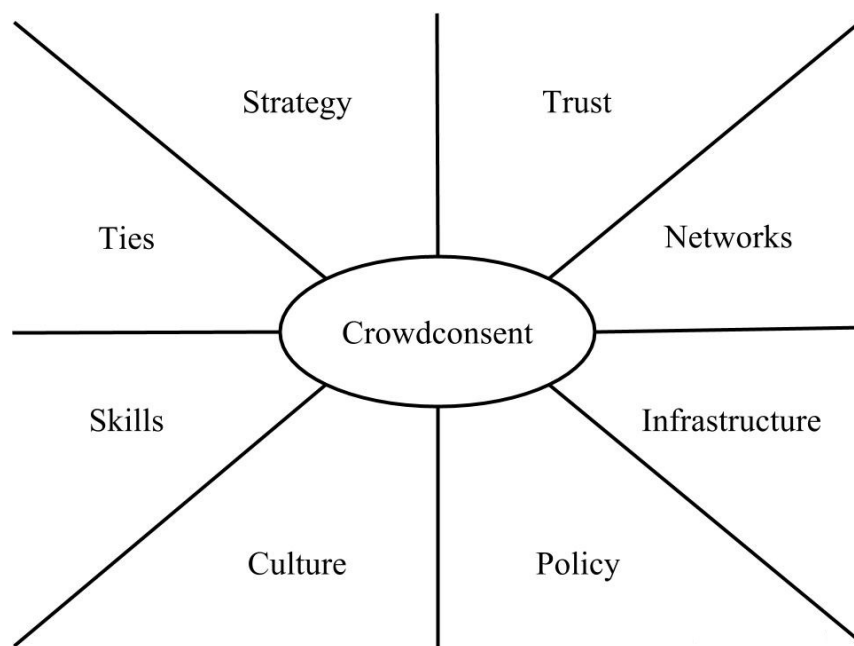
Figure 21: Updated Crowdconsent Framework.
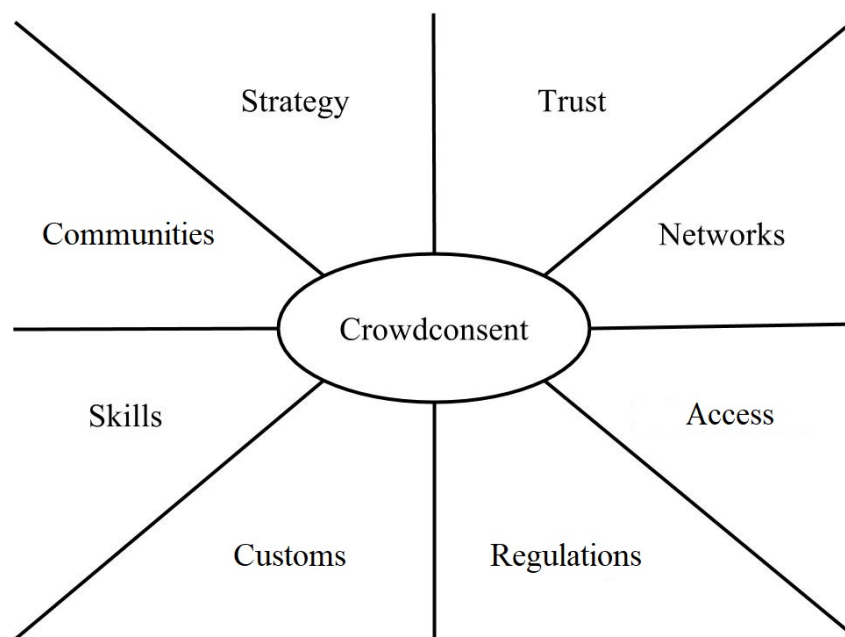
Changes to the headings were deemed necessary following interactions with the respondents at interview and in the emailed questionnaire. Although often complimentary about the basic mechanics of the CRA (Crowdfunding Readiness Assessment) workbook, the actual headings included in the framework needed to be adjusted if they were to be more easily accessible to all.

An issue now arose as to which terms should be replaced and what terms should replace them. Word difficulty is fraught with arguments over the meaning of a word and how to measure the difficulty of words (Aitchison, 2012). This is due in part to the subjective nature of words and partly because words can be argued to be either 'fixed' in meaning or 'fuzzy' (ibid). These two camps have differing perspectives on the meanings assigned to language by the user (ibid). For the fixed camp words are precision tools which are honed through the education of the user and the social context of their use. Consequently, the fuzzy viewpoint holds that words are in a state of flux and depend to a greater extent on the user's social context and the context of the time of the words recall (ibid).

This led to a subjective definition of the headings. In reclassifying some of the headings it was hoped to produce a more reachable set of terms for a general audience. From a subjective stance, this has been achieved and the terms that have been replaced can be justified on this basis. They are now subjectively less academic and more understandable to a wider audience. To further reinforce the need for the changes, each one is outlined below.

Ties was the first term to be changed. In academic circles the term ties is widely accepted as referring to the networks of communities one has in one's social network. These are often cited by Granovetter (1973) and the subsequent work produced on the effect of social ties to access groups or individuals for personal and professional advancement. It was felt that communities were a subtler and generally accepted replacement term.

Culture was also deemed problematic and in conversation with interviewee Wally prior to recording, it was mentioned that the term 'culture' can be quite a difficult term to place in the context of your own enterprise. Based on this a decision was taken to replace culture with customs. The term 'customs' was felt to be a much more focused term and more readily understood by a general public.

The term 'Infrastructure' was changed to 'access', a much more precise term given the content of the section on the crowdconsent framework. A major element of this framework under this heading is the access applicants have to resources and knowledge. Under the old term infrastructure, meaning was felt to be more ambiguous, and so the change was felt warranted on this basis.

'Policy' was exchanged for 'regulation' as policy, it was felt, was far too aligned with the concept of government. Although this is an element of this segment, it was felt that the change to 'regulation' was broader in that it relates to internal processes, law and policy.

As the focus was now turning toward the development of a serious game, a starting point was the players' demographics, the base question being; *"Who is the game being developed for?"* (McAllister, 2015). Answering this relied on both the researcher's experiences as a crowdfunding consultant, supported by the validation of the framework. Extracting the demographic range that had engaged the researcher as consultant the justification for the categorisation below can be made based on empirical evidence from this previous work. Table 26 includes a base summary of motivation for using crowdfunding as a chosen funding route for their project.

Motivation was classed as either commercial enterprise, creative project or social enterprise, possibly with a sustainable economic model behind the latter two. The four groups and their most likely numbers are also given. This is a useful guide to the game's development as it enables the question of who the game is for to be addressed based on an empirical understanding of the market in the near past.

Table 26: Projected Player Demographic & Motivation.

Group	%	Age	Gender	Motive
1	43	30-44	Male	Commercial
2	24	30-44	Female	Commercial
3	24	45-50	Male	Creative
4	9	45-50	Female	Social

Characterising these demographics helped to determine the choice of which crowdfunding model to use as the first exploration of a serious game for developing the fluency of players in the craft of designing and implementing a crowdfunding campaign of their own. Defining these demographics gave the design process several personalities to consider for all layers of the DPE framework.

Furthermore, there has been one other unexpected outcome of this simple taxonomy; the researcher found himself talking to individuals in the target demographic groups. As the design iterations of the game continued, magazine images of the fantasy target demographics were placed on the wall above the table where most of the design work took place. In doing so, the researcher engaged in 'conversation' with the images explaining and justifying game mechanics and dynamics and predicting their reactions to changes in the board's design. The internal dialogue generated during these interactions proved valuable in so far as issues and concerns the researcher identified were vocalised. In doing so, some clarity was gained in the mind of the researcher.

Having identified the 'who' in the game, attention now turned to the learning objectives for these demographics. In working through these learning objectives, the original intention of the serious game developed from being focused solely on the simulation of the comments and questions that may be posed to campaign management in an equity crowdfunding raise, to the addition of a focus on vocabulary and comprehension.

Progress of this kind clearly demonstrates the problem of focusing the learning objectives too narrowly. Further adjustments are possible via the iterative process of design adjustment, resulting in learning objectives that are able to be broadened alongside the mechanics and dynamics of the serious game. The aim should be to make these adjustments more inclusive of new or emerging results discovered through the playtesting phases.

Table 27: Applying Objective Levels to a Serious Game.

Objective	Anticipated Outcome
Global	Players will be crowdfunding fluent.
Educational	Players will better understand comment and question types.
Instructional	Players will confidently be able to respond appropriately to individuals.

Interactions in the real world were often co-created in that the applicant would post their information on the platform in the hope that this would appear attractive to the crowd. The crowd now make comments or ask questions to interrogate or validate the issue being discussed.

Further (secondary) interrogations may also be made to further validate the information provided. In this sense the asymmetrical nature of information is transformed to a more symmetrical understanding by the observing crowd. Co-creation is the ability of the crowd to co-create the interrogation and thus the quality of the understanding by all interested members of the crowd.

To simulate this in a serious game there was an early requirement in the design process for affordances of social interaction. A mechanic was sought that would allow players to interact in such a way that it would simulate the interrogative nature of the real world.

Simulating the real world would require some form of interactivity in the game among players (see 3.8.2 above). As this interactivity was of concern in the design process, it is worth considering how the interactivity of CCBG can be mapped against these criteria. Below is an interpretation of the model with reference directly to the dynamics in CCBG. It offers the reader first responses to the criteria identified by Salen & Zimmerman (2004) and then follows with findings for each category. This data was retrieved from the two-method approach adopted in the play test phase, a questionnaire on the fun aspects of the game and a more holistic dot voting poll on the game.

Table 28: Responses to Salen & Zimmerman's Criteria 1.

Criteria	Function
1 Cognitive interactivity; or interpretive participation	That the game is fun to play and that learning is felt to have taken place. That the competitive element of the game was fun.
Responses	To the questionnaire question "Can people learn from playing the game?" a majority (80%) were positive with 20% stating their response as either 'no' (2%) or 'not sure' (18%). Likewise, the correlation between the questionnaire question "Was the discovery of new vocabulary fun?" recorded 52% as either 4 (35%) or 5 (17%), and the dot voting poll question "Can people learn from playing the game?" as 80% voting 'yes'.
Findings	Based on both the empirical data presented above and the observational notes from the playtests, players liked the game and felt they had learnt something from their playful interactions in the game world. However, 20% in response to the questionnaire were negative suggesting there are some issues with the learning and teaching capacity within the game. This could be from several perspectives; that the game has not reached optimal design for achieving the learning objectives, that the learning objectives were not consistent with the game, that the players were not the correct target player demographic or that the meta-cognitive take away from CCBG were lacking and thus need further analysis. Overall these results support the concept as one of value for those learning about one element of the crowdfunding process and in doing so add some support to the idea that a serious game can simulate the crowdfunding experience.

Table 29: Responses to Salen & Zimmerman's Criteria 2.

Criteria	Function
2 Functional interactivity; or utilitarian participation	That the game is of a good length of play. That the interactions with other players are fun and that these interactions have utility to perceptions of learning.
Responses	There were several references to the game being too long and slow. However, with 82% of the dot votes as either 'fun' (64%) or 'super fun' (18%), there was a strong correlation between the results in the questionnaire and the dot voting method, where 87% marked the questionnaire question: "overall the activity was fun" as 3 or above. 88% marked the questionnaire question "Was the competitive element of the game fun" as 3 or above, while 18% of respondents to the fun question on the dot voting poll marked the game as either not sure (12%) or not so fun (6%). Furthermore, to the questionnaire question "Was the social interaction fun?" 48% scored 3, 33% scored 4 and 19% scored 5, while to the question: "Playing the game, how did you feel?" 28% scored a neutral smiley face and 72% a happy smiley face. *n.b. this latter question was answered by marking either a face with a frown, a face with a neutral expression or a smiley face.*
Findings	Early versions of the game were too long. Comments reinforced this view repeatedly. Having refined the game better results in terms of observed fluency (taken from observation notes) were recorded and the design of the game was a better 'fit' with the learning objectives and expected outcomes.

Table 30: Responses to Salen & Zimmerman's Criteria 3.

Criteria	Function
3 Explicit interactivity; or participation with designed choices and procedures	That the discovery of new vocabulary and that learning via a board game was fun.
Responses	Dot votes found 84% agreed with the question "Did you enjoy the game?" (5% voted 'no', 11% voted 'not sure'). While dot voting poll responses to the heading "Difficulty level" were: 1% 'too easy', 83% 'nicely challenging' and 16% 'too challenging'. Dot vote poll in responses to the heading "Clarity of rules" votes were as follows: double smiley face, 20%, smiley face, 68%, neutral expression, 10%, frown face, 2% and double frown face, 0%. *n.b this latter section offered the player the choices of: double smiley face, single smiley face, neutral expression, single frown face or double frown face.* To the questionnaire question "Was the discovery of new vocabulary fun?" 85% of respondents scored 3 or above (33% scored '3', 35% scored '4' and, 17% scored '5'). To the questionnaire question "Was it fun learning in this way?" 93% scored 3 or above (25% scored '3', 34% scored '4', 34% scored '5').
Findings	Observational notes and the empirical findings from the questionnaire and dot voting poll methods support claims that the game afforded utility for the players on their learning journey. However, the dot voting poll question "What form would you like the game to take?" produced an interesting set of results with an overwhelming number of votes for a digital version (58% of the votes). Incorporating the design choices in terms of the dynamics and mechanics of the game would need deeper consideration in order to maintain these positive elements in a digital version.

Table 31: Responses to Salen & Zimmerman's Criteria 4.

Criteria	Function
4 Beyond-the-object-interactivity; or participation within the culture of the object	That confidence is felt to have grown in this topic and that a player's awareness of the concerns and types of questions asked by the crowd has been developed. Those players feel able to address the issues and concerns raised by the crowd.
Responses	Reported that the players improved on their lexical knowledge, public speaking / team work skills and the basics of crowdfunding.
Findings	Difficult to report with any certainty as the application of this learning journey for the player is only visible once the player has attempted to produce a crowdfunding campaign and gone 'live'. The training and educational components of the game become an empirically observed unit. Until this event, the learning objectives remain objectives and cannot be reported as learning outcomes – there simply are no outcomes to report. Session summaries made directly after play tests revealed that the players felt they had learnt about this narrow aspect of the crowdfunding process and that they had expanded their knowledge of vocabulary in the context of crowdfunding / business. This aspect is perhaps the greatest weakness in the research. It is a direct response to RQ3 (How can the simulated game educate the applicant in making appropriate decisions in the real-world scenarios?) and is, in effect, only partially answered question in this research.

5.2.1 Playtest Introduction

Ethics committee approved playtesting was granted by University of Southampton (ethics number 24431) which enabled the recorded playtesting phase to begin. Four versions of the Crowded Comments Board Game (CCBG) were tested and these are listed in the sub-sections below.

This formed the first phase of a triangular approach to developing a serious game. Players were invited to express their opinions about the game both during and directly after play first via a questionnaire, then followed by a dot voting poll on a sheet provided for each table (Gray, 2010), which in turn was followed by a short round of questions about the game. Reflective summary notes were also then written by the researcher post session. It should be noted that the players were not necessarily seeking to crowdfund their vision. The intention was to gain a robust number of players (n = approximately 100) to play and give feedback about the game's mechanics and dynamics.

Figure 22: Methodological Timeline of Playtests.
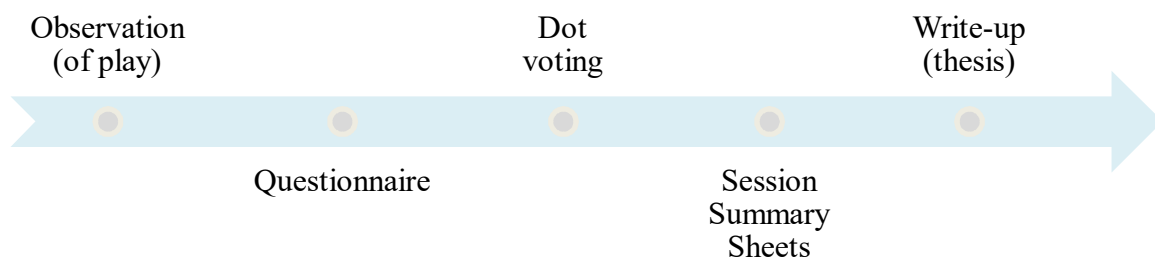
The final playtest number was 98, a very close approximation to that which was originally sought. Players were composed of 23 males and 75 females in the age range 20 to 45. All were students studying at either a UK private language school (n = 43) or undergraduates on various programmes at an arts faculty with a Russell Group University (n = 55). The most common verbal report from these players was that the game got boring as play was too long. One player commented that the interactivity in the game started to dwindle as play progressed. When asked at what point this started, this player was unable to pinpoint an exact point in the game, but suggested it was toward the end of play. This concurred with some of the feedback from the players themselves.

Generally, it was verbally reported that interaction was a positive aspect of the game, as was the comprehension and use of new vocabulary. Other points noted which were considered beneficial to players were the ability to speak publicly and argue a specific point, using their team-work skills (both supported interactive aspects of the game) and learning about crowdfunding itself. Several players commented that crowdfunding was a topic that they were aware of but had not received any formal instruction in.

These are valid points for consideration in further developing CCBG. The purpose of the playtest cannot be lost in the planning and execution of the testing. Bringing players together to play determined the basic premise and objectives of the game, while helping the designer to understand player interpretations of its dynamics and mechanics (Jenkins et al, 2003).

Five playtests were created using four versions of CCBG, and informing playtests two to five, some contingencies of playtesting the game were taken from the *Board Game Designers Forum*. One forum participant (Krone9) was particularly insightful about their experiences of playtesting their board game (a Dungeons and Dragons genre board game).

Krone9's insights are paraphrased below and the responses are given in the context of CCBG against these criteria:

Table 32: Krone9's Insights & CCBG Responses (Krone9, 2017).

Kron9's Observations	CCBG Response
S/he found playing for too long in short periods exhausting. [Krone9 is referring to the observer participating as a player].	Observer did not participate as a player.
When s/he was a player there was a tendency to go easy on other players, this resulted in negative feedback.	As the observer was not a player there was no tendency to 'go easy' on other players.
Learn how to teach the game. Krone9 found that as the playtesting progressed so s/he was becoming more adept at conveying the nuances of the rules.	The game was outlined to the player verbally but the official rules were given on paper.
Krone9 made a point of avoiding debate with players at the time the feedback was received. This allowed time for reflection and deeper thought. This concurs with Ashton (2009).	There was a quick-fire discussion at the end of each game. This fed into the reflective write-up immediately post play (session summary sheets).
Having feedback cards (or sheets) ready simplified the process and helped focus the players' feedback.	The questionnaire and dot voting poll were both prepared prior to the playtests.
Gain permission of the players to contact them with updates and information.	Not applicable - game still in its infancy.
Hard feedback is vital. Encourage criticism from your players and ask questions that have been carefully crafted.	As part of the research methodology critiques were sought. Standardised questions were asked in both the questionnaire and the dot voting poll.
Try to get someone else to teach players how to play your game and do not interfere with their instructional style. There are lessons to be learnt through the observation of others interpretation of the game.	A valid observation, but one that was not an element of the CCBG playtest. The reason for this was that the rules were codified and not verbally delivered.
Test different player numbers to see what effects this has on the game.	Teams were composed differently, partly by design but also organically. Players chose their seating arrangements.
Love your game. Your enthusiasm will be detected by others and, likewise, your lack of enthusiasm will also be detected and reflected.	Player engagement was positive at all touch points. The researcher is inclined toward a positive disposition.

In designing and creating a game for any context game builders are presented with an opportunity to introduce elements that can provide a novel angle for interpretation of a topic. This was indeed the case with the Crowded Comments Board Game (CCBG). As a conceptual system the game uses simple mechanics that juxtapose the complexity of the questions and comments that can be raised by the crowd in a real crowdfunding campaign.

Designing the game was less reliant on the forms of the questions that were to be used in the game mechanics and more reliant on the learning objectives being a good fit with the intended game dynamics. This fits with Marsh's (2011) statement that the measurement of the "quality or success of serious games is characterized by the degree to which purpose has been fulfilled." Fun was a stated purpose of the game and the balance between the aspects of learning and fun was a measurable outcome via playtest observations, dot voting poll and questionnaire.

This iterative process meant that these responses, critical or otherwise, were taken account of and informed newer editions of the game. This knowledge was afforded via an inductive methodology which informed the original insight and led to the more concrete set of questions addressed in this thesis being developed. Mixed methods were employed as the exploration of the two cultural products (workbook and game) became the focus.

Table 33: Playtest Dates & Player Numbers.

Playtest	Date	# of players
1	25/05/2017	6
2	12/07/2017	27
3	26/07/2017	16
4	16/10/2017	15
5	17/10/2017	34
Grand Total		98

5.2.1.1 CCBG V1 / PT 1

Highlights

- 6 players (4 females / 2 males)
- Tile count 67

Initially each tile on the game board had a value on it and so when players landed on these tiles they received that value. The questions were set on separate cards and players were asked to invent a fantasy response to the question. The green C/Q cards to the left of centre on the board were the comments / questions to which the player was expected to respond.

Figure 23: CCBG Board V1.
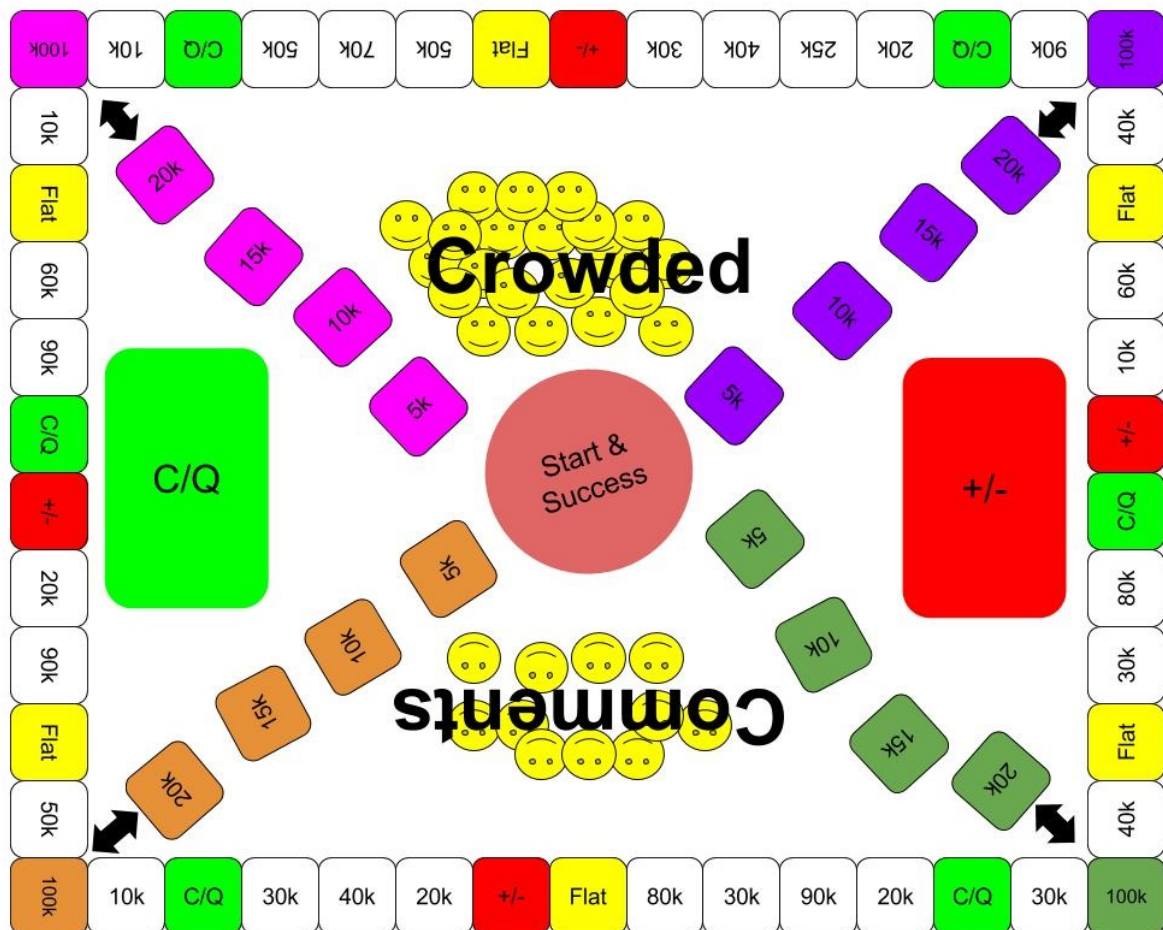
The red +/- cards, to the right of centre on the board, were chance cards where players were awarded for their campaign reaching certain milestones or money was deducted for errors and mistakes. These were random events and reflected the nature of crowdfunding where there are times when events are out of the applicant's control.

These events can be positive or negative and can mean more interest being generated or members of the crowd withdrawing their support for the vision. Tiles were colour coded and as players moved around the board they landed on a tile with a specific function as detailed below:

Table 34: V1 Tile Functions.

Tile	Function
White	Receive value on tile
Yellow	Receive nothing and play continued with next player
Green	Respond to a question drawn from a pile.
Red	Chance card, receive additional funding or deduct funds.
Corner	Receive the exceptional value on that tile.

The aim of the game was to be the first player to reach the centre 'Start & Success' tile having raised £500,000 or more. This tile was also the starting point for the game and players would earn the values on the coloured tiles as they moved from the central tile to the outer ones. The principle behind this mechanic was to try and simulate a race.

Players would race one another and try to get back to the central tile as quickly as possible and players could only start their race home once they had reached their coloured corner tile or were able to pass it on that move. This meant that a player who had, for example, £400,000 in their fund and was approaching their coloured corner could either decide to play another round or head for the central tile and risk getting home with less than £500,000.

Players also had the option of playing up and down the coloured home run corridor as they accumulated enough wealth to head for the central tile. They were able to traverse this area as often as they liked in any direction. In the event all players got back to the central tile but the first player arrived some ten minutes before the last player. The last player had also failed to reach their £500,000 target.

Social interactions were created mainly through the value of the green C / Q cards. Players had to negotiate firstly the meaning on these cards (vocabulary) and then negotiate between them the value to offer the player who had landed on the green C / Q tile and responded to the question. The maximum they could offer was £5,000 and the minimum, zero.

Changes were needed as players reported that the values were too random and the colours of the board also needed to better define the purpose of the tiles and the questions. On exit, players were also commenting on the length of play – the game was simply too long. This is reflected in the low scores within the questionnaire, particularly the question *Was the discovery of new vocabulary fun?* Two players graded this question as '2' – i.e. poor. The results of the questionnaire are shown below in tabular format:

Table 35: V1 PT1 Questionnaire Results.

DK = Don't Know 1 = low & 5 = high	DK	1	2	3	4	5
Was the competitive element of the game fun?	0	0	1	2	2	1
Was the social interaction fun?	0	0	0	4	2	0
Was the discovery of new vocabulary fun?	0	0	2	2	1	1
Overall, was the activity fun?	0	0	1	3	2	0
Was it fun learning in this way?	0	0	1	3	1	1

	Frown	Neutral	Smile
Playing the game, how did you feel?	0	2	4

Version one scores relatively low for each of the fun factors of the game. Even the idea of it being fun to learn this way only managed to gain 50% rated as three. However, the smiley face, in response to players feelings while playing, was ranked higher (4 players marked the smiley face with the remaining two neutral), suggesting there were some positive feelings in the game. There were several comments on exit that learning in this way was preferred to traditional classroom lessons.

Only six players played this initial game and as a first foray into the design and mechanics of the game it scored poorly and generalising these results would probably have meant the project being terminated at this point, especially as a commercial entity. But as the number of players was so low and the fact that the smiley face response didn't appear to match the social interaction responses it was decided to continue, but with a fresh reiteration of the boards design. Version two would use less colour and make greater player efforts with the questions. Asking players to address a question on each turn would, it was thought, add greater weight to the interaction being sought while also better aligning the game with the learning objectives.

Table 36: V1 PT1 Dot Voting Poll Results.

Fun				
Super fun	Fun	Not sure	Not so fun	Epic fail
0	4	2	0	0
Difficulty Level				
Too easy		Nicely Challenging		Too challenging
0		4		2
Clarity of rules				
2 x smiles	1 x smile	Neutral	1 x frown	2 x frown
2	2	2	0	0
Can people learn from playing the game?				
No		Not sure		Yes
0		2		4
What form would you like the game to take?				
Digital		Board	Mixed	Not sure
3		2	1	0
Did you enjoy the game?				
No		Not sure		Yes
0		2		4
Would you recommend the game to someone you know who wants to crowdfund a project?				
No		Not sure		Yes
0		2		4

Taking account of the comments from the players on the exit interviews and the session summary sheets the design of the board and base mechanics were re-examined. This concept worked, six scored the competitive element of the game well (five players scored three or above) and there were only two neutral scores relating to enjoyment of the game.

Likewise, a majority (four players) thought people could learn from playing the game with two scoring 'not sure'. The final question was also considered to be one that would help to assess the true extent to which players felt they could trust the game to deliver knowledge transfer. Originally this question asked if the player would recommend the game to '*someone who wanted to crowdfund*'. However, by adjusting the question and adding the personal reference to '*someone you know who wants to crowdfund a project*' it was felt that players may be more reflective in their responses and provide a more personalised response. The question became more active seeking to enquire about the player's own personal network.

These results were far from perfect and a decision was taken to redesign the board while trying to retain the mechanics and dynamics of the original concept. Although three players had stated that digital would be a preferred 'form' for the game, time restrictions meant that the redesign would need to be a board game. Beside these restrictions it was also felt that the purpose of testing at these stages was not to produce a finished product but to concentrate on adjusting the mechanics and dynamics of the game, including board aesthetics. In doing so, the game would better fit the learning objectives and produce a product through which players actually felt they had fun while learning.

The highest score was in the questionnaire and was a response regarding social interaction in the game. This correlated with the four players who marked the game 'fun'. Although a low base to assume that the mechanics and dynamics had worked, essentially it was encouraging and as reflected in the session summary sheet for this playtest, the researcher was happy and had observed social interaction and laughter (fun) during the session. It was also noted (see Appendix B1) that the speed of the game increased as player confidence increased. However, it was noted that the players had reported that the game was too long and this is thought to be the main reason the game did not score as highly as expected.

The issue appeared to be a combination of game play being too long and the vocabulary being too difficult. These moments were noted when the game was suspended as players digested the question and composed, internally, their responses. At other times it was noted that players had reached for their mobile devices and were checking meanings using electronic dictionaries. This was confirmed when players were asked if that had indeed been the purpose.

It was also noted that after the players being observed had consulted their mobile device they confirmed or disputed the meaning that had been proposed by other players. This is significant as several comments were made with reference to the difficulty of the vocabulary.

A more interesting line of enquiry here would have been to test the confidence of the players once they had checked the meaning of the vocabulary. Did they now feel greater empowerment and thus in a better position to challenge other players' interpretations or responses? The players were not from a business background but knew each other prior to the playtest. They were all second-year undergraduates studying fashion. One female in the group seemed to have a better comprehension of the vocabulary and would often guide others if they were struggling. The group's dynamics were also fairly conflictual at one point where a male seemed to be trying to state their dominance over the group with anecdotal stories of them using social media to promote a business they had worked for. However, the most consistent in the group for providing funding was this same female.

Generally, the group dynamics were good, with support offered by all players at various stages of play. Even when conflict was noted it was kept within the context of the game and frequent references were made to the vocabulary. Observation of play afforded the opportunity to experience first-hand the player's frustrations and excitement of play. There was also the opportunity of discovering new patterns or situations arising during play.

For example, in V1 PT1, there was one female player (FP1) who was quick to help others and come to the aid of players who seemed to be struggling. In the same group it was noted at the beginning of play that one of the males (MP1) responded quite harshly to some queries over vocabulary. MP1 seemed almost aggressive when the other players failed to recognise or understand the vocabulary. But interventions by FP1 seemed to adjust MP1's responses and it was noted that he seemed to be less frustrated with other players as gameplay progressed.

Negative comments were made about the game's dynamics in that players were expected to give money away to opposing players. This seemed a little paradoxical to a few of the players who felt they were being penalised for doing nothing wrong. But chance is a factor in the real world of crowdfunding. Reflecting on this it was felt too important and so a decision was taken to keep this element of the game's dynamics in future iterations.

Reference to the value of the questions was also critical of the mechanics and dynamics in that the values did not reflect the difficulty of the question being asked. The more difficult the question, the comments suggested, the higher their value should have been. Although this is a valid point, measuring the difficulty level of the question is a highly subjective exercise. It is also true that in the process of crowdfunding it is virtually impossible to predict the questions the crowd will ask and whether the crowd hold the worthiness of the question equally. Studies into word difficulty highlight the issues of such an attempt (Aitchison, 2012). This also reflected the decision to change some of the headings in the original crowdconsent framework (see 5.1 above) where the choices were always open to further questioning.

The final consideration is the learning objectives which were observed in this playtest as detailed below. Two sets were created and although these are far from perfect in their execution, they did, however, provide some basis for judging whether or not the learning objective had been observed during play. Two were created, one for the player as responder to the question, and one for player as interrogator, the weaknesses of this method are given further attention in the discussions in section 5.3 above.

Table 37: Observed Learning Objectives - Player as Responder (V1 PT1).

Cognitive	Learning objective	Observed
Remember	1. Recalling stories and significant events appropriate to response.	2
Understand	2. Exemplifying chosen responses as most appropriate for context.	2
Understand	3. Inferring the most appropriate response based on the context.	1
Understand	4. Explaining responses when probed within the given context.	3
Apply	5. Implementing an appropriate language response in the context.	3
Analyse	6. Differentiate the responses to nuanced contexts.	1
Evaluate	7. Critiquing and selecting appropriate responses in context.	1
Create	8. Producing convincing responses appropriate to context.	1

Table 38: Observed Learning Objectives - Player as Interrogator (V1 PT1).

Cognitive	Learning objective	Observed
Remember	9. Recognising relevant types of questions to ask.	1
Remember	10. Recalling previous responses from players.	1
Understand	11. Interpreting the true sense of responses.	1
Analyse	12. Differentiating between relevant and irrelevant responses.	3
Evaluate	13. Checking by asking primary and secondary questions.	4
Evaluate	14. Critiquing appropriate primary and secondary questions to ask.	2
Create	15. Generating questions and probes.	2*

*Learning objective 15 was noted twice on the original sheet.

There was a question mark in the original notes on the second observation.

The researcher witnessed some questioning and probing but was unsure how to grade the depth of this probing, it was quite superficial, but it was present and so the researcher recorded the event on the tick-sheet.

This served to highlight one of the weaknesses of this method. It remained very subjective in terms of the observational biases present with the researcher. It also failed to adequately provide any guidance on the relevance of the learning objective to the context within which it was produced / observed.

5.2.1.2 CCBG V2 / PT 1

Highlights

- 27 players (20 females / 7 males)
- Tile count 128
- Business Profile Cards introduced (see Appendices A1.2 and A1.3).

Taking account of the critical comments from playtest one the board shape changed to a more circular board design. V2 retained the values on the tiles but now associated this value with a question, rather than simply assigning a gift for landing on the tile. If a player answered the question well, they could potentially receive the full value on their tile. If other players judged the response to be poor, they could offer a lesser amount (determined collectively by the players).

Figure 24: CCBG Board V2.
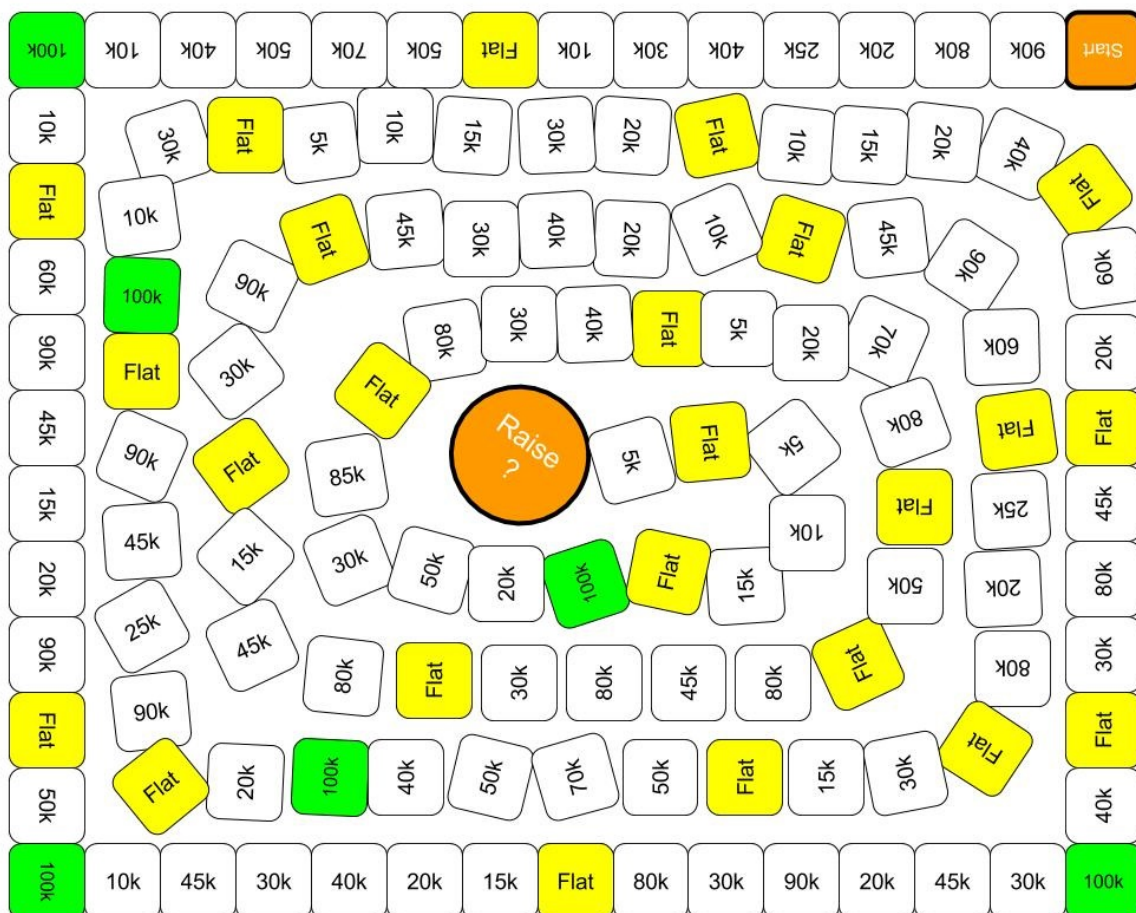
This change was reflective of a non-linear approach to crowdfunding. The tiles in version two started even on the outer edge and then become more jumbled as a player progressed to the inner circles. The hope was that this might reflect the uniqueness of the questions which may be asked in a real-world scenario. Yellow flat tiles were retained but the target raise of £500,000 was scrapped. It was felt that players with the largest pot at the end of play (when they all reached the centre tile) would determine the winner or winning team and that this was a sufficient state for the winner to be determined.

Players also had a chance of landing on the green £100,000 tile and for this their response would need to be pretty good in order for the opposing players to award them this higher amount. The red chance cards were discarded as the board now had a stronger element of chance embedded in it as players landed on the tiles – the amounts were more frequent and more diverse in terms of the values assigned to each tile. The hope was that this board would be much faster and create tension among players as they were now expected to answer a question on every tile they landed on.

Players also had a greater chance of gaining traction with their funding as the smaller amounts were now more frequent. Business profile cards were also introduced to provide some background information on a fantasy business (see Appendix A1.2 below). These had much missing information and it was down to the player to create the missing information in response to the green question card. This echoes Ranchhod & Gurău (2007: 245) in that the learning can be seen as an allegorical learning experience where the learner is in the process of developing their own "stories and fantasy webs" to surround their business. This was implicitly an element of player engagement, which was now focused on four elements in the game:

- Negotiation of meaning (of the question)
- Delivery of a convincing response (fantasy creation)
- Secondary interrogation
- Negotiating the value of the response.

This worked much better and several references were made in the session summary sheet about the fact these young players (early twenties) were all able to work in their teams and support one another with the vocabulary. They also tended to argue much more than the players in the previous playtest. Was this a result of the new configuration of the board or the nature of the players themselves, or the fact that they were now playing in several teams and there was a certain amount of buzz in the room?

These questions remained unanswered. However, the results of the questionnaire were much more encouraging with more than half the group grading the fun elements as '3' or above. Overall, in response to the question *Playing the game, how did you feel?* 78% gave a smile while 22% were neutral, a much stronger result.

Table 39: V2 PT1 Questionnaire Results.

DK = Don't Know 1 = low & 5 = high	DK	1	2	3	4	5
Was the competitive element of the game fun?	0	1	1	13	6	6
Was the social interaction fun?	0	0	0	11	7	9
Was the discovery of new vocabulary fun?	1	0	4	7	9	6
Overall, was the activity fun?	0	1	3	7	12	4
Was it fun learning in this way?	0	1	1	7	9	9
Playing the game, how did you feel?	Frown	Neutral	Smile			
	0	6	21			

Questionnaire results score better with more players and with some subtle differences in the games mechanics and dynamics the results were a slight improvement on all fun aspects. The biggest disappointment was the score in the social interaction layer (question two). Version two had not managed to achieve a greater number in the four and five columns. At exit there were recorded comments which referred to the game aesthetic; one female player commented on first sight of the game, which for her, had produced a negative feeling, but when she started playing, she found she enjoyed the game.

This would suggest the look of the board might have been aesthetically displeasing. There was some agreement on this comment from a second female. When probed they mentioned the number of tiles but not the linear to non-linear organisation of the tiles on the board.

There were also several comments referring to the length of play, which again came as a surprise to the researcher. This group had quite quickly got into the game and all teams had finished within an hour and a half of play. This seems to be reflective of the question: *Was the competitive element of the game fun?* In this question the results were largely in the negative with 44% of players scoring four or above, 48% scoring three and 8% scoring two or below. Competitiveness demands that players remain focused in order to feel at their optimum during play, if game play is too long perhaps this is why this element is scoring lower than anticipated.

Further negative comments were made regarding the chance elements in the game. Values did not relate to the question they were being asked. This seems to revolve around the levels of difficulty the players were associating with the vocabulary. There was a general agreement among the players that there should be a sheet provided with explanations of the vocabulary they are going to encounter.

This suggestion was given much deliberation following this playtest. If players were encouraged to use dictionaries would this compensate? If vocabulary sheets were provided would this detract from the social nature of the interactions the game is trying to achieve? Are there any differences in having a dictionary accessible to the players and having a vocabulary sheet provided?

These questions were perhaps some of the more difficult to address. It was decided a vocabulary sheet might detract from the learning objectives in that by providing players with the correct answers it would eliminate any opportunity for deliberation over meaning. Players would have the 'correct' answer if meaning were sought in the context of the question.

Access to dictionaries also meant a much broader set of meanings would be available to them. Part of the designed-for social interactions in the game's dynamics was the opportunity to negotiate the meaning of new vocabulary. A vocabulary sheet would greatly reduce this opportunity for engagement between players.

Furthermore, the researcher decided this device (a vocabulary sheet) would reduce the impact of the learning objectives for responders (responder learning objectives two to eight – see bullet point list below) negatively. These learning objectives were:

- Understand: Exemplifying chosen responses as most appropriate for context
  Inferring the most appropriate response based on the context
  Explaining responses when probed within the given context
- Apply: Implementing an appropriate language response in the context
- Analyse: Differentiate the responses to nuanced contexts
- Evaluate: Critiquing and selecting appropriate responses in context, and;
- Create: Producing convincing responses appropriate to context

Given these justifications a decision was taken not to introduce a vocabulary sheet but to encourage players to access dictionaries to infer meanings during play.

Table 40: V2 PT1, Dot Voting Poll Results.

Fun				
Super fun	Fun	Not sure	Not so fun	Epic fail
8	11	4	4	0
Difficulty Level				
Too easy		Nicely Challenging		Too challenging
0		23		4
Clarity of rules				
2 x smiles	1 x smile	Neutral	1 x frown	2 x frown
5	19	3	0	0
Can people learn from playing the game?				
No		Not sure		Yes
1		8		18
What form would you like the game to take?				
Digital		Board	Mixed	Not sure
13		8	4	2
Did you enjoy the game?				
No		Not sure		Yes
1		3		23
Would you recommend the game to someone you know who wants to crowdfund a project?				
No		Not sure		Yes
2		2		23

Interpreting and comparing these results with the first playtest are difficult as the player numbers were much lower in the first playtest. This is also a fresh board with similar but not identical game mechanics and dynamics. This exercise is, however, useful in gaining some insight on a quantitative level of the players' interpretations of the game. Significantly the final question saw a 15 % negative response as equally a 'no' or 'not sure'. This high negative response is thought to be a reflection of the game's length, it was still too long.

As the researcher noted in his session summary sheet for this playtest (see Appendix D below) he felt adding more to the game's dynamics would create greater value for the player. Adding more to the game in terms of tile numbers afforded greater opportunity for the player to respond to a question and gain money (points). In reality this acted more to over-complicate things, made the game too lengthy and reduced the appeal to the players. It is possible that this was reflected in many of the negative scores.

In response to the question '*Did you enjoy the game?*' 15% were again negative in their responses. However, 45% liked the format (i.e. the fact it was a board game) and overwhelmingly the responses to the question '*Can people learn from playing the game?*' were positive. This would suggest that the board per se is not an issue, nor are the dynamics of the format of the questions. This is confirmed in the questionnaire where 55% responded positively (scoring four or five) to the question '*Was the discovery of new vocabulary fun*?'

Surprisingly, changes in V2 produced quite similar results as had been produced for V1. This was positive in that the general figures had not reduced; however, given the effort and time spent in producing the changes for V2, this was a little disappointing. Session summary sheets also noted some surprise at the depth of the arguments that were produced during this playtest. Players interacted well even though they had been split into adversarial teams. The room was set up with quite large teams in one group (three teams of three players). The tables were arranged in the room with three tables of six players and a larger table with nine players.

This was a much bigger group than playtest one and so it was difficult to capture all the instances of the learning objectives being met. However, they were all observed and noted as can be seen below in tables A2.3 and A2.4, the limitations of this method are given further depth in section 5.3 above.

Given the size of this group (27 players) the recording of instances where the learning objectives were observed appears low. But given the weaknesses in this method it is perhaps more a case of accepting that these instances had occurred and discounting the frequencies as an inaccurate by-product of the exercise.

Table 41: Observed Learning Objectives - Player as Responder (V2 PT1).

Cognitive	Learning objective	Observed
Remember	1. Recalling stories and significant events appropriate to response.	4
Understand	2. Exemplifying chosen responses as most appropriate for context.	1
Understand	3. Inferring the most appropriate response based on the context.	3
Understand	4. Explaining responses when probed within the given context.	2
Apply	5. Implementing an appropriate language response in the context.	1
Analyse	6. Differentiate the responses to nuanced contexts.	1
Evaluate	7. Critiquing and selecting appropriate responses in context.	1
Create	8. Producing convincing responses appropriate to context.	2

Table 42: Observed Learning Objectives - Player as Interrogator (V2 PT1).

Cognitive	Learning objective	Observed
Remember	9. Recognising relevant types of questions to ask.	3
Remember	10. Recalling previous responses from players.	1
Understand	11. Interpreting the true sense of responses.	2
Analyse	12. Differentiating between relevant and irrelevant responses.	4
Evaluate	13. Checking by asking primary and secondary questions.	3
Evaluate	14. Critiquing appropriate primary and secondary questions to ask.	1
Create	15. Generating questions and probes.	5

5.2.1.3 CCBG V3 / PT 1

Highlights

- 16 players (10 females / 6 males)
- Tile count 60 + 1 central tile

This was an even more radical design than V2 had been. V3 saw the questions inserted directly onto the tiles. Separate value cards were created and placed in a pile, players took one on each turn and this determined the value of the question. The values on these cards were 10k, 20k, 40k or 80k. The red chance cards were also re-introduced. This was a direct response to several comments that had been made at the exit interviews for V2, where several players had mentioned that an element of chance was missing and might have given the game a more opportunistic feel.

Figure 25: CCBG Board V3.
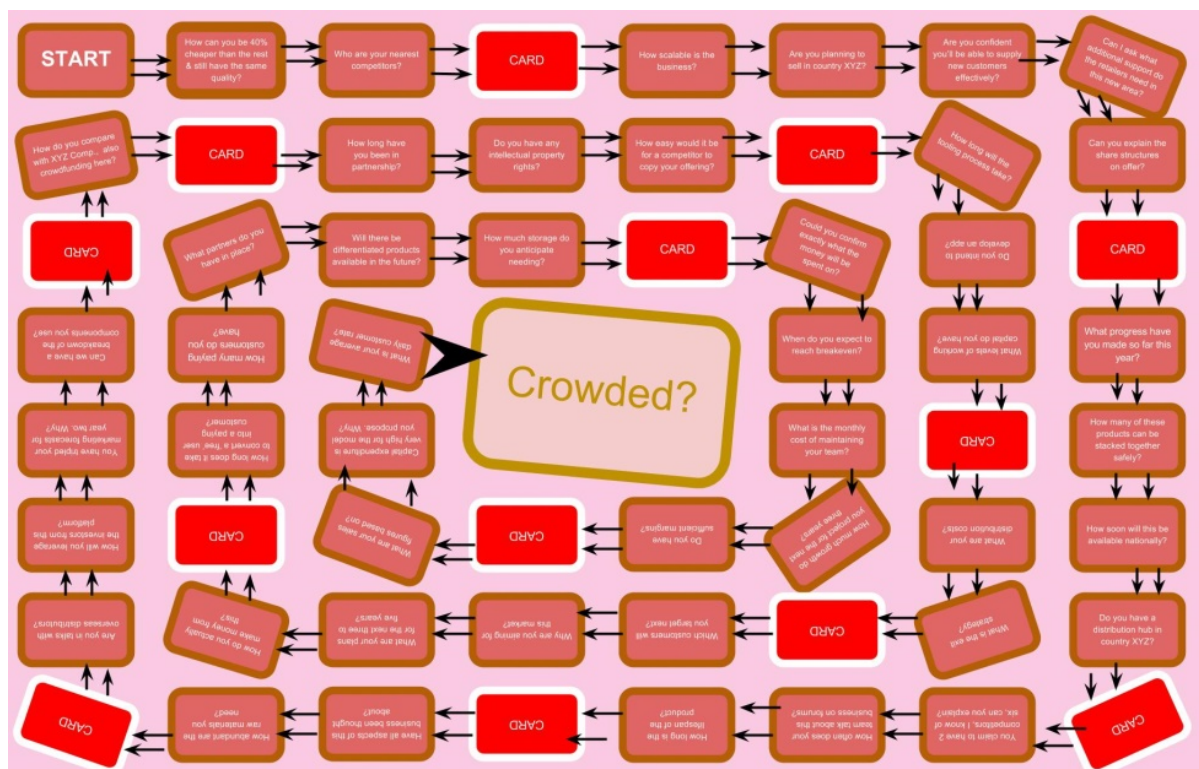
Business profile cards were repeated from V2 PT1, leaving plenty of scope for the players to use their imagination and add fictional details of their own where needed in response to the questions.

Improvements had contributed to a better player experience, but to what degree is difficult to determine. Wrongly attributing these improvements in score to particular changes made in this version might result in a decline in future versions.

Table 43: V3 PT1 Questionnaire Results.

DK = Don't Know 1 = low & 5 = high	DK	1	2	3	4	5
Was the competitive element of the game fun?	0	0	1	7	4	4
Was the social interaction fun?	0	0	0	6	6	4
Was the discovery of new vocabulary fun?	0	0	3	3	8	2
Overall, was the activity fun?	0	0	1	5	8	2
Was it fun learning in this way?	0	0	0	5	7	4

Playing the game, how did you feel?	Frown	Neutral	Smile
	0	5	11

Surprisingly these scores did not really reflect the improvement in the baseline score. Only the last two questions questionnaire question number 5 (*Was it fun learning in this way?*) and questionnaire question number 6 (*Playing the game, how did you feel?*) saw any real improvements. These did however correlate with survey (dot vote) question on *Fun* which saw a 100% score and in '*Super Fun*' and '*Fun*' and, likewise, survey (dot vote) question *Did you enjoy the game?* scored '*Yes*' - 100% positive.

A change that was introduced to the mechanics of the game was the choice of the player to keep their funding levels secret from the rest of the players. They were supplied with an account sheet on which to record their funding, and this led to several players commenting on exit on how they liked this aspect. One male commented that he had liked having to concentrate on his own income level and this made the game more of a challenge. It can be assumed that in combination these adjustments had made for a better game experience and this was reflected in the more positive overall feedback.

Table 44: V3 PT1 Dot Voting Poll Results.

Fun				
Super fun	Fun	Not sure	Not so fun	Epic fail
2	14	0	0	0
Difficulty Level				
Too easy		Nicely Challenging		Too challenging
0		14		2
Clarity of rules				
2 x smiles	1 x smile	Neutral	1 x frown	2 x frown
3	13	0	0	0
Can people learn from playing the game?				
No		Not sure		Yes
0		0		16
What form would you like the game to take?				
Digital		Board		Mixed		Not sure
10		4		0		2
Did you enjoy the game?				
No		Not sure		Yes
0		0		16
Would you recommend the game to someone you know who wants to crowdfund a project?				
No		Not sure		Yes
0		2		14

Two results stand out as exceptional in this round, survey (dot vote) question C*an people learn from playing the game?* and survey (dot vote) question *Did you enjoy the game?* both scored 100% and with just votes as 'Not Sure on survey (dot vote) question *Would you recommend the game* this is a positive correlation with the changes made to the game's mechanics. Another interesting aspect of this playtest was survey (dot vote) question *Clarity of Rules*.

One group particularly seemed to struggle with comprehension of the games rules and were supported by another group who had interpreted the rules successfully. This meant this group were a little later than the others in getting started. However, no comment to this effect was made at exit, or reflected in the dot voting poll.

It was also noted that several players struggled much more than in previous playtests with the vocabulary. yet only two players voted in the poll 'Too Challenging' for survey (dot vote) question *Difficulty of Rules*. It may be that short-term memory had failed these players or that the buzz in the room had skewed these results with a positive bias. Two female players also mentioned at exit interview the competitiveness of the game and that they thought this was a negative aspect. They asked if it might be possible to reduce this aspect in some way.

This is counter to the male comments previously about secrecy in the accumulation of wealth (the winner was the player with the most after all players had made it to the centre tile). In the session summary sheets for this playtest (see Appendix B3) the researcher noted this aspect but then related this to the unintentional outcomes of the game. On reflection this may have been a mistake. The issue was not with the intentions of the game but rather the mechanics that enabled this aspect. These points may have been lost in translation.

Lastly, there were several comments about the length of play. This issue has not been resolved in this playtest and indeed the board does seem to have added to the problem. The intention was to move away from the players having to choose two cards from two separate piles – one for the question and one for the value. This was the base logic behind the insertion of the questions onto the board tiles.

However, in doing so, the board itself had become over-complicated, with an array of questions scattered around the board with the tiles. Although no comments were explicitly made about this, one colleague who had seen past iterations commented she liked this board more, so players may have been overwhelmed when they first encountered this board. They were already aware of the challenge they faced as they had read the rules. Now they could also see some, if not all, the questions they might face. Would this be capable of inducing anxiety on the behalf of the player? It is certainly possible, but the results would suggest otherwise.

Table 45: Observed Learning Objectives - Player as Responder (V3 PT1).

Cognitive	Learning objective	Observed
Remember	1. Recalling stories and significant events appropriate to response.	3
Understand	2. Exemplifying chosen responses as most appropriate for context.	2
Understand	3. Inferring the most appropriate response based on the context.	4
Understand	4. Explaining responses when probed within the given context.	5
Apply	5. Implementing an appropriate language response in the context.	3
Analyse	6. Differentiate the responses to nuanced contexts.	2
Evaluate	7. Critiquing and selecting appropriate responses in context.	2
Create	8. Producing convincing responses appropriate to context.	2

It was also noted that comments had been made about the utility of the game in terms of future recollection for the player. There is no reinforcement after the game has been played. A player's strategy for addressing the questions, their comprehension and their confidence in learning to use appropriate language in these contexts may all be compromised if the learning objectives are not later realised as learning outcomes.

As already discussed, the intentional and unintentional learning embedded within each game play context can only be assessed if a player then proceeds to actually create a crowdfunding campaign in this crowdfunding model. These arguments were covered in chapter three (specifically see 3.5 above) but it is worth noting that this issue was raised by one of the players. They referred to their enjoyment of the game, but then also made a comment about being able to apply this knowledge in the future. From this perspective it would be beneficial to be able to track players in the future.

Table 46: Observed Learning Objectives - Player as Interrogator (V3 PT1).

Cognitive	Learning objective	Observed
Remember	9. Recognising relevant types of questions to ask.	2
Remember	10. Recalling previous responses from players.	6
Understand	11. Interpreting the true sense of responses.	1
Analyse	12. Differentiating between relevant and irrelevant responses.	3
Evaluate	13. Checking by asking primary and secondary questions.	6
Evaluate	14. Critiquing appropriate primary and secondary questions to ask.	3
Create	15. Generating questions and probes.	3

5.2.1.4 CCBG V4 / PT 1

Highlights

- 15 players (13 females / 2 males)
- Tile count: 32

V1 PT1 was disappointing; V4 PT1 was even more so in terms of the gravity with which this playtest declined from V3 PT 1. This playtest crashed to a new low. This was a radical change from the previous boards and the colour scheme reflected the serious nature of the serious game. The question then became has this redesign gone too far and now presented a board which has a negative aesthetic?

Figure 26: CCBG Board V4.
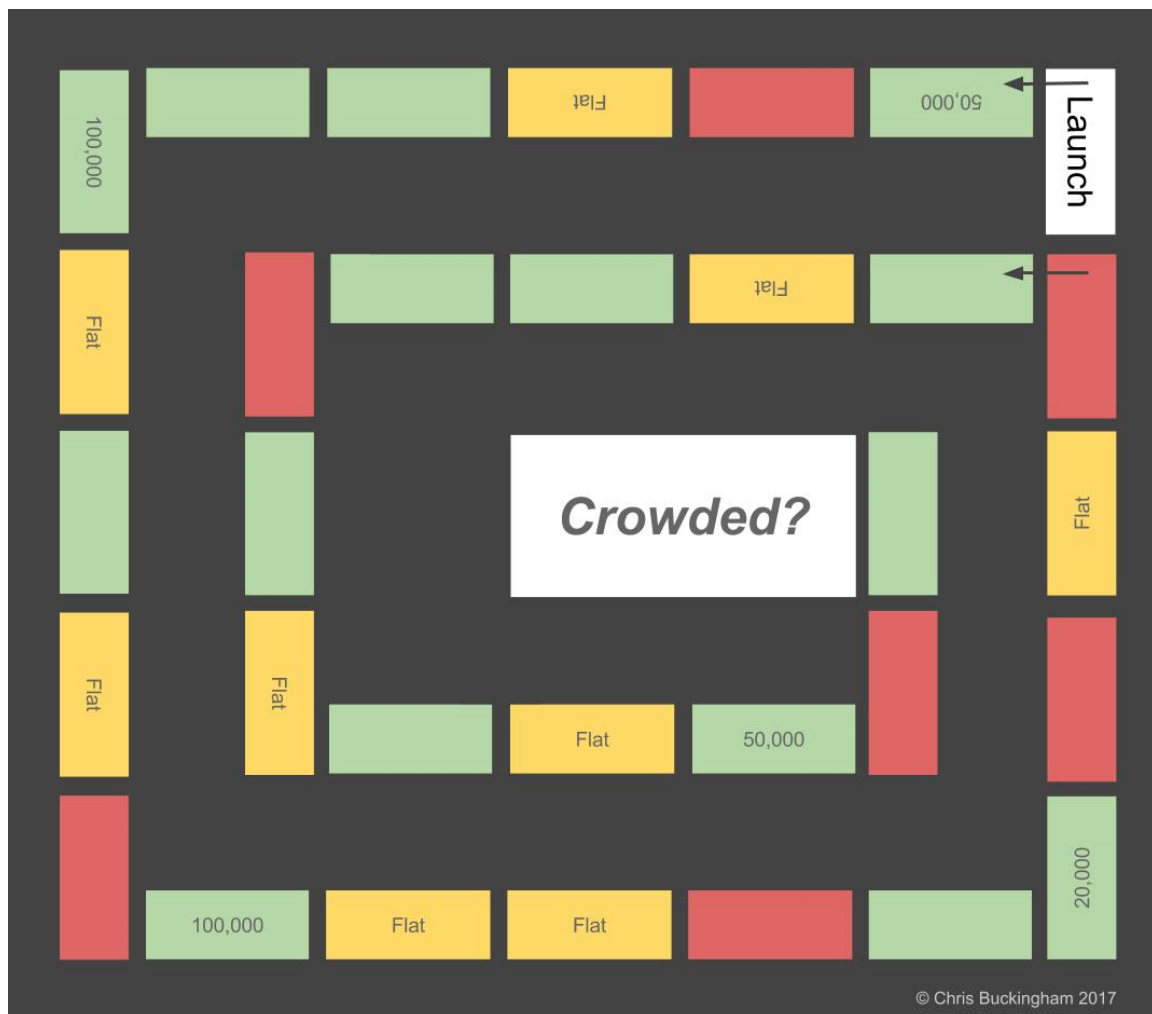
This game used the same previously used mechanics:

- Red chance cards continued the same
- Profile cards had not changed
- Yellow flat tiles remained.

Changes included:

- Removal of the value cards (which had dictated the maximum value of the question)
- The value was now on the question card (see Appendix A1.6)
- Random gift amounts on the board, this was an automatic gift and the player continued to answer the question as per normal play.

The response at exit interview was quite contrary to the results below and the players commented that they liked the board's colour scheme and block style. But the low score had to reflect something about the game that this researcher had missed, or the players had disliked. The main issue may have been the fact this playtest was composed mainly of game design and design management students.

It may have been that they felt duty bound to offer more depth in their criticism of the game holistically. Indeed, in the session summary sheet for this playtest (see Appendix B4) the players debated the pros and cons of the conflict during the play. It was also noted that one group in particular (which was a mixed group of games and design students) were fairly competitive. This resulted in several heated exchanges where the values were reduced significantly for poor responses. But these conflicts had been witnessed before and the game had scored significantly better than this playtest.

One of the more significant exit interview debates was that the board should be round. Several players thought this would make the board more intuitive to play and reduce some of the opportunities for conflict as the board would present a less oppositional aesthetic and become more inclusive. The researcher noted in his session summary sheets how he felt this might not produce this kind of result.

Later discussions with colleagues who teach on the games design course at Winchester School of Art (University of Southampton) were also of the opinion that this change would not necessarily produce change in the game's dynamics. A further fear was that it might remove some of the elements that the game was trying to simulate in the real world, i.e. unpredictable questions being asked and conflictual opinions being expressed.

A further issue noted in the session summary sheet but which appears to conflict with the poor result was that the game was much more fluid. Play was relatively quick to get underway and the rules seemed to be quickly understood. Play was also much shorter (about 50 minutes) a reflection of the reduction in the number of tiles and the number of opportunities to address a question.

It may also reflect the games students themselves, they are used to playing games and these mechanics and the dynamics are not revolutionary or radical to this type of board game. The opposite was being attempted in the design process, players needed to rapidly comprehend the game and then play. This was achieved in V4 PT1.

Could it also be that the researcher's presence had biased this game? There were notes in the session summary sheet that hinted at this possibility. There were instances where the researcher was observing the players in relatively close proximity and deeper probing of a question, player to player, was appropriate, but these opportunities were not taken and play continued.

When the researcher moved away and observed more discreetly from a distance several instances were noted where the same group did probe much deeper. This observation may have meant that the proximity to play of the researcher may have biased the capacity of the player to probe deeper. For reasons of self-awareness, group pressure or lack of cognitive capacity for that particular question, there could be several explanations for this situation.

Table 47: V4 PT1 Questionnaire Results.

DK = Don't Know 1 = low & 5 = high	DK	1	2	3	4	5
Was the competitive element of the game fun?	0	1	0	10	3	1
Was the social interaction fun?	0	0	1	9	4	1
Was the discovery of new vocabulary fun?	0	1	3	7	4	0
Overall, was the activity fun?	0	0	4	5	6	0
Was it fun learning in this way?	0	0	2	7	4	2
Playing the game, how did you feel?	Frown	Neutral	Smile			
	0	10	5			

A significant number of players indicated a neutral response to this version of the game. Could this be a reflection of the lack of novelty in this approach to learning for the game's students?

Table 48: V4 PT1 Dot Voting Results.

Fun				
Super fun	Fun	Not sure	Not so fun	Epic fail
0	10	4	1	0
Difficulty Level				
Too easy		Nicely Challenging		Too challenging
0		11		4
Clarity of rules				
2 x smiles	1 x smile	Neutral	1 x frown	2 x frown
2	9	3	1	0
Can people learn from playing the game?				
No		Not sure		Yes
0		6		9
What form would you like the game to take?				
Digital		Board	Mixed	Not sure
7		3	0	5
Did you enjoy the game?				
No		Not sure		Yes
1		4		10
Would you recommend the game to someone you know who wants to crowdfund a project?				
No		Not sure		Yes
1		6		8

All three of the first categories ('*Fun*', '*Difficulty Level*' and '*Clarity of rules*') scored well which reflects well on the rules sheet and the interactivity of the game. The question '*Did you enjoy the game*?' also scored high. However, this does not correlate with the questionnaire; when asked '*Was the competitive element of the game fun*?' a majority responded neutrally. Likewise, when asked '*Was the social interaction fun*?' this playtest scored low.

At exit interview there were some debates over these issues and perhaps this particular playtest produced more conflicting outcomes in the game than had been the case previously. Players were more prepared to openly criticise the game and they were also more prepared to openly challenge one another in the game world. But then when asked '*Did you enjoy the game*' the dot voting poll scored high.

There is a paradox that unfortunately cannot be explained by the results or the exit interview. Could it be that some aspects of the game were thought less of than others and these were to the fore when the players answered the questionnaire? Could it be that players were more conscious of their public vote than they were of their private responses in the questionnaire? These questions remain unresolved.

Below are the observational learning objectives tick sheets and as in previous examples these were all noted as observed during play.

Table 49: Observed Learning Objectives - Player as Responder (V4 PT1).

Cognitive	Learning objective	Observed
Remember	1. Recalling stories and significant events appropriate to response.	2
Understand	2. Exemplifying chosen responses as most appropriate for context.	2
Understand	3. Inferring the most appropriate response based on the context.	2
Understand	4. Explaining responses when probed within the given context.	2
Apply	5. Implementing an appropriate language response in the context.	2
Analyse	6. Differentiate the responses to nuanced contexts.	2
Evaluate	7. Critiquing and selecting appropriate responses in context.	3
Create	8. Producing convincing responses appropriate to context.	2

Table 50: Observed Learning Objectives - Player as Interrogator (V4 PT1).

Cognitive	Learning objective	Observed
Remember	9. Recognising relevant types of questions to ask.	2
Remember	10. Recalling previous responses from players.	3
Understand	11. Interpreting the true sense of responses.	3
Analyse	12. Differentiating between relevant and irrelevant responses.	2
Evaluate	13. Checking by asking primary and secondary questions.	3
Evaluate	14. Critiquing appropriate primary and secondary questions to ask.	2
Create	15. Generating questions and probes.	5

5.2.1.5 CCBG V4 / PT 2

Highlights

- 34 players (28 females / 6 males)
- Improved profile cards introduced
- Formal accounting sheets provided.

As this playtest used the same board as the previous playtest (V4 / PT1), it was thought unneccessary to include the graphical image of the board here. This playtest was much quicker to get started, players cognition of the rules appeared to be faster than previous playtests, even with a larger group. The researcher's introduction was also much more detailed.

There was some confusion during early play with one team misunderstanding the values on the green tiles. They assumed this was the value for the question rather than a gift. Discreet clarity was provided by the researcher.

Improvements were also made to the profile cards. The biggest change was the reduction from six in the original games to just three in this playtest. The amount of detail was increased as a result of reflection of the previous playtests. The detail was fictional but the templates were inspired by a mix of several crowdfunding platforms.

These platforms provide templates for the applicant to make the best possible case to the crowd. These generally outline things which are relevant to the pitch such as financial details and marketing strategy, therefore it was a logical step to audit these and create a set of fictional businesses based on the information required in these existing templates.

Table 51: V4 PT2 Questionnaire Results.

DK = Don't Know 1 = low & 5 = high	DK	1	2	3	4	5
Was the competitive element of the game fun?	1	0	1	11	10	11
Was the social interaction fun?	0	0	1	9	9	15
Was the discovery of new vocabulary fun?	0	0	1	13	12	8
Overall, was the activity fun?	0	0	1	14	9	10
Was it fun learning in this way?	0	0	2	3	12	17

Playing the game, how did you feel?	Frown	Neutral	Smile
	0	4	30

The score above saw an improvement on the previous playtest. The room was the same as playtest three, but the researcher had arrived a lot earlier to set out the room with the three playing tables aligned next to each other. This made the observation of the players much better as all tables could be viewed from several positions in the room without the researcher being too conspicuous. The table set-up also seemed to be more intuitive for the players. Whereas several players had shuffled around and even moved tables during the early stages in the other playtests, this was unnoticed by the researcher in this playtest. The table arrangements were: table one with twelve players making up six teams, table two with twelve players making up six teams and table three with ten players making up four teams.

This configuration of the room meant that the teams had to double up on the profile cards; it also meant teams had a good comprehension of the business that they were twinned with. Some heated debates were recorded over strategies and the amounts to award, but this seemed to be an enjoyable experience rather than one of outright conflict as had been experienced in the last playtest. Demographics were roughly the same although these students were a much more mixed group from across different disciplines. Many seemed to know each other and the start was warm and friendly. This was also reflected in the session's summary notes in which the researcher commented on the levels of engagement with the game; this seemed to be more open and accepting than had been experienced in playtest four (see Appendix B). Even in heated exchanges there was cordiality between teams and players.

There were also several comments recorded on the session summary sheet with reference to the new vocabulary players had been exposed to. There was general agreement that although this was a difficult aspect of the game at times, the players enjoyed learning these new terms and placing them in the context of a business scenario. As this was one of the key aims of the game, it was pleasing for the researcher to have this explicitly stated.

Also noted was the use of the new accounting sheets. These simple A4 sheets had two columns, one for amounts earned in the game and one for the total. As players earned credit they could simply make a note and keep a running total. This meant that at all times in the game they had a reference for their funding at that point in the game. No cheating was recorded or totals disputed in this playtest. There was a comment in the exit interview that these could have been better designed to fit the overall feel of the game.

Table 52: V4 PT2 Dot Voting Poll Results.

Fun				
Super fun	Fun	Not sure	Not so fun	Epic fail
7	24	2	1	0
Difficulty Level				
Too easy		Nicely Challenging		Too challenging
1		29		4
Clarity of rules				
2 x smiles	1 x smile	Neutral	1 x frown	2 x frown
7	24	2	1	0
Can people learn from playing the game?				
No		Not sure		Yes
1		2		31
What form would you like the game to take?				
Digital		Board	Mixed	Not sure
24		6	2	2
Did you enjoy the game?				
No		Not sure		Yes
3		2		29
Would you recommend the game to someone you know who wants to crowdfund a project?				
No		Not sure		Yes
1		6		27

The most significant shift here was the number of players voting for a digital format of the game. Compared to previous playtests this was a very high percentage voting for a digital format with a significant decrease in the number of votes for a board format. Players enjoyed the game, and both the questionnaire and the dot voting poll scored well. But this cohort of players would like to see some digital format of the game.

Exactly what format is left open to debate and not addressed on this dot voting poll. Clarity of rules also scored highly (although not as highly as V3 PT1 which scored 80%, the highest) with 70.5% scoring one smile. This was the third highest result (V2 also scored 70.5%) and is an indication that the rule structure works, even though it is complex. Simplifying this rule sheet could be a practical iteration for future playtests.

Also significant is the response to the question '*Would you recommend the game to someone you know who wants to crowdfund a project*?' Here again this playtest scored highly suggesting that the mechanics and dynamics had worked well in combination for this particular group of players. This is encouraging given the poor results in V4 PT1.

All learning objectives were observed, with Cognitive #4 'Understand - explaining responses when probed within the given context' scoring extremely well. Even though, as noted previously, there are some flaws in this method.

Table 53: Observed Learning Objectives - Player as Responder (V4 PT2).

Cognitive	Learning objective	Observed
Remember	1. Recalling stories and significant events appropriate to response.	3
Understand	2. Exemplifying chosen responses as most appropriate for context.	3
Understand	3. Inferring the most appropriate response based on the context.	4
Understand	4. Explaining responses when probed within the given context.	17
Apply	5. Implementing an appropriate language response in the context.	2
Analyse	6. Differentiate the responses to nuanced contexts.	3
Evaluate	7. Critiquing and selecting appropriate responses in context.	5
Create	8. Producing convincing responses appropriate to context.	7

Table 54: Observed Learning Objectives - Player as Interrogator (V4 PT2).

Cognitive	Learning objective	Observed
Remember	9. Recognising relevant types of questions to ask.	6
Remember	10. Recalling previous responses from players.	4
Understand	11. Interpreting the true sense of responses.	4
Analyse	12. Differentiating between relevant and irrelevant responses.	4
Evaluate	13. Checking by asking primary and secondary questions.	4
Evaluate	14. Critiquing appropriate primary and secondary questions to ask.	4
Create	15. Generating questions and probes.	6

5.2.2 Playtest Results

On the next few pages (pp.203 – 209) the results have been grouped accordingly, with the final comparison table given on page 210 below.

Table 55: Result Code Table.

Questionnaire Results (fun)	Code for results
Was the competitive element of the game fun?	QQ1
Was the social interaction fun?	QQ2
Was the discovery of new vocabulary fun?	QQ3
Overall, was the activity fun?	QQ4
Was it fun learning this way?	QQ5
Playing the game how did you feel?	QQ6
Dot voting results	
Fun	DV1
Difficulty level	DV2
Clarity of rules	DV3
Can people learn from playing the game?	DV4
What form would you like the game to take?	DV5
Did you enjoy the game?	DV6
Recommendation	DV7

This research is a social undertaking in the humanities, not a naturally scientific one. It starts with an inductive paradigm from which the design aspects of the board game (CCBG) are considered. The values presented in this section are the mean values, they are there to support a response to both RQ2 and RQ3. As such no further extrapolation of the statistics was deemed necessary.

What these mean values demonstrate is the responses of the players to the various versions of the game and how the incremental changes to aesthetic, dynamic and mechanics resulted in differing levels of satisfaction. Page 205 below provides the reader with a comparative table (Table 5.2.1.15) with percentages of the positive results displayed.

Results were deemed positive if they scored on the questionnaire 4 or 5 on a scale of:

Don't know / 1 (low or negative) / 2 / 3 / 4 / 5 (high or positive)

Dot voting varied but where the neutral vote was an option, this was considered a negative.

Table 56: Results for QQ1.

	Number of players	Was the competitive element of the game fun?		
		Negative	Neutral	Positive
V1 PT1	6	1	2	3
V2 PT1	27	2	13	12
V3 PT1	16	1	7	8
V4 PT1	15	1	10	4
V4 PT2	34	2	11	21
Grand Total	98	7	43	48
As %		**7**	**44**	**49**
Combined*		**51**	_	**49**

* In order to compensate for no 'neutral' response in DV2, the negative and neutral were combined and presented as a negative score in QQ1 (presented as a percentage above).

Table 57: Results for QQ2.

	Number of players	Was the social interaction fun?		
		Negative	Neutral	Positive
V1 PT1	6	0	4	2
V2 PT1	27	0	11	16
V3 PT1	16	0	6	10
V4 PT1	15	1	9	5
V4 PT2	34	1	9	24
Grand Total	98	2	39	57
As %		**2**	**40**	**58**

Table 58: Results for QQ3.

	Number of players	Was the discovery of new vocabulary fun?		
		Negative	Neutral	Positive
V1 PT1	6	2	2	2
V2 PT1	27	5	7	15
V3 PT1	16	3	3	10
V4 PT1	15	4	7	4
V4 PT2	34	1	13	20
Grand Total	98	15	32	51
As %		**15**	**33**	**52**

Table 59: Results for QQ4.

	Number of players	Overall, was the activity fun?		
		Negative	Neutral	Positive
V1 PT1	6	1	3	2
V2 PT1	27	4	7	16
V3 PT1	16	1	5	10
V4 PT1	15	4	5	6
V4 PT2	34	1	14	19
Grand Total	98	11	34	53
As %		**11**	**35**	**54**

Table 60: Results for QQ5.

	Number of players	Was it fun learning in this way?		
		Negative	Neutral	Positive
V1 PT1	6	1	3	2
V2 PT1	27	2	7	18
V3 PT1	16	0	5	11
V4 PT1	15	2	7	6
V4 PT2	34	2	3	29
Grand Total	98	7	25	66
As %		**7**	**26**	**67**

Table 61: Results for QQ 6.

	Number of players	Playing the game, how did you feel?		
		Negative	Neutral	Positive
V1 PT1	6	0	2	4
V2 PT1	27	0	6	21
V3 PT1	16	0	5	11
V4 PT1	15	0	10	5
V4 PT2	34	0	4	30
Grand Total	98	0	27	71
As %		**0**	**28**	**72**

Table 62: Results for DV1.

	Number of players	Fun		
		Negative	Neutral	Positive
V1 PT1	6	0	2	4
V2 PT1	27	4	4	19
V3 PT1	16	0	0	16
V4 PT1	15	1	4	10
V4 PT2	34	1	2	31
Grand Total	98	6	12	80
As %		**6**	**12**	**82**

Table 63: Results for DV2.

	Number of players	Difficulty Level		
		Negative	THIS QUESTION HAD NO NEUTRAL ANSWER.	Positive
V1 PT1	6	2		4
V2 PT1	27	4		23
V3 PT1	16	2		14
V4 PT1	15	4		11
V4 PT2	34	5		29
Grand Total	98	17		81
As %		**17**		**83**

Table 64: Results for DV3.

	Number of players	Clarity of rules		
		Negative	Neutral	Positive
V1 PT1	6	0	2	4
V2 PT1	27	0	3	24
V3 PT1	16	0	0	16
V4 PT1	15	1	3	11
V4 PT2	34	1	2	31
Grand Total	98	2	10	86
As %		**2**	**10**	**88**

Table 65: Results for DV4.

	Number of players	Can people learn from playing the game?		
		Negative	Neutral	Positive
V1 PT1	6	0	2	4
V2 PT1	27	1	8	18
V3 PT1	16	0	0	16
V4 PT1	15	0	6	9
V4 PT2	34	1	2	31
Grand Total	98	2	18	78
As %		**2**	**18**	**80**

Table 66: Results for DV5.

	Number of players	What format would you like the game to take?			
		Digital	**Board**	**Mixed**	**Not Sure**
V1 PT1	6	3	2	1	0
V2 PT1	27	13	8	4	2
V3 PT1	16	10	4	0	2
V4 PT1	15	7	3	0	5
V4 PT2	34	24	6	2	2
Grand Total	98	57	23	7	11
As %		**59**	**23**	**7**	**11**

Table 67: Results for DV6.

	Number of players	Did you enjoy the game?		
		Negative	**Neutral**	**Positive**
V1 PT1	6	0	2	4
V2 PT1	27	1	3	23
V3 PT1	16	0	0	16
V4 PT1	15	1	4	10
V4 PT2	34	3	2	29
Grand Total	98	5	11	82
As %		**5**	**11**	**84**

Table 68: Results for DV7.

	Number of players	Would you recommend the game to someone you know who wants to crowdfund a project?		
		Negative	Neutral	Positive
V1 PT1	6	0	2	4
V2 PT1	27	2	2	23
V3 PT1	16	0	2	14
V4 PT1	15	1	6	8
V4 PT2	34	1	6	27
Grand Total	98	4	18	76
As %		**4**	**18**	**76**

In order to make comparisons between playtests easier the table below presents the mean scores expressed as a percentage from each playtest:

Table 69: Positive Results Table (expressed as % - rounded).

Questionnaire Results (fun)	V1PT1	V2PT1	V3PT1	V4PT1	V4PT2
Was the competitive element of the game fun?	50	44	50	27	62
Was the social interaction fun?	33	59	63	34	71
Was the discovery of new vocabulary fun?	34	55	63	27	59
Overall, was the activity fun?	33	59	63	40	57
Was it fun learning this way?	34	66	69	40	85
Playing the game how did you feel?	67	78	69	33	88
Dot voting results					
Fun	67	70	100	67	92
Difficulty level	67	85	88	74	85
Clarity of rules	67	89	100	73	92
Can people learn from playing the game?	67	67	100	60	91
Did you enjoy the game?	67	85	100	67	85
Recommendation	67	85	88	54	80
Number of Players	6	27	16	15	34

Table 70: Grand Total Positive Results (expressed as total numbers & % - rounded).

QQ	Questionnaire Results (fun)	Total numbers	As %
1	Was the competitive element of the game fun?	233	47
2	Was the social interaction fun?	260	52
3	Was the discovery of new vocabulary fun?	238	48
4	Overall, was the activity fun?	252	50
5	Was it fun learning this way?	294	59
6	Playing the game how did you feel?	335	67
DV	Dot voting results		
1	Fun	396	79
2	Difficulty level	399	80
3	Clarity of rules	421	84
4	Can people learn from playing the game?	385	77
6	Did you enjoy the game?	404	81
7	Recommendation	374	75

5.2.3 Results Discussion

As can be seen in findings DV5 (p.204) a significant proportion of the mean vote opted for a digital version of the game. This could either indicate unsatisfactory player experiences or a more explicit reflection of the players' demographic, or indeed a mix of these aspects. But when consideration is given to the overall satisfaction of the players when answering the question QQ4 (Overall, was the activity fun?) a slim majority responded positively (50.4%), with the largest negative responses in V1PT1 (33%) and V4PT1 (40%). Reasoning for this is thought to relate to V1PT1 had a low number of players (six) and V4PT1 received some of the greatest criticism. This cohort had a larger body of games design students who may have been able to vocalise their criticism more acutely.

Equally surprising was the high number of votes in the 'not sure' category. This could reflect the game's difficulty to categorise as either a fun, entertaining game which allows exploration of vocabulary or a more serious game that is more focused on educational values. Generally, CCBG scored well in all categories for the 'fun' aspect of the game but it may not be reflected in the needs of the player.

These players are young students who are perhaps more open to experimentation and so willing to test new areas, like housing CCBG within a digital format, or something altogether different, for example a card game, which was not an option on the voting list. Could it be that those players with a keen interest in an alternative and not listed format would vote '*not sure*' rather than opt for the other category that is definitely not an alternative (a card game or similar)?

More concerning still were the overall results for QQ1 (Was the competitive element of the game fun?) and QQ3 (Was the discovery of new vocabulary fun?). These scored below 50% positive (QQ1, 47% and QQ3, 48%). There were several examples in the session summary sheets where the competition among the players was noted and there were instances where friction was felt between players. But at no point was this of such concern that the researcher felt obliged to interfere with play or provide clarity as a result of the friction.

Of particular note was V3PT1 on the session summary sheets (see Appendix B). This playtest scored QQ1 as 50% positive, 44% neutral and 6% negative. A clear split in this group had emerged over whether the competitive element of the game's dynamics was fun. But, somewhat paradoxically, in the dot voting response to DV1 (fun), 100% voted positive (zero negative and zero neutral). Indeed, in the dot voting this group seemed to be the more positive with 100% positive recorded on four of the six questions (excluding DV5 – on the format). Furthermore, the remaining two questions each scored 88%.

This may suggest that this group were socially more likely to be affected by witnessing peer results and thus follow the overall trends as they witnessed the dots being placed on the voting sheet. Another possibility was that they were tired and wanted to leave the play environment as quickly as possible. If this was the case, it would be more likely that players would simply place their dot on the sheet without great reflection. They may have been under the impression that the sooner this was completed the sooner they would be able to leave.

But in response to QQ2 (Was the social interaction fun?), this group scored higher in the positive (0% negative, 37.5% neutral and 62.5% positive). This would suggest that the interaction the game enabled between players was a positive. However, when this element became a competitive one, this produced a more negative experience. It was noted in the session summary sheets, that one group had decided to use all six business profile cards and play against each other. There were also several instances where players, more generally, had struggled with the vocabulary. This may, in part, explain these negative scores; the players had not enjoyed these aspects as much as others in the game.

Overall, V3PT1 had enjoyed the game and this is reflected in the response to DV7 (recommendation to someone they know). 87.5% responded positively to this question (overall this question scored well – 76% of players were positive in their response, 18% were neutral and just 4% negative).

5.2.4 RQ2 Response

How can the framework for crowdfunding help the design of the game?

The framework provides scaffolding for a holistic view for the creation of a crowdfunding game. However, in developing CCBG a reductionist approach was adopted that meant a single element of the framework was used to demonstrate the possibility of a serious game having a positive effect on an applicant in the crowdinvesting (crowdfunding equity) model. A better approach may have been to have taken a more general approach from the outset and to have developed something more inclusive of the framework in its entirety.

Using more of the framework in this way might have had a greater impact on a players' perceptions of the crowdfunding experience and developed a more robust outcome. Design decisions were informed by the crowdconsent framework. The effect of this is seen in all aspects of the MDA framework by Hunicke et al (2004). That is, the mechanics are informed by the original analysis of the open, publicly available extant texts from 2014, but these mechanics are also inclusive of both rules and concepts developed as a direct response to the crowdconsent framework. It became a linear process whereby the original questions informed the mechanics and the crowdconsent framework informed the dynamics and at this nexus CCBG emerged.

For example, the basic questions are the result of the initial analysis. Their inclusion in CCBG, a board game, was a response to the trust heading in the crowdconsent framework. This original set of questions taken from the crowd becomes a value asset to the game, which in turn is now expanded and informs the creation of an endogenous educational (serious or applied) game (Winn, 2009). The alternative was to use existing game mechanics and add a veneer of these questions producing an exogenous game where the learning content is added to the existing game's scaffolding (ibid). But this may have left the game open to criticisms of not meeting the stated learning objectives and it was felt better to start from scratch. In doing so it also meant that utility was afforded in the design by the crowdconsent framework.

This is also true of the dynamics of CCBG. In designing the core activities in CCBG, the designer is also seeking to clarify how the system will work and the time in which the context of play will be available to the player (Salen & Zimmerman, 2004). In the early versions some issues were found as the dynamics of the play timings were too long and thus iterative sequences were able to take account of these insights and the game was adjusted accordingly while still utilising the crowdconsent framework as the scaffold for the game's development.

The underlying game dynamics are thus a consequence of the crowdconsent framework and influenced directly by this construct. In this way the crowdconsent framework directly influences the design of the final outcome, CCBG (Crowded Comments Board Game).

5.2.5 RQ3 Response

How can the simulated game educate the applicant

in making appropriate decisions in the real world?

This research is a synthesis of experiential learning by the researcher as a crowdfunding consultant, literature reviews that acted as guidance toward the main principles which determine success in a crowdfunding campaign and the development of a serious game where learning objectives are established as the main justification for its development and empirical analysis where the experiences and thoughts of both the researcher and players were recorded.

Contextually RQ3 is complex in that each applicant's experience will be different and will depend on variables such as their own perceptions of self (Bandura, 2001; Leary, 1996) and the vision they are attempting to create. Education is thus dependent to some degree on the experiences of the applicant and the knowledge they perceive they need at the time of playing the game.

To some degree this is also reliant on meta-cognition as they attempt to assimilate self in the context of the needs of the vision and the creation of the campaign. By playing the game, the applicant is already starting to address the fact that they may lack some knowledge or understanding and that through playing this game they may enlighten themselves in these areas.

Learning objectives are embedded within the game's dynamics and mechanics but limitations may exist if these learning objectives do not relate to the solutions being sought by the applicant. This is not to infer no learning is taking place, but to suggest that the learning that may be absorbed by the applicant / player may not be the knowledge they seek or need at the time of play. The entrepreneurial process and journey are a very complex one that encompasses many variables (Kolvereid & Isaksen, 2012; Legge & Hindle, 2004) and in so doing it brings into sharp focus the narrow simulation that CCBG (Crowded Comments Board Game) attempts to produce.

As a synthesis of this knowledge and understanding the game attempts to create a learning experience that is appropriate for the objectives of the player / applicant seeking to understand the crowdfunding process. Based on empirical findings the game succeeds in meeting its global learning objectives (players will be crowdfunding fluent). But the degree to which they are crowdfunding fluent is open to question.

CCBG only tackles a small area of the crowdconsent framework and in so doing no generalisability can be inferred for the wider understanding of the applicant / player to the crowdfunding eco-system. The best we can state with confidence in response to RQ3 is that in these instances of play the applicant / player reported the game could help them learn.

Figure 27: Responses to DV4:

"*Can people learn from playing the game?*" (n = 98)
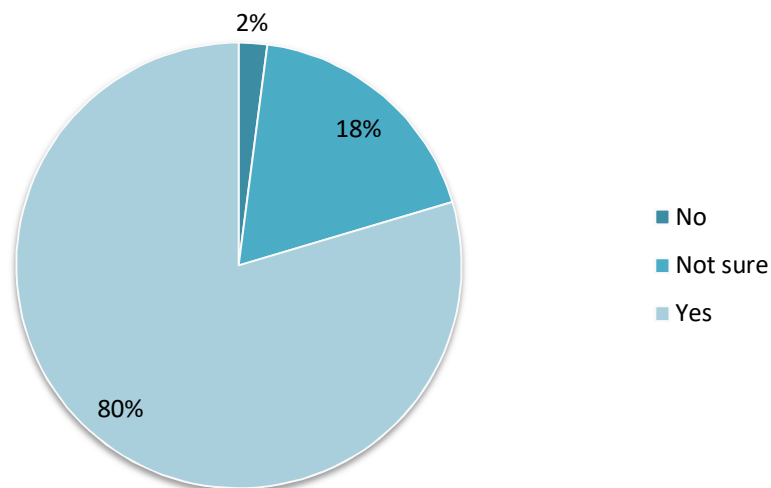
Four designs of CCBG were tested with players. Design choices of the mechanics, dynamics and aesthetics (Hunicke et al, 2004) of the board were informed by the player experience. V1 PT1 and V4 PT1, scored the lowest of all in terms of the fun aspect and the learning that was self-reported by the players.

For example, in answer to the question *was the discovery of new vocabulary fun*?, a majority of respondents (66%) scored the question as three or below (where one was low and five was high). Subsequent playtests scored much higher, suggesting that as the evolution of the board progressed with player input, so the possibility of CCBG as an instructional tool for the player wishing to learn more about crowdfunding can be claimed as a positive one.

Board aesthetics evolved along with the dynamics of the game but the base mechanical structure remained fairly consistent and, as reported, provided a positive overall experience, supporting the original question in this research: Can a serious game help simulate the crowdfunding experience? There were consistencies throughout the four playtests which covered versions two, three and four suggesting that the base idea is a sound one and worthy of further development and investigation.

5.3 Limitations

Starting with the workbook; Crowdfunding Readiness Assessment (CRA), limitations concerning the generalisability of the findings from the interviewees need to be stated. They numbered four while the respondents to the emailed questionnaire numbered two. These six are too low a number from which to have inferred a wider generalisation about the crowdfunding process. However, in providing some indication of the ability of the CRA to indicate success factors and to act as a measurement of these factors it did go some way to proving the concept a worthy one.

Specifically, for CRA, criticism was forth coming from those that were interviewed and those who responded to the emailed questionnaire. For example, one found the process "…*quite difficult to understand at times*" (interview respondent, Henry), while others found the general approach good but were somewhat surprised with the opening question "*That first question floored me, and I thought what should I write, it's asking this now?*" (emailed questionnaire respondent, Robbie). These realities are reflective thoughts and recalled experiences of the respondent's interactions with the CRA and added value for the further development of the concept as an outcome which could influence the applicant's campaign design decisions.

A constructivist lens affords understanding of the many perspectives of the applicants. The crowdfunding process is focused on the creation and communication of relationships developed before, during and after this activity. Therefore, an understanding of these perceptions is necessary to gain access to the subjects actively engaged in crowdfunding processes. Interpretation of their realities could be problematic, and this is also reflected in the interpretation of the CRA by the applicant.

Interviewee Sara was particularly critical of this aspect and referred to the language that had been used in the workbook. Sara also reported that there were several questions that didn't make sense unless the reader had a background in the specific area being discussed. But Sara's strongest criticism was of the language used in that it was often the type of language used in academia but not the type of language that is routinely used by the general population.

This latter point was echoed in the interviews with both Wally and Henry and led to the reflective analysis of the language and emphasis in CRA. The results of this are still being assessed for redeployment in some form. Interestingly, all respondents thought the concept a good one, in that it attempted to convey the essence of a campaign and what the applicant needed to consider in the planning stages. For respondents, it captured likely experiences and developed understanding of the framework's applicability to their particular situation.

However, further criticism was highlighted by interviewee Henry, who felt that it lacked any guidance on how to solve the issues addressed in the question. This insight was the inspiration for the Google Site dedicated to CRA (http://bit.ly/2pr4gt6). This site uses the Google Sites platform, a free Web site creation resource that requires no prior coding knowledge. It acts as a repository for further help and tips. It also has links to other external sites where additional advice can be found relating to the sections found in CRA.

Reviewing the literature suggests that many game and simulation formats can enhance the learning outcomes of the pedagogical process (cf. Buchinger & da Silva Hounsell, 2018, de Freitas, 2018; Ranchhod et al, 2014; Gee, 2007; Shaffer, 2006). Taking the specific case of CCBG, it is an excellent concept constructed for achieving the sole objective assigned by the designer / researcher but the problem remains that in attempting to address the questions, the agent or player is left out of the equation. The objectives are set using a robust framework developed by professional educators (Anderson et al, 2001) and the problem is one of experiences gained by the players on their journey as real-world applicants / entrepreneurs.

This is a transformative issue of identity and one where the player is, perhaps for the first time, encountering and learning about the entrepreneurial process (Rae, 2007). As entrepreneurs create and then manage their project they are learning continuously on their journey (Cope, 2005). From a social constructionist perspective this reality is reliant on interpretation, reflection and iteration of both the historical past and the recently learnt.

As entrepreneurs are learning by doing (Cope, 2005) the applicant will face crises, or as Chell (2004) describes them 'critical incidents'. It could be argued that CCBG fails to prepare the player adequately for the transformation from player to applicant to project manager and in so doing fails to adequately prepare the player for future critical incidents they may encounter. In response to this criticism CCBG was not attempting to cover all possibilities of crisis or risk inherent in the entrepreneurial journey.

A CCBG player may be at any point on their personal journey as a project manager / applicant / entrepreneur (explorative, seed, start-up or seeking growth) and thus their needs, abilities and requirements of the game will change dependent on their personal situation (reality). CCBG was not designed to alleviate these issues entirely, rather it focused on one particular interactive aspect of the crowdfunding process which originated with the development of the crowdconsent framework.

In focusing on this particular issue, the stated learning objectives were achieved according to empirical observations in playtests. Mixed methods were used in this research that saw the creation of the crowdconsent framework which in turn became the initial concept, the CRA workbook, containing the findings from the literature. This product was tested with experts and entrepreneurs in the field.

Validation of CRA then led to the development of a serious game, CCBG, which took one aspect of this framework and sought to test the idea that a game, dedicated to this particular aspect of the framework, could add value for a player by achieving established learning objectives. There remains an open question about how well this simulation meets the objective of engaging the player in meaningful activities. In this respect there are three results that are relevant to this question; when asked *Can people learn from playing the game?* an overwhelming majority responded positively. However, when asked; *Overall, was the activity fun?* The scores were as follows (where 1 = negative and 5 = positive):

Table 71: Response to QQ4: *Overall, was the activity fun*?

Responses	Number	As %
Don't know	0	
1	1	46
2	10	
3	34	
4	37	54
5	16	
n = 98		

This may reflect the board game itself, as opposed to the dynamics and mechanics of the game, which generally players reported as being adequate. Players reported that they would like to see an alternative format to the prototype being tested (see appendix C7 below). This may also replicate the responses to the question *Overall, was the activity fun*?

With almost 46% of responses scoring three or below, this would suggest there is some room for improvement in the game. This is further reinforced with the question *Was it fun learning in this way*? Which scored as follows (where 1 = negative and 5 = positive):

Table 72: Response to QQ5: *Was it fun learning in this way*?

Responses	Number	As %
Don't know	0	
1	1	33
2	6	
3	25	
4	33	67
5	33	
n = 98		

It would appear that the activity proved more fun than the concept of learning via a board game. Players frequently mentioned their inclination toward this type of learning genre when compared to a formal lecture in the informal exit discussions. This was concurred with the question *Did you enjoy the game?* These results show an overwhelmingly positive response, although caution is needed as the negatives were also significant in this response, as can be seen in Table 73 below:

Table 73: Response to DV6: *Did you enjoy the game?*

Response	Number	As %
No	4	16
Not sure	18	
Yes	76	84
n = 98		

Although the results suggest that this was a positive experience for the players, there are still some concerns that CCBG needs further adjustments to reduce the negative scores while maintaining the interactive nature of the game. Social interactions were an intended attribute to the development of CCBG as players not only compete with one another but are also encouraged to socially construct meaning to both advance in the game, and advance their understanding of language common in a campaign. This complex situation demands attention for both internal and external factors which provide individual experiences and memories.

Social interactions on which crowdfunding and certain serious games (Fleming et al, 2017) are reliant must be adequately accounted for as these factors contribute to the overall comprehension by a player. This is not a fixed state but rather one that evolves in the present (Burr, 2003; Berger & Luckmann, 1966; Mead 1932). For this to be relevant in a given context, humans need (and have) the ability to reflect and recall information and find utility for this accumulated store by applying it to the contextual issues they now face (Bandura, 2001).

If players are also doing so in order to support other players in the game world then a further reflection of the real-world characteristic of the crowdfunding experience is also gained. Real world experience will mean a certain level of interaction as funders ask questions and post comments that can be responded to by the applicant. Clarity may be gained for both in this social interaction (Massanari, 2005). This aspect was keenly applied to the development of the CCBG from the early stages of its design. From an ontological perspective, this is a relativist view, and hints at the belief that the agent's reality is created in their mind and is only knowable to that mind. These experiences and perceptions can be expressed through language or other forms of communication (Harris 1998).

This presents a further limitation for this thesis as more than one applicant / player will be engaged with the playtesting phase and thus multiple realities are visible in the both the questionnaire responses to the fun aspect of CCBG and the dot voting poll on the more general aspects of the game. Inferred meanings behind the responses required only basic statistical analysis to determine the levels of fun in the game. More elaborate statistical analysis was not deemed necessary within this context and the inductive paradigm adopted at the beginning of this research. However, a deeper statistical analysis may have yielded results as yet unseen.

Strengthening these quantitative samples, the qualitative recordings of play from the observer's subjective perspective, in the form of session summary sheets, added to the analysis. These either refuted or supported the quantitative findings. These notes also recorded the general conditions of play for each playtest. With hindsight, lengthier focus groups may have yielded better results for this comparison.

Perceptions of what it meant to play CCBG and the perceived benefits for the user were fairly uniform across the various versions play tested. This meant, in essence, differing perceptions of the products and the benefits these applicants / players perceived were consistently recorded immediately after each play test via the session summary sheets (Heikkinen et al, 2001).

In the study of serious game design, this kind of complexity may result in different concepts being emphasised by the player / observer (agent) as optimal for the final product. Each agent may have a different perspective on what is needed and how to optimally deliver that experiential learning. Insights such as these greatly enhanced this researcher's understanding (Morgan & Smircich, 1980).

Morgan & Smircich' (ibid) emphasis was on the need of the researcher to be aware of the procedures through which these multiple realities can be created. This is a further complexity where the reality sought is but one of many that are socially constructed using the processes already established in the social mechanics of interaction (both internal and external) (Morgan & Smircich, 1980).

Methodologically aims have been achieved and an original contribution to knowledge has been accomplished through a novel approach (see 5.4 below). Limitations are inherent in this approach and rather than avoiding this discussion, as academics, the discomfort these topics produce requires clarity and reflection. For example, the direct and indirect measurements of learning are not an outcome of this research. As stated in section 3.5.3, direct measurement of learning is not achievable as the outcomes are not the criteria for measurement in this research, but rather the objectives of learning. Consequentially this presents a limitation in terms of assessing the learning outcomes in the context of either result (Bellotti et al, 2013).

Bellotti et al (2013) are explicit about the purpose of a serious game, it must be; 1) both fun and entertaining, and, 2) educational. The first criterion has been achieved in the creation of CCBG and, empirical evidence suggests that it has achieved this element (84% positive to question '*Did you enjoy the game*?'). The second purpose is dependent on the depth of learning that is being measured. If Bellotti et al (ibid) are to be used as the benchmark for the CCBG then this research does not extend far enough. There is no formal assessment of the learning outcomes of the nature Bellotti et al (ibid) advocate. Rather the assessment in this research is introvert; it seeks to understand the reactions of the players in the game to the game. The contribution therefore is focused on the novel application of extended learning objectives to the creation of a serious game.

In their review of serious games, Bellotti et al (2013) also found evidence that simulations were strongly correlated with an ability to deliver learning objectives and outcomes, but that these simulations were no more effective than other forms of delivery in reaching these objectives. However, there was a general expression of preference among the student population for these types of instructions. Demographics of this student population were not given nor were the methods of the research papers they reviewed. There are, therefore, two approaches in critiquing this aspect of the research; either it can be stated that the research fails to adequately assess player progress of the nature Bellotti et al (ibid) advocates, or it can be stated that the research is focused on the game's assessment in delivering a vehicle for assessing these aspects and in doing so, the tools in the form of the learning objectives, which were developed from Anderson et al (2001), are applicable and support this research.

In recording the learning objectives there were also some serious limitations in that the researcher was alone and so it is very conceivable that while the researcher's attention was focused on a particular group, he may have missed instances where it would have been appropriate to record learning objectives being met by members of other groups in the room. This was an inherent weakness and one that the researcher realised only once the sessions and recordings had begun, never-the-less the fact that these instances were recorded, added value to the research.

Numbers became irrelevant to the research and so if it were possible to repeat this exercise, the researcher would choose not to record the frequencies if alone but simply record that learning objectives had been met. If on the other hand fellow observers could be recruited then the quantitative observation may prove more accurate and reliable. The degree and the depth of these instances were not recorded and for future researchers this may be an area of interest.

In responding to Bellotti et al (2013) and their focus on the assessment of the player, they have neglected the earlier stages of a serious game's development and opted instead to look at the delivery of learning from the perspective of a functionally developed game. This neglects many of the issues this research has addressed and fails to take account of the process of iteration that games must go through prior to reaching their optimal design for delivering fluency to a learner.

A final limitation in this research lies in proving the serious game (CCBG) to be the optimal genre of serious game to meet the overarching goals and address the research questions. Here the research could be argued to have some serious limitations in that the majority of players' response to the question '*What format would you like the game to take*?' was 'digital' (59%), followed by board game (23%) and then those that were not sure (11%) and finally, mixed (7%) (see appendix C7 below).

5.4 Contributions

As discussed in chapter two, there has been a proliferation of research on crowdfunding but a dearth of research on the accumulated factors which can lead to crowdfunding success. The first contribution of this thesis is at the individual (micro) and team (meso) levels where utilising the crowdconsent framework produces a more robust cognition of the crowdfunding process. Crowdfunding is not enacted in a vacuum, it is part of the larger entrepreneurial and funding eco-system for the applicants and their teams. Crowdfunding is therefore positioned as part of the larger funding system and this thesis has attempted to bridge the gap in knowledge of how to communicate these success factors for both a practical and an academic audience.

Applying this knowledge to the general population issues were found mainly in the language being used. These issues have not been at the expense of validation for the crowdconsent framework. Housed as a workbook (Crowdfunding Readiness Assessment) it was validated by both applicant and experts in the eco-system surrounding crowdfunding. In providing some indication of the ability of the CRA to assess success factors and provision of a tool for measuring these factors, produced a novel approach that contributes to the knowledge of crowdfunding.

This interactivity is interpreted and constructed through the minds of the agents. This in itself creates further complexity for those seeking to interpret and make sense of this constructed world view and reality (Burr, 2003; Gergen, 1999; Berger & Luckmann, 1966; Mead, 1932). As interviewee Henry stated, the people in their network they expected to support them failed to do so, whereas complete strangers did support their campaign (which was successfully funded using the reward model). Henry then elaborated on these themes and on the topic of what he felt he had learnt as he emphasised the different perspectives different people would have of crowdfunding and the desires / needs these others might have of the process.

Henry used the example of communicating with the crowd and the levels of supplication one would be expected to demonstrate or request. This issue also arose in the interview with Sara, where a reference was made to the inability of some management to accept help from the skill set the crowd poses.

For Sara, it often meant the difference between the crowd using social media to help promote the campaign and the ability of management to accept sharing their message in an alternative vocabulary. Management may not necessarily have used the style of vocabulary adopted by the crowd but this style of language, used by and among their supporters, may be viewed as a clash with the chosen style of management.

Conflict of this nature can be a construct of the impression management strategies that the applicant perceives they need to succeed and the wish and desires of the funder to be emotionally engaged with the campaign and the vision being created. Sara made specific reference to the engagement aspect of issues when the applicants demonstrate a more closed and controlling style of communication.

In these instances, the crowd are more likely "*...to forward an email or share a retweet rather than say 'I love this campaign, I'm backing it, what do you think?'*" (Interviewee Sara). This remains anecdotal and retold from the perspective of the interviewees (both Sara and Henry mentioned these topics).

Accepting this contribution as a reality of the crowdfunding process is to accept a limited view as a general reality for those wishing to crowdfund their vision. It does, however, find some support in the literature (Coleman, 2015; Mollick, 2013; Goffman, 1959). So, we may accept this small sample and extract a wider generalisation about the motivational affordances embedded in the crowdfunding process. That is that crowds are generally motivated to promote a campaign and raise awareness among their network but are less disposed to broadcast their active pecuniary backing of a campaign.

This latter point hints at the fluency needed in a crowdfunding campaign and the emphasis on the language in addressing the crowd as opposed to a focus on the applicant (or their team) seeking the funding (Mollick, 2013). On both counts CCBG can provide support by emphasising the need to adequately address and respond to the crowd while also preparing the applicant for the types of language they are likely to encounter.

This research posed the central question; *How can a serious game help to simulate the crowdfunding experience?* It stemmed from the original content analysis where the interaction between applicant and crowd were analysed. Utilising a methodology of grounded theory (Charmaz, 2006, Hindle, 2004: Strauss & Corbin, 1998) this approach was successful in producing the research questions and helping to articulate the contribution of this research. This contribution was further extended by the application of the crowdconsent framework to a serious game; CCBG (Crowded Comments Board Game), where relativist social construction provided the lens through which the crowdfunding process was observed. Through this lens, ontological realities (what there is) can be stated as multiple and a product of social interactions (Mautner, 2005; Burr, 2003). This thesis is an incremental contribution to the understanding of this process within a serious game. Responses from playtesting to the question; *Was the social interaction fun*? support this contribution scoring well, with 58% positive responses and 42% negative (2% negative and 40% neutral). From this perspective and with the further results of the playtests (see 5.2.2 above and appendix A below) validation of CCBG was generally positive from a learning perspective.

Seen through a social constructionist lens and developing the analysis for CCBG, the basic response to the questions in this thesis are found in the evidence suggesting the board game can simulate certain aspects of the crowdfunding experience in the real world. But, for the players in the CCBG game-world, this construction is problematic. It becomes so because although the game itself helps develop and enhance learning of new lexical associations and abilities which are applicable in the real world, the outcome of the game is unidentifiable. The learning outcome can only be stated as having been achieved or failed once the player transforms into an applicant and applies knowledge gained in the game to a real-world campaign.

Far from being perceived as a weakness of the CCBG, this is a further demonstration of the depth of the contribution. The application of the learning objectives adapted from Anderson et al (2001) was to further our understanding of the need to apply a more robust set of criteria to the development process of any serious game that demands learning to be measured in some way. CCBG failed to adequately account for the learning objectives and the outcomes of the application of these in the applicants learning.

Future research will now be able to both realise a more robust approach to testing these concepts and to the application of the objectives and the outcomes. Supplementary contributions are in the form of dialogue between academics and applicants seeking to crowdfund their visions. The crowdconsent framework can enable a common language to emerge that can be mutually beneficial to both academia and crowdfund applicants. It is also true that the research contribution will add insights for future researchers seeking to understand the crowdfunding process. This is reinforcing the potential for socially constructed dialogues that crowdfunding applicants can have with academics. Furthering still their understanding of the process and empowering future researchers with deeper levels of engagement.

Collaborations of this nature can enable learning by applicants of how the crowdfunding process will affect them. But this research goes further still by championing this kind of cognition and dialogue among advisors and mentors in the crowdfunding eco-system, including the platforms themselves. As such there is tremendous potential to positively impact the crowdfunding process at the micro, meso and macro levels. Further contributions are possible and are being realised as books, conference contributions, papers and workshops are being scheduled (see Appendix I for peer reviewed journal submission).

Partly these aid the distribution of the crowdconsent framework and the learning that has shaped this research and partly these will form the basis for disseminating the potential to create more robust serious games with smarter and better aligned learning objectives with the target groups of these games. This research will also allow the designers of these games and experts in the crowdfunding eco-system, that deliver value for the applicant, to better understand the complexity of their sectors and the varied nature of the needs of the target groups. Serious games designers will be empowered to confidently create games that meet the learning objectives while the crowdfunding tools will be better at delivering for the specifics of the campaigns they are being asked to help. Ultimately this is delivering access to knowledge and understanding that prior to this research had been implicitly available via a fragmented set of literature.

5.5 Future Directions

The most pressing future direction of any study seeking to further examine the use of the framework within a serious game would be the creation of a digital version. Vaunted by the results of the dot voting and interview with respondent Wally, a digital version may take many forms and be accessible via a range of devices. It is an axiom to suggest that time is a precious resource for the applicant in a crowdfunding context. Perhaps a digital version would be more appropriate given this context.

Further tests are due to be conducted soon on the appropriateness of the framework presented as a digital quiz. If successful this version may prove more holistically inclusive of the framework. As it stands CCBG was only able to test a very narrow aspect of the framework, trust. It may even be possible that this type of product may also encourage the applicant to repeat the quiz at various points on their crowdfunding and entrepreneurial journey, strengthening understanding of, and engagement with, the content. For any future studies this may result in a longitudinal study of these effects and enquire about the most effective use of such a tool.

Alternatively, there is also the possibility of a series of mini games being developed that may or may not embrace digital forms. In this scenario the applicant could be encouraged to play various short games at specific points on their crowdfunding journey. Again, this may have the potential to explore the journey of the applicant and how these mini games are effective in affording some support.

In terms of the paradigmatic approach of any future research, the possibilities are there for a deductive view of the research where the hypotheses are established prior to engagement or an opposing view where the direction of travel for the research is open to interpretation as the research journey unfolds. These are all interesting avenues and their exploration is only bounded by future researchers' resources and vision.

In the present version the simplification of the rules is a priority for any future playtests. These are considered too dense at present and work has begun on reducing them to their core while retaining the necessary instruction for the player(s).

Finally, moving away from academia, there may be the possibility of commercialising this framework and the serious games in the future. This is an exciting opportunity aligned with the values of the researcher. From the outset he was determined to produce products that were able to contribute new knowledge while also having a practical outcome for those seeking to crowdfund their vision. His many years' experience of crowdfunding has left him far from tired of the phenomenon. He is more excited than ever at the prospect that this research has the possibility of aiding more great ideas reach their crowdfunding potential.

5.6 Chapter Summary

Until now, as far as the researcher is aware, crowdfunding has lacked a framework composed of success factors for a crowdfunding campaign. This research contributes to knowledge through the creation of the crowdconsent framework, a workbook and a serious game. These products can aid the knowledge and understanding of the applicant seeking to utilise crowdfunding.

The crowdconsent framework is a robust notion that accounts for the main factors identified in the literature, through interviews with experts and the work the researcher has done as a consultant. Triangulating these sources validated the framework. In turn this led to the first product, the Crowdfunding Readiness Assessment (CRA) workbook. This was a dedicated task-based approach which created space for deeper cognition to be brought to bear on the crowdfunding campaign in the early stages.

CRA was critically reviewed and an iterative process of reformatting the workbook and, more importantly, the language used is a work in progress. The outcome is likely to be a digital version of the workbook perhaps as an app for use on devices as and when needed by an applicant. But this, for now, is speculative. What has been empirically confirmed is that the concept of the workbook, which is informed by the crowdconsent framework, is a functioning tool that is fit for the purpose of providing applicants with robust insights into the components that contribute to a successful crowdfunding campaign.

The second product was a serious game; Crowded Comments Board Game (CCBG). Which, based on the crowdconsent framework, sought to use real world interactions to simulate the interactive nature of the lived experiences applicants may expect to experience. This only utilised one section of the crowdconsent framework – *trust*. Future products may be more inclusive, taking a broader view of the framework and applying its various components. Playtests revealed some weaknesses in the four versions which were tested. But there were also reported some strengths in the board game approach.

As suggested by Winn (2009), this process is an iterative one. Four designs were proposed and five playtests took place. The results were fairly stable and with the final three playtests there appear to be some signs of value being provided for the player.

The process of developing these two products has been linear in that the first product, the CRA workbook, had very limited game elements included. It served to validate the framework, not a serious game. In doing so it allowed this research to base subsequent serious game designs on an empirically tested product. It had flaws, but generally it reached its main objective – deeper engagement with the topic.

This research saw the creation of the learning objectives in the cognitive domain of the Anderson et al (2001) learning taxonomy and its alignment with the design phases of a serious game. Through analysis of the DPE Framework from Winn (2009) the research was able to offer deeper insights (see chapter three) and position design decisions of CCBG against a more substantial and dynamic framework that demonstrated the potential ability of CCBG to deliver on one particular aspect of crowdfunding. Engagement with the vocabulary and with fellow players was reported and concurred with empirical findings and session summary sheets completed by the researcher following playtests (Robson, 1993).

For CCBG, player interactions are an essential element of the game play experience and the mechanics and dynamics of the game lend themselves well to this aspect. An adopted lens of social constructionism was used to help guide the design processes and provide a foundational paradigm from which the building experience can be observed and reported.

In CCBG, players experience the telling of their own stories, guided by either their own real-world project or by the fantasy profile cards. If players are reliant on the utility of the profile cards, they will need to fill in some detail and create their own story webs around this business (Ranchhod & Gurău, 2007). By allowing the player to create their own version of the fictional entity, their play experience is one of story creation that responds to the questions presented during play and interrogation by other players, a substantial reflection of the real-world experiences of crowdfunding applicants.

Storytelling experiences thus become a significant design feature of CCBG. The development of this mechanic and subsequent dynamics, were realised early in the design phases. By virtue of the simplicity of the experiential aspect, dialogue and discussion among players were observed in all five playtests.

Problems emerged when players reported being unable to respond adequately to some questions as they did not understand the vocabulary or the syntax within the question. A simple solution was to allow and encourage access to dictionaries during play. This eliminated some ambiguity but still left opportunity for player interpretation of some nuanced terms.

Future games relating to other parts of the crowdconsent framework may or may not be more inclined toward digital productions of some form. The complexity of the crowdconsent framework makes a compelling case for the need to create several mini-games focused on particular components leading to the whole system that is the end framework. However, as an ethnographic research, this presents problems in terms of the temporal allowance allocated to finish this initial research and address the underlying research questions.

Crowdfunding's significance in many sectors cannot be understated and so the contribution of this research is firstly the development and publication of the crowdconsent framework in the form of the Crowdfunding Readiness Assessment (CRA). Following this, using the crowdconsent framework as scaffolding, this research developed a serious game which was tested with almost one hundred players. The results were encouraging.

As a serious game the learning objectives were an imperative aspect in CCBGs development and the process of developing these led to the alignment of the objectives with the game's design. Working through the process of developing these learning objectives was in itself a way of testing CCBG against the constructed expectations of the game's outcomes.

Recognising the ontological position of the research has also led to the issue of interpretation and multiple realities that may find utility in differing aspects of the serious game. This could create tension for the learning objectives and future work may be required to fully explore this potential tension at a deeper level once playtesting has started of any new products. In the extreme, if the game had failed to deliver on these learning objectives then the whole research would have needed revision until a better alignment had been reached, but the initial limited tests, indicate this not to be the case. Wider, more robust testing is needed before any validity is secured on this issue.

The first objective of this research, to determine and clarify the research scope and questions, has been achieved. The questions that arose were:

RQ1) What would an appropriate framework be?

RQ2) How can the framework for crowdfunding help the design of the game?

RQ3) How can the simulated game educate the applicant in making appropriate decisions in the real-world scenario?

RQ1 has been addressed with the development of the crowdconsent framework. The second objective, to test the concept of the serious game in the real world, was conducted with five playtests and four versions of the CCBG. This research delivered a new serious game for educating those seeking to utilise crowdfunding as a funding vehicle for their new, early stage or growth-seeking visions.

In doing so it responded to RQ 2 and demonstrated a proof-of-concept that has the potential to deliver significant impacts in both academic understanding of the crowdfunding process and as a practical outcome in the form of better crowdfunding campaigns as applicants develop their cognition of the crowdfunding process and the necessary components required to fulfil their ambitions. The relationship between players and between applicants and the funding crowds, have been demonstrated to be a dynamic process where the ideas and thoughts of the player / applicant – crowd axis are created in the mind of the agents (Outhwaite, 1987). The relationships these interactions construct is subjective, changing and reliant on past / present social conditions as they are created and realised in the mind of the agent (Mead, 1932).

This presents a greater problem for the social science paradigm of this research in that the remembered reality that the applicant may apply to their planning process post game play may conflict with the reality of the past play. Traditional scientific analysis of the playing of the game would seek to eliminate much of this subjective bias from the research methodology. Taking a position which is removed from the experiment, the experimenter in traditional scientific studies is able to apply objective observation (Burr, 2003).

In the context of this research objective idealism, where these interactions with others are seen as dynamic, form part of the data from which the particular interpretation of the benefits of the game were observed and recorded (ibid). In doing so it addresses RQ 3, even with the caveat that the experiences of playing the game are not reinforced beyond the play experience. There is some evidence that the simulated game can help the applicant by engaging them with vocabulary with which they may have been previously unfamiliar. Interpreting meaning and responding to the questions was sometimes a difficult task for players. But nevertheless, the game delivered a positive experience in general where they felt learning had occurred.

Future work may involve moving the game to a digital format which would enable testing to be conducted on a final product with the possibility of a wider distribution network and thus the possibility of a greater impact. Work is currently underway to identify key suppliers for the reality of this digital version and the most likely workflow needed for this to become a reality.

Alongside this there is also the development of a second version of the CRA with greater clarity and fewer questions to be answered (currently eighty in total). Furthermore, other games are expected to be developed and tested with the potential to impact the player even further. For the researcher and the team behind this work, the most exciting prospect is the impact this work will have both academically (furthering knowledge and understanding) and practically (helping real world projects to become a reality).

CHAPTER 6: CONCLUSIONS

From the crowdfunding review (chapter two) a definition of crowdfunding was established and the parameters of how this differentiated from crowdsourcing was provided. This chapter drew together the main attributes, under eight headings, from the literature that moved the research toward a framework for crowdfunding. We learnt that crowdconsent formed the central aspiration for applicant led crowdfunding activities and that the framework identified the key issues under each of the headings. This was the first novel contribution of this research, a homogenous framework applicable across all five crowdfunding models. Alongside the literature, validation of the framework was completed with experts associated with the crowdfunding eco-system. This saw the construction of the first outcome, a workbook (Crowdfunding Readiness Assessment).

Serious games were now introduced that would rely on the framework as scaffolding for the development of the second educational outcome. Serious games were optimal as they were able to simulate the real-world crowdfunding experience and deliver learning objectives. In doing so the games efficacy was measured against observed learning objectives being met. This was the second novel contribution of the research in that no other research could be located that had attempted a serious game for the purpose of education on the topic of crowdfunding.

Chapter three mainly focused on the utility offered by the DPE framework from Winn (2009). This was a robust framework that was complimented with the introduction of the learning taxonomy from Anderson et al (2001). This combination provides the research with the third novel contribution whereby the process of blending these frameworks developed a serious game with the potential to deliver on the set learning objectives. Without losing sight of the social interactivity of the players in the serious game the DPE framework (Winn, 2009) enabled this aspect of the game to be developed alongside other critical aspects of the game's development, mainly the mechanics and dynamics which in turn needed aligning with the fun aspects. The nature of crowdfunding is reliant on shared experiences of the applicant and the crowd, board games are well suited to the simulation of these same experiential activities (Łodzikowski & Mateusz, 2019; Duffy, 2014; Paris & Yussof, 2012). A board game was thus considered an optimal match with the needs and the limited resources available to the researcher.

In very early versions of CCBG it was reported in playtests that players had no business concept on which to base their responses. Inadequate instruction had been provided to elicit a business idea on which responses could be based. This insight led to profile cards being created providing only a limited amount of information allowing the player an opportunity for fantasy and story extensions (Czarniawska, 2004). It also reflected real world scenarios where crowds are exposed to elements of the story behind various factors in the enterprise but are rarely provided with the whole story in the initial pitch (Buckingham, 2016a & 2016b).

This weakness was not a reflection of the player, but a reflection of the game design in that the instructional capacity of the game had failed to adequately equip the player(s) with an understanding of the purpose of the game and left them in a situation where they felt a combination of embarrassment, inadequacy or insecurity as to the correct or expected response to the questions being posed. Clarity was provided at times by other players when they understood a term or phrase that had proved difficult for others. This reinforced the collaborative game dynamic where conflict with the question and adequate response was suspended temporarily as players negotiated meaning. This was enhanced by the introduction of business profile cards. These cards supported the player by providing limited fantastical information about their project. Once these had been introduced and their consequence realised, they were felt too important to be excluded from subsequent iterations of the game. These cards allowed for the player to build a fantasy web around their role as player in the game (Ranchhod & Gurău, 2007).

Later designs of CCBG keenly adopted this negotiating possibility between players and embedded this aspect of the game's dynamics into the instructions of the game. Therefore, in addition to dictionary and online search access, players had the support of other players within the game. This produced an interesting player outcome. Players were still adversaries within the game but, somewhat paradoxically, were simultaneously acting as a support mechanism where deeper participation through informal and collaborative learning styles was employed to assist those who had not understood some of the vocabulary (Anderson et al, 2001). In effect the players had become partners negotiating meaning and helping each other to articulate a more appropriate response through their comprehension (Weller, 2002). Players had become friendly rivals as opposed to unfriendly adversaries.

For Ito (2016), this style of learning is strongly correlated with the "cultural identities, practices, and material settings of everyday life" (ibid: 91). With a focus on participatory notions of learning, rather than on formal educational processes, Ito's examples are of the kinds of collaborative learning that the first play testers reported in their storytelling experiences. In this setting the learning experience gained through the participatory nature of this collaboration is a side-effect, almost an add-on, to the more fundamental supplications by players. Extending this and incorporating it into the game play became a fundamental change for the next iterations of CCBG where further elaboration was introduced through greater depth on the profile cards.

These issues serve to demonstrate the weaknesses inherent in a game design approach that is being attempted by a non-game specialist who, having limited design experience of creating games for their English language classroom, has ventured out of their comfort zone and been confronted with a plethora of different games and means of making sense of instructional dialogues. This is a justification for the failings of the first iteration of the game (V1) and the consequences resulting from the lack of instruction provided to the players.

The first play testers were, to some degree, allowed to devise their own game mechanics as they progressed through the game world; a good learning experience from a design perspective, but a tactic that lacked confidence in the intentional design of value being created for the player. At times, with certain game genres, lack of instructional support may be a strength (Elias et al, 2012), but with the CCBG it was reported in early play tests with friends and family as a weakness (these were prior to playtesting V1). Due to time constraints V1 was play tested without business profile cards, which were not introduced until V2.

With the introduction of the business profile cards, greater focus was given to the mechanics of CCBG and the match with the overall objectives of play. From the outset there was a desire to keep rules to a minimum and for them to add value for the players not just as instructional dialogue but also on levels that meant clarity in the use of additional materials and tools for progress to be made (i.e. dictionaries and search engines) (Forbeck, 2011).

Designing the actual board was greatly influenced by the construction of the mechanics. To some degree these set the parameters for the physical design which in turn had an influence on the type of board game being produced. For example, allowing the players to support and interact at levels that meant they were providing intelligence for other players meant a new reward structure being introduced. This was both intrinsic as players added value for others and extrinsic in that the player asking additional questions could be rewarded with additional units (the game's currency). Player motivation was therefore situated on several layers; winning the game, succeeding with their campaign, gaining new knowledge and teaching others through their own understanding and broadening their lexical corpus.

In designing the board, one of the first issues related to mechanics was what does the board need to have on it? This is a fundamental question as it defines not just the mechanics of the game to be produced but also the immediate aesthetic of the game to the player (Selinker, 2011). Serious game designers have also to consider the outcomes of the game and what impact their designs may have in relation to these (Winn, 2009).

For CCBG the dynamics were dictated to by the nature of the game's primary input, comments and questions from real campaigns. Many possibilities were considered (e.g. playing cards, randomly generated digital content and even audio recordings of the comments and questions). There was also sensitivity in the constraint of time for the development and play testing of a product. The researcher lacked coding experience but did have a vast experience designing and creating games for learners of English as a foreign language. Therefore, the first iterations would be a track board game using a die. The standard here would be for track squares on the board (tiles) with pieces to represent the players and progression determined by the throw of a die (Elias et al, 2012).

Through iterations with the board and the tiles, informally with colleagues and undergraduates on a game design course at Winchester School of Art (University of Southampton), the style and content of the board began to take form. Colours were also discussed at this early stage and their effects on the mechanics for the player. These serve to demonstrate the granular detail that can impact the overall development of the mechanics.

These were unexpected as the writing process of the games outline began followed later by codification of the rules. To see these areas in action with their influence being exerted on areas far removed from the core topic provided insight for the researcher regarding how the multiplicity of these decisions can have far-reaching outcomes beyond the central issue. Their impact demonstrates the interconnectivity of the design process (Carroll, 2014).

CCBG presents players with a success or failure outcome, intrinsic to the game dynamics. Implicitly, all players are winners in that they have learnt to confidently address and respond to the crowd in an equity model crowdfunding raise. They are also more able to demonstrate a cognitive ability to conceptualise the problems and issues which they may encounter. This affect is a socio-emotional response to the game dynamics and one that aims to leave the player with a warm glow of enlightened knowledge and understanding. Frustration may be felt by players as their learning develops, but these negatives are countered by potential positive outcomes of enlightenment. CCBG finds itself positioned near the middle of this spectrum of enlightenment and frustration. Game dynamics are pre-set, yet the perceived realities of the players have an influence on the game as play unfolds.

Fun was also a desired element of the game's dynamics and mechanics and was an embedded element of the serious game's development. Following Heeter et al. (2003) the establishment of the goals for the CCBG was an early task that led to the development of the following criteria for measurement against which the fun element could be assessed;

- Competition
- Social Interaction
- Discovery
- Advancement and Completion
- Learning.

Reducing Heeter et al (2003) criteria in this way obviated the need for the whole list to be included in a questionnaire format and meant the core components relevant to the game were used in a more focused approach. The criteria for each category in the short questionnaire were set as listed below in Table 74:

Table 74: Fun Criteria Questionnaire (ibid).

Criteria	Definition
Competition	Having fun by showing your superiority.
Social Interaction	Having fun by supporting and doing things with/for other players.
Discovery	Having fun by finding out something that was not known before.
Advancement & Completion	Having fun by finishing the activity.
Learning	Having fun by increasing your knowledge about the real world.

For ease and rapid response after each playtest, players were asked to rank the criteria using a five-point Likert scale where one was low and five was high. Each response was considered a success if it scored four or above on the Likert scale. Additionally, the emotional response to the game was also measured using a three-point scale of unhappy (sad face), neutral (face with straight line representing the mouth) or happy (smiley face). This latter aspect proved useful as a quick assessment of the player's perceived state of happiness immediately after playing, providing the researcher with a sound basis for players recording levels of perceived enjoyment experienced during play (Peketz, 2016). The results were positive; 72% circled the smiley face and 28% circled the neutral face, zero circled the frowning face. Additionally, players were also provided with an opportunity to answer a poll using small sticky dots which corresponded with the dynamics of the game (see section 5.2 above).

Sections 5.3 above discussed the limitations of these methods but there is also a concern that was not addressed at that point with reference to the board's design process. In many ways these limitations were overcome with the composition of the physical board, which was an A3 size paper colour facsimile of the digitally created product. The boards design also made use of open-source or free-to-use software (GIMP, Google Drawings and Paint) to design and render the boards at each phase of the game's development. Design iterations were therefore relatively inexpensive and rapid to produce.

Use of this contemporary and flexible software made post-playtesting adjustments to the design process much more responsive and immediate to feedback. This feedback, in the play test phases, meant the board design reacting to player input. Learning was in the form of a player acquiring new lexicon and practising reacting to these comments and questions from the crowd within the same game without the need for the basic functions of the board game to change significantly (radical changes were not needed). However, new elements are added to the dynamics of the game via these new insights.

For example, the evolution of the board's design, the development of the business profile cards or the invitation extended to players to bring with them dictionaries, whether paper or digital editions were all insights gained via the playtests and were inspired by the suggestions of the players themselves. For both the CRA (Crowdfunding Readiness Assessment) workbook and CCBG (Crowded Comments Board Game), the researcher is in a fortunate position as he has ownership of cultural and social capital that enables him to create, from scratch, viable products that serve their purpose and are open to validation.

Part of this accumulation is his past role as a teacher of English as a foreign language. This role demanded the utilisation and creation of innovative games to help learners in their acquisition of the English language. Interactivity was a regular component of these games which could take many forms, including role play and track board games.

CCBG encourages players to act as both competitor and tutor during game play (cooperative competitor). This in-game duality was problematic for the creation and planning of the learning objectives of the CCBG in that incidental learning or expressive learning is very difficult to articulate or predict (Gunter et al, 2008). This aspect is particularly relevant to the CCBG as a core element of the dynamics of the game is the participatory nature of player interactions. This emphasises the need for any serious game to question the type of interactivity and pedagogy that is sought. Most important in this decision is the judgment on incorporating skill-based and / or concept-based learning objectives (Stapleton, 2004).

Content for CCBG was already established as the real-time comments and questions from the crowd via peer interactivity on crowdfunding platforms and these formed the primary rationale for the game's development (Buckingham, 2016a & 2016b). This results in content that is both relevant and supportive of the main aim of the game; to simulate aspects of the crowdfunding experience where players learn skill-based techniques and concept-based understanding of the process.

This afforded the design process and the pedagogy a clearer idea of issues that might be expected to be addressed in the game. This was further reinforced in playtest two (n = 27 players) where play clearly indicated the potential of CCBG to enhance players' lexical knowledge. Players frequently requested confirmation of their interpretation from other players, not only from their team members but by openly seeking confirmation from other teams' members. This form of embedded competitive-cooperation was an element of the design that was most keenly preserved as new iterations of CCBG evolved.

Using informance methods introduced an element of 'play' into the research as the game's design progressed. Play, in these instances, used imagination to view the changes in the design itself from the player's perspective (Johnson, 2003). This is a speculative method and one that attempts to level-up to the consumer's cognition of the game and their opinions of the game's execution. Johnson (2003) encourages this role-playing method in design research as it encourages an understanding of the player's view of the game. Players may even be able to make suggestions and guide some elements of the design iterations, as was the case in the development of CCBG.

As described in section 5.2 above, the researcher found he was frequently in conversation with *images* of the target demographic for the serious game being developed. Happily this researchers 'conversations' were strictly between researcher and image and not image to image or image to researcher, which perhaps would have been indicative of a more worrying development. This latter point is important as it highlights the significance of informance during this early developmental phase of the serious game. That is that the games dynamics should include an element of support among the players and not just present players with a competitive game, which could have led to a limited learning opportunity (player 'A' wins, ergo all other players lose).

Alternatively, through the supportive mechanics of the game, the players themselves were assumed to adopt different identities and roles that could nurture support for one another while allowing a sole winner to emerge. Furthermore, the opportunity for any player to act as the locus of control within the game meant the dynamics of the game shifted during play. Each player had the opportunity to ask questions and probe for understanding resulting in a more learner centred approach to the experiences of the players (Gee, 2007; Stapleton, 2004; Gargarian, 1996).

Constructing learning objectives was reliant on Anderson et al (2001) framework where these could be clearly articulated. In utilising this matrix, the design of the game was better supported and aligned with the mechanics of CCBG. Playtests were used to check if these criteria had been met, in the event they were observed. The effect of this on the design of CCBG was that even though the content came first, in the form of the initial scrapes, applying Anderson et al (2001) taxonomy table enabled the concerns raised by Laporte & Zaman (2016) to be addressed. That is that the learning objectives are content specific and created with the game's objective in mind from the outset.

In CCBG, players themselves act as tutors and affordance for this role is found in the interactional context of the game's dynamics. This mainly derives from player comprehension of the comments and questions being asked and the ability of the player to provide an adequate answer. These may also be supported by additional comments or input from other players.

To understand and better comprehend the learning objectives the game had set as its goal, the updated version of Bloom's taxonomy (1956) by Anderson et al (2001) was used as the framework for the teaching layer (see section 3.5 above). This framework from Anderson et al (ibid) proved useful in the iterative stages of CCBG's development. The development became more reliant on this framework as guide for developing and to some degree, interpreting, feedback from players. Adapted from Anderson et al (2001: 31), the six categories and sub-categories of the *cognitive* processes that relate to the CCBG context were;

1 REMEMBER: Retrieve relevant knowledge from long-term memory.

1.1 Recognising: Recognise important spatial and temporal associations with the vision.

1.2 Recalling: Recall names and dates of importance to the vision.

2 UNDERSTAND: Construct meaning from instructional messages, including oral, written, and graphic communication.

2.1 Interpreting: Paraphrasing important comments and questions in responses.

2.2 Exemplifying: Demonstrate relevant responses to important comments and questions.

2.3 Classifying: Classify types of comments and questions likely to be asked in the campaign.

2.4 Summarising: Summarise the strengths of particular responses.

2.5 Inferring: Infer positive aspects of a campaign in the responses.

2.6 Comparing: Position the vision in relation to other high-profile campaigns.

2.7 Explaining: Explain features and benefits in non-technical language.

3 APPLY: Carry out or use a procedure in a given situation.

3.1 Executing: Develop a strategy for the campaign.

3.2 Implementing: Determine when and where to use campaign tools.

4 ANALYSE: Break material into constituent parts and determine how parts relate to one another and to an over-all structure or purpose.

4.1 Differentiating: Distinguish between relevant and irrelevant comments and questions.

4.2 Organising: Structure responses so that they flow when addressing critical issues.

4.3 Attributing: Credit the team and offer external praise when appropriate.

5 EVALUATE: Make judgements based on criteria and standards.

5.1 Checking: Ensure responses are based on observed data.

5.2 Critiquing: Make judgments as to best choices in solving a given problem.

6 CREATE: Put elements together to form a coherent or functional whole; recognise elements in a new pattern or structure.

6.1 Generating: Create cross-references to other relevant comments and questions.

6.2 Planning: Demonstrate how observed best practice will be used in a business plan and / or in this campaign.

6.3 Producing: Put forward a convincing argument for both campaign and vision. Create a provisional campaign and obtain feedback on it.

Issues arise when the focus switches to the dynamics of game play. The businesses which form the skeleton in the game may, or may not, be a fantasy construct. Developing games focused on fluency of the crowdfunding experience creates a degree of tension as the objectives must be selected and categorised accordingly. Some of these objectives can only be applied to a campaign with a vision that impacts the real world. Using fantasy business profiles, as is possible in CCBG, results in some of the objectives being unattainable as they demand levels of cognition that are impossible unless deeper research into market conditions and more profound insights of the relevant business models are obtained prior to play (Sherry & Pacheco, 2006). An example of this can be found under the *understanding* layer of the above taxonomy, particularly in 2.6 - *comparing*.

Comparisons may be made with reference to other players' fantasy businesses or to real world situations and known circumstances where concrete comparisons can be inferred. Players may struggle if they lack self-efficacy regarding what comparisons to make, or where to go in order to seek these comparisons (Bandura, 1977). Real world project managers, on the other hand, may have made several comparisons with campaigns, which provides them with an advantage over in-game fantasy business. Thus objective 2.6 may create a tension, and therefore a negative experience, for the player if this objective were pursued. If, however, the game is to be played on more than one occasion then there might be a possibility for comparison. Likewise, if the business forming the skeleton in the game is a real-world entity, or something that is being considered in the real world, then the likelihood of comparative analysis is stronger.

These players of real-world projects are more likely to have conducted research into their competitors and other campaigns that are live on crowdfunding platforms. This could be advantageous when playing CCBG as these players would have gained knowledge and are thus in a stronger position to demonstrate greater understanding of the issues, they may face by making more succinct and cohesive comparisons (Carroll, 2014). This aside, learning objectives related to knowledge acquisition need to be established. Anderson et al (2001: 31) add further support in the development of CCBG with their six categories and sub-categories of the knowledge dimension. Adapted to the context of CCBG, these are set out below. Each of the categories establishes the basic criteria followed by the expected knowledge desired in each level.

A. FACTUAL KNOWLEDGE: The basic elements players must know to be acquainted with crowdfunding or solve campaign problems.

Building knowledge of…

Aa. …terminology: Technical vocabulary or acronyms etc.

Ab. …specific details and elements: Balancing responses with business sensitivities.

B. CONCEPTUAL KNOWLEDGE: Interrelationships and systemic thinking.

Leading to knowledge of…

Ba. …categories: Forms of business ownership or team member titles and roles.

Bb. …principles and generalisations: Impression management techniques.

Bc. …theories, models, and structures: Business model canvas or lean thinking.

C. PROCEDURAL KNOWLEDGE: How to do something, methods of inquiry, and criteria for using skills, techniques, and methods.

Leading to knowledge of…

Ca. …specific skills: Skills unique to the team or the crowd.

Cb. …specific techniques and methods: Methods of market research or communications.

Cc. …criteria for determining when to use procedures: Response formats & wording.

D. METACOGNITIVE KNOWLEDGE: Knowledge of cognition in general as well as awareness and knowledge of one's own cognition.

Leading to knowledge of…

Da. …strategy: Knowledge of communicating and outlining a robust vision.

Db. …cognitive tasks: Cognitive demands of tasks or context recognition of questions.

Dc. …self-knowledge: Awareness of one's own levels of knowledge or roles.

Designing for these criteria as learning objectives proved more difficult to measure in playtests. These are longer term outcomes and as stated above (see discussion in chapter 5 above) and can only be measured once the player converts to a real-world applicant seeking to utilise crowdfunding for their vision. Observations were made which focused on the in-play negotiation and discussions that were produced while play was in progress. These reflected the mechanics of CCBG rather than any learning objective (Anderson et al, 2001). As such the global learning objective (ibid) was the enhanced fluency of the player, educational level learning objectives were to increase comprehension of the kinds of comments and questions that may be encountered, to increase player confidence in terms of ability to comprehend vocabulary and syntax that they encountered in the game, and, lastly an implicit comprehension of social interaction etiquette learnt as an experiential game aesthetic.

This manifested as the ability of a player to generate and ask their own questions addressed to other players. Providing the ability for players to ask secondary level questions as an integral part of the play experience meant players could gain additional rewards (income) in the game world if they asked relevant or good secondary questions. This aspect of the mechanics of the game produced not only a level of competition, but, perhaps somewhat paradoxically, also led to their supporting one another in the game world as they probed with their secondary level questions.

Questions of this nature encouraged an experiential learning opportunity, affording clarity for players and optimising the characteristic of players as friendly rivals as opposed to unfriendly adversaries. The expected outcome of this interactive component is that player's comprehension of the nature of these interactions (e.g. that secondary and follow-up questions and probing are possible) is enriched resulting in increased fluency in this aspect of the crowdfunding experience. Some of these cognitive dimension learning objectives (Anderson et al, 2001) were recorded on the observational tick sheet and some were noted in the session summary sheets. These recorded a player's interactions in the game world and the tick sheet was used to record each observation. However, as mentioned in the discussions in chapter 5 above, this proved difficult to manage when more than one game was being played simultaneously. Therefore, the frequencies of these uses were not recorded accurately and notes were only made on the most salient examples of their use.

As an example, V2 PT1 included three groups of six players and one group of nine players who played simultaneously. This was far from ideal, but afforded the opportunity of recording whether or not these criteria had been witnessed during play.

A more robust approach would have been to have used neutral observers for each group with a checklist to record instances of these observations. Putting these critical weaknesses to one side, all learning objectives from the cognitive dimension were observed and some recordings were made where more than one instance was recorded (see Appendix E below).

A further issue is that the individual groups and players are not identifiable in this format. The original plan was to use one sheet for each playtest, however, it was decided for the second playtest (and subsequently for all playtests) that a single sheet would suffice. This could have been given deeper consideration prior to playtesting allowing groups and tables to be identified so affording this tool greater utility.

Engagement in CCBG partly revolves around storytelling as an intrinsic element of the game play in order for players to gain points. Therefore, emergent storytelling is an explicit expectation of the player. This was an intentional design facet that creates competitive collaboration between players. Competitive in that they are trying to amass their target amounts, collaborative through the use of secondary questions where the player can score additional points if they ask a relevant or salient question (as subjectively judged by fellow players).

The design objective in this respect was not simply to situate learning within the board game, but to allow for the anticipation of unplanned learning occurrences through the interactions afforded in the game. In this respect the secondary questions produced in game by other players play a significant role in allowing learners to gauge how their decisions were being perceived and, ultimately, how these decisions could potentially affect outcomes.

Designing the game was less reliant on the forms of the questions that were to be used in the game's mechanics and more reliant on the learning objectives being a good fit with the intended dynamics. This fits with Marsh's (2011) need for the measurement of the "quality or success of serious games…characterized by the degree to which purpose has been fulfilled."

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Fun was also a purpose of the game and balancing these aspects of learning and fun was a measurable outcome via playtest observations, dot voting poll and questionnaire. The whole iterative process meant that these responses, critical or otherwise, were taken account of and informed newer editions of the game.

This knowledge was afforded via an inductive methodology which informed the original insight and led to the development of the more concrete set of questions addressed in this thesis. Mixed methods were then employed as the exploration of the two cultural products (workbook and game) became the focus. Mapping this game against the crowdfunding framework developed in 2.12 above, this initial explorative game deals with the first section of the spider graph – *trust*. Further games were not developed due to time constraints and the novelty of the approach to crowdfunding.

Tensions are also recognised in that the researcher has a historical subjective track-record of game board production as a teacher of English as a foreign language (EFL). This experience saw regular contact with endogenous and exogenous games introduced to classes for language instruction. Seeking a design methodology for this research was greatly influenced by this past experience. It became apparent quite early in the research design phase that this researcher was more likely to rely on this bias and produce a physical product than to venture into territory less familiar (such as producing a digital serious game), at least in the first round of production.

This was indeed the case with the production of firstly a workbook – Crowdfunding Readiness Assessment (CRA) and subsequently CCBG (Crowded Comments Board Game). This process allowed for greater validation of these products by experts and players beyond the researcher's own circle. The result was a more robust set of products iterated through methods closely aligned with those frequently found in forms of participatory action research (French, 2009; Gustavsen, 2008; McInnes et al, 2007; Reason & Bradbury-Huang, 2001; Patton, 1990).

Ethnographic methods were also utilised with the observational tendency of the playtesting and the subsequent exit interviews with players when CCBG play ended. Here more traditional forms of the ethnographic approaches were adhered to.

The context (or place) in which the research is conducted is presumed to be familiar to most players (for example classroom settings). In this game world the mechanics (rules) and the dynamics (behaviour) of the game produce the context through which the game is experienced as a playful relief from the everyday (Khaled, 2014; Salen & Zimmerman, 2004). Transitioning out of this playful world, the player becomes an agent of reflection and is asked to complete a set of questionnaires followed by talking briefly about their experiences of the game. In this ethnographic approach the flow was as described in section 4.5 above. But to reiterate, the sequences following the play phases were:

1. A questionnaire which focused on the fun aspect of the game interactions and play. As a board game there was a fear that the players might find the game world less stimulating, especially when their demographic was considered. They were generally assumed to be used to video games. In this sense the feeling was that perhaps a board game would be less exciting or fun for the players.

2. Dot voting was a simple concept that delivered quick results on specific topics (Gray, 2010). The most salient utility for the playtesting of CCBG was the rapidity with which players could understand the simple instruction on how to vote with their dot and the near instant results obtained by doing so.

3. Finally, as players were leaving a summative quick-fire round of questions about the game and the observations of the players was also conducted. This was mixed in that sometimes players were getting ready to leave (for example, putting on coats) or were still seated when general questions were asked (for example '*How did you enjoy the game*?').

4. Session summary sheets were completed at the end of each session by the researcher hand writing in a dedicated journal. These sheets summarised the thoughts and feelings of the researcher immediately post-play and were captured within 30 minutes of play ending.

Session summary sheets proved important during the writing-up phase as this moved the critical voice into this space as deeper reflections and more references were made to the literature concerning the experience as an observed, spoken about and then reflected situation. This methodology was repeated as simultaneously as possible for each of the playtests providing a constant and robust set of subjective data. Beyond this it also kept the researcher in touch with the research. It meant regular contact with the writing process as reflections and new findings were uncovered and added to the writing stages.

Developing a serious game for the purpose of raising awareness and educating the applicant in the crowdfunding context, can best be served using the DPE framework (Winn, 2009) as a guide in the design phases in combination with the framework provided by Anderson et al (2001). This is an iterative process that is fluid in that playtesting results mean adjustments to the serious game as mechanics, dynamics and aesthetics evolve.

CCBG's focus is on the teaching and learning of the components that lead to optimal crowdfunding campaign design. Complexity and user utility were kept at the fore of the design process and although alternative methods for teaching a wide body of learners were considered, serious games emerged as the most appropriate, with the potential to deliver learning to individuals with a varied level of experience. Serious games were found to be more flexible while also allowing greater control over the creative content by the author of the game who is designing for specific learning objectives and where skills already acquired by the researcher were applied without the exclusion of selected new skills.

A serious game designed to deliver learning and teaching in the crowdfunding context also has the possibility of blending with other options for learning (for example classroom or textbook), making this approach a more dynamic one where fun and deeper engagement is possible if the design balance is right. Achieving this requires both the DPE framework from Winn (2009) and the learning taxonomy from Anderson et al (2001) to combine with the crowdconsent framework to an even greater level to achieve optimal player experience.

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APPENDICES

Appendix A: Playtesting

Appendix A1: CCBG version 4, Rules & Playing Cards

A1.1: CCBG V4; Rules of Play

Crowded Comments Board Game - Rules

The aim of the game is to be the player(s) to reach their target (or more) as stated on the profile card. If no team manages to reach its target amount, then the team with the most units wins. This is a game of collaborative competition which means that by helping other players on their crowdfunding journey players can earn extra units.

1 Set-up

1.1 This game is for a minimum of 2 and a maximum of 6 players or teams.
1.2 Make sure you have a die (or dice) ready for play.
1.3 One player must be the *Intermediary* (see below).
1.4 Income and loss will need to be recorded.
1.5 Place cards face down in matching colours.
1.6 Place a counter to represent each player, or team, on the 'Launch' square.

2 The Intermediary

2.1 The Intermediary's job is to make decisions. They have the final word in any disputes.
2.2 Before the game starts, players throw a die and the first to throw a 'one' is the Intermediary.
2.3 The Intermediary keeps the accounts of other players or teams.
2.4 The Intermediary may also be a player OR they may decide to be Intermediary alone with the sole purpose of keeping accounts and settling disputes.

3 Profile cards

3.1 These cards hold basic information you need about your company.
3.2 If players have their own real-life venture they may use this *instead* of a profile card.
3.3 Some detail will be missing on the profile card; in this case players must make up the missing information and be convincing if challenged by other players.

4 Green squares

4.1 When a player lands on a **green square** they take a question card and respond to the question.
4.2 Some green squares have a value on them, these are bonuses automatically given in addition to the value of the question.

5 Question cards

5.1 **Question cards** have questions and values on them.
5.2 The value is the maximum a player will receive for answering the question well.

6 Red cards

6.1 **Red cards** are only used when a player lands on a red square.

6.2 The red cards will give players an opportunity to throw again, force them to miss a turn or lose the player money (picking up a 'cool off' red card – see 6.4 below).

6.3 Red cards are real scenarios that will help players understand the challenges they face when they go live with a crowdfunding campaign.

6.4 Some red cards have **cool off** on them. These cards simulate the real-life experience of funders withdrawing a decision to fund a project. If a player picks up one of these cards, they must show it to the Intermediary who will deduct this amount from their account's running total; the next player now gets to throw.

7 Flat squares

7.1 In a real-life crowdfunding campaign, there are times when nothing seems to be happening. This is simulated by yellow 'flat' squares. When a player lands on these they just have to wait until it is their turn again. Players on a flat square may not make *any* income until they have moved off the flat square.

8 How to play

8.1 The Intermediary must list a column for each player. This will record their income/deductions.

8.2 Each player takes a different profile card. This will be the players 'businesses.

8.3 Begin on the 'Launch' square. The first player to throw six starts. Throw again to move.

8.4 If players land on a green square they take a question card and respond to the question.

8.5 To gain units, answers must be judged convincing by the other players.

8.6 If answer is considered good/convincing then award the full amount on the question card.

8.7 If answer is not convincing/good, then award less than the amount on the question card.

8.8 Players asking follow-up (or secondary) questions can also earn an additional 3,000 units if these are judged good questions by other players. This does not apply to those on the 'flat' squares (see 8.10 below).

8.9 Landing on a 'bonus' green tile means that player receives the bonus amount no matter how well they answer the question. These amounts are automatically given on top on anything earned by answering the question (see 4.2).

8.10 If players land on a red square they must follow instructions on a red card (see section 6 above).

8.11 If players land on a yellow 'flat' square they must wait on this square until their next turn. Players on these squares may not earn any income from asking questions of other players (see 8.7 above).

8.12 Players move around the board until they reach the 'Crowded?' central square. Regardless of whether they have reached their target amount this ends play.

8.13 The winner is the player with the most units OR the player who has reached/surpassed their target amount by the highest amount.

9 Example game play:

9.1 Player (Bob) picks-up a profile card. This will give her basic information about her company.

9.2 Bob throws a six to start, and then throws a 1 to move. She lands on the green square with a 50,000 bonus.

9.3 The Intermediary records 50,000 in Bob's column.

9.4 Bob picks a question from which reads: "What are your plans for expansion?", it is worth 10,000.

9.5 Bob answers the question in the context of her profile card.

9.6 If other players think this was a good/convincing answer, Bob gets 10,000.

9.7 If other players think this was a rubbish answer she gets less than 10,000.

9.8 If good questions are asked by other players to Bob, those players also score 3,000 per good question.

9.9 The actual value of Bob's bad response (9.7) will be determined by the other players.

9.10   Bad answers are always awarded less than the units on their card - even zero!

9.11   Other players must decide the amount to award.

9.12   Intermediaries are there to help if players cannot decide or in case of disputes.

10 Unknown vocabulary

10.1   There may be occasions when players encounter new or unknown vocabulary. If this happens players have a choice of either asking other players for the meaning, trying to bluff it or they may ask for time to search for the answer (e.g. in a dictionary or an online search).

10.2   Penalties may be incurred for getting vocabulary wrong or taking time to research meanings.

10.3   Likewise, additional units may be awarded for players helping other players.

10.4   This shall always be at the discretion of the Intermediary.

10.5   If players are taking too long to answer a question; a time limit may be introduced.

A1.2: Original Six Profile Cards

Figure A1: Drain-age Plumbing

Figure A2: Think Before You Act Theatre Company

Figure A3: Ball Game Studio

3 Ball Game Studio (3BGS)

Background:
- Video game studio.
- Has been running for nine years.
- Fours ago they released their best selling & most respected game, Ninja Three Ball.
- They have had a legal battle over Ninja Three Ball, an intern claims they used her work without permission.
- Courts found in favour with intern and demanded 3BGS pay her an undisclosed sum. 3BGS will start appeal next month.
- They have been criticised for their slow move to online & mobile gaming as consuls decline.

Team:
- Chris Parker is the CEO. Joined 3BGS five years ago & immediately brought success with Ninja Three Ball game.
- Jake Harris is the CFO & is one of the founding partners. He is a controversial figure but well respected.
- Samantha Kramer is the CMO. She joined two years ago.
- The board includes members with industry knowledge.

Finances:
- Raise: 500k for 25% equity (First 5k will be 'A' class shares with voting rights, remainder will be 'B' class with no rights).
- Purpose: Development & release (in two years) of new game building on the success of Ninja Three Ball.
- Gross profit for the end of the last financial year was 180k.
- Year before this 3BGS made a net profit of 163k.

https://pixabay.com/en/ball-yellow-pool-closeup-life-1392602/

Figure A4: Purple Cloud Design

Purple Cloud Design (PCD)

Background:
- Web design & branding agency.
- Has been running for three years.
- Finalists last year for the prestigious Agency Awards.
- Recent pitches have been made to three major fashion brands & one major perfumer.

Team:
- Ross Kempton is the CEO. Has been CEO since the company formed three years ago.
- Peter Zimmerman is the CFO & is one of the founding partners. He is a controversial figure but well respected.
- Katherine Bonn is the CMO. She worked with Peter at his former company, she joined PCD two years ago.
- The board include two very high profile individuals as non-execs, Sir Harold Williams & Dame Judith Blunt. Both have backgrounds in this industry.

Finances:
- Raise: 300k for 20% equity (First 5k will be 'A' class shares with voting rights, remainder will be 'B' class with no rights).
- Purpose: Expansion of the sales department & new product launch next year.
- Gross profit for the end of the last financial year was 105k.
- Year before this PCD made a net profit of 22k.

https://pixabay.com/en/design-logo-icon-text-web-pink-751452/

Figure A5: Fetching Fido

Fetching Fido (FF)

Background:
- Dog hotel & grooming service.
- Has been running for three years.
- Won a prestigious Doggy Groom of the year (seven months ago).
- Recent controversy (12 weeks ago) after a dog managed to escape & was hit by a car. The dog lost a leg.

Team:
- Laura Chadwick is the CEO and founder. She is a qualified vet.
- Rachel Harding is the CFO & is one of the founding partners. She also works full time at FF.
- Susan McCantock is the CMO. She worked with Laura at her former company, she joined FF one year ago.
- Laura's partner is a high profile politician.

Finances:
- Raise: 400k for 25% equity (all 'B' class shares with no rights).
- Purpose: Refurbishment of the hotel & new veterinary facility which will be open to the public.
- Gross profit for the end of the last financial year was 88k.
- Year before this, FF made a net profit of 15k.

https://pixabay.com/en/dog-cartoon-fido-brown-art-fun-163527/

Figure A6: Golden Hammer

Golden Hammer (GH)

Background:
- Carpentry service specialising in oak buildings.
- Has been running for five years, slowly growing in this time. Has a strong reputation for quality.
- Last year they won an award for 'Best Oak Building' in a national competition. As a result there are more enquiries this year.
- Toby Thompson has been asked to front a new TV show about new and innovative wood buildings across the country.
- The team think they can start to expand by sourcing new work in the South East and North West markets.
- Research demonstrates strong demand in these areas over the next five to ten years.

Team:
- Toby Thompson has been the MD for 5 years & a carpenter for 12 years.
- Rosa Tanta, company secretary & PA to Toby has been with GH for three years.
- Mark Sellers is the company marketing & sales director. He's been with GH for two years.
- David Seymour is the accountant and has been with GH for four years.
- Jack, Michael and Pete are all qualified carpenters who work full-time. They've all been with GH for three years.
- Ross is an experienced carpenter who works on a zero hours contract and comes in when things are really busy. He also helps out with paper work.
- There are several other freelancers that work for GH on an ad-hoc basis.

Finances:
- Raise: 350k for 10% equity (all B class shares).
- Purpose: Expansion of the operations.
- Net loss for the end of the last financial year was 15k. Blamed on lack of marketing/sales focus together with purchase of new machinery.

https://pixabay.com/en/hammer-tool-carpentry-carpenter-296730/

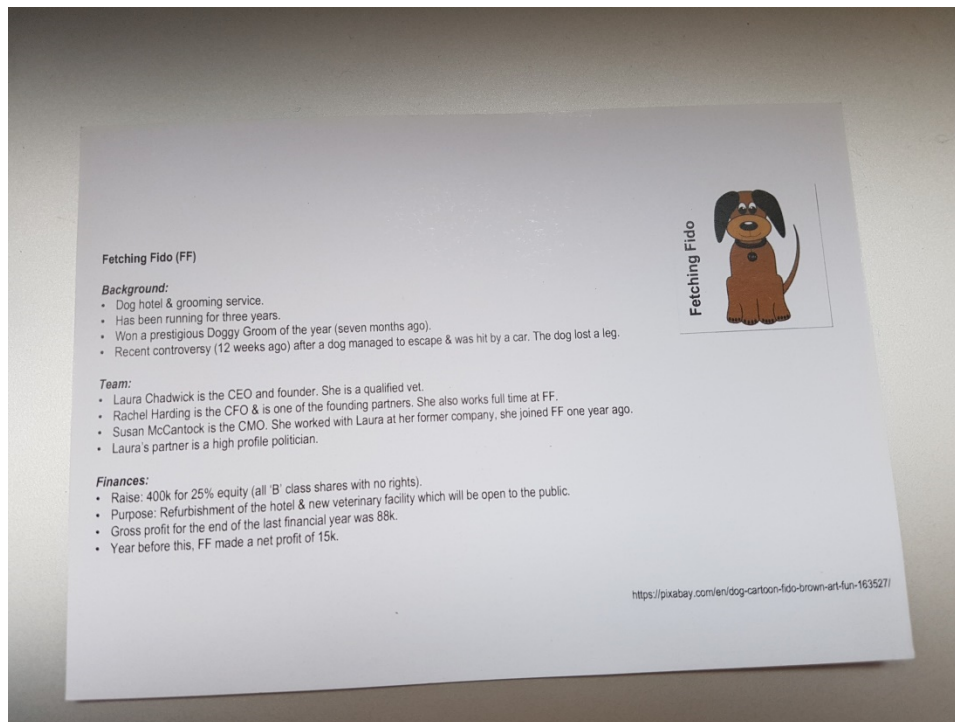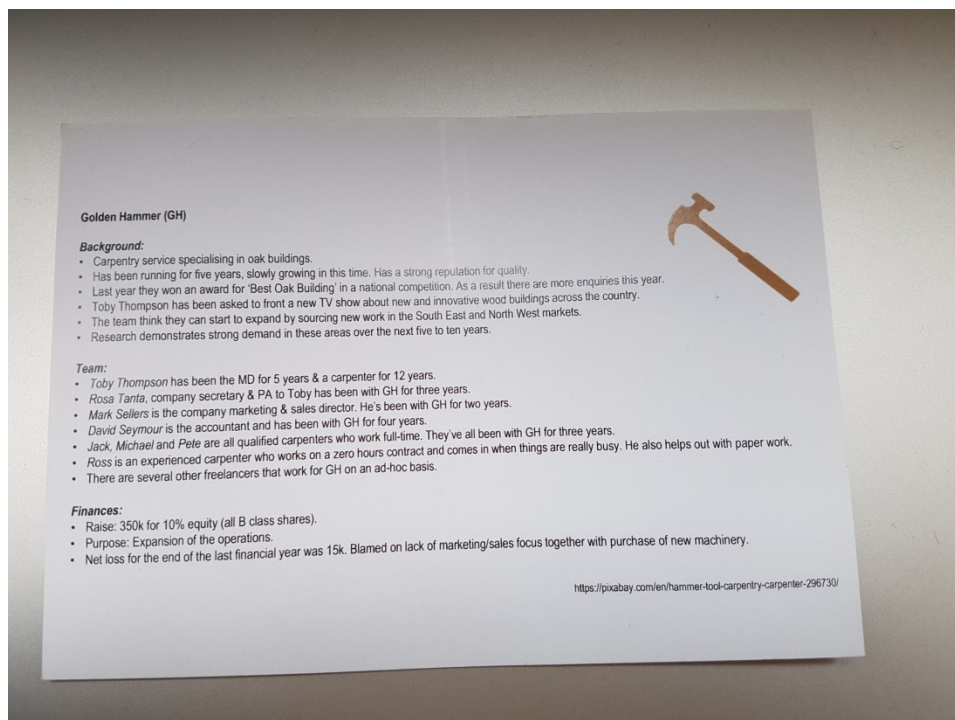**A1.3: New profile Cards: InvoiceChaser**

Investment sought: £1,000,000
Equity offered: 3%
Valuation (pre-money): £30,177,600
Introduction
An astonishing 95% of all businesses in the UK have fewer than 10 employees. These 5 million freelancers and micro-businesses all have one thing in common: the need to stay on top of their business finances. But this isn't as easy as it sounds; chasing down paperwork, wrestling with spreadsheets and grappling with tax returns is time-consuming and stressful. That's why we founded InvoiceChaser.

Since 2007, we've been on a mission to democratise accounting for freelancers and micro-businesses. Our award-winning, easy-to-use cloud accounting software is specifically designed for how these businesses work. InvoiceChaser helps them manage their business admin, gives them real-time access to their financial information and, with its unique tax filing capabilities, helps them relax about tax.

With an ever-evolving product and more than 40,000 enthusiastic customers, we now want to take InvoiceChaser to the next level and help even more freelancers and micro-businesses take control of their finances.

Intended impact
Financial management and tax compliance is a major source of pain in time, cost and anxiety for micro-business owners who want to spend their time growing their businesses - not tackling mountains of paperwork.
We have found that traditional accounting software can feel impenetrable and over-complicated. Usually built by accountants for accountants, it tends to be more suited to the demands of larger businesses, leaving freelancers and micro-businesses out in the cold.

InvoiceChaser is different. Easy to use and jargon-free, it's designed specifically for micro-businesses and the way they work. InvoiceChaser helps them take control, and makes them feel smart - not stupid - about their finances.

As InvoiceChaser is cloud-based, customers can take care of business from anywhere they have an internet connection, including their smartphone. They can:
- Nail the daily admin by taking care of everything from estimates, invoicing and time tracking, all the way through to tracking bank transactions, out-of-pocket expenses and payroll.
- See the big picture by tracking their cash flow and profit, and staying on top of upcoming tax deadlines.

Relax about tax by filing Self-Assessment, VAT and RTI payroll returns directly to HMRC - many of which are completed automatically.

InvoiceChaser

Over 40,000 paying subscribers already use InvoiceChaser to manage their business finances. Our customers tell us that as well as saving them time and money, InvoiceChaser transforms the way they think and feel about their finances.

We now want to bring these benefits to the wider micro-business community and believe the impact could be huge. The Federation of Small Businesses estimates the average small business spends about 12 days each year on tax administration alone. Our customers tell us that InvoiceChaser saves them huge amounts of time when it comes to filing their VAT and Self-Assessment returns alone. If we could reach all 5 million freelancers and micro-business owners in the UK, we could free up millions of days for them to grow their businesses and delight their customers.

Substantial accomplishments to date
- We've built an award-winning cloud accounting product, a loyal base of over 40,000 customers and a talented team of 70 employees.
- Most importantly, our customers tell us they love InvoiceChaser and that it has transformed their relationship with their finances. In our most recent survey customers gave us an incredibly high Net Promoter Score of 76 - this is way above the industry average of 26, and on a par with world-leading brands like Apple.

Successes include:
- Best Practice Software at the British Accountancy Awards.
- Multiple wins at the Software Satisfaction Awards, most recently winning both the Small Business Accounts and Expense Management categories.
- Ranking in the top 20 of the Deloitte Fast50 list of the fastest-growing tech companies for the past two years.
- Listed in the 2014 FinTech50 rundown of Europe's most innovative financial tech companies.
- Raising more than £7M from highly-respected technology investors to accelerate our product development and growth.

Monetisation strategy
As a subscription-based business, we make money by charging customers a fee to use InvoiceChaser. To provide this service and grow the business we spend money on:
- Providing, maintaining and supporting InvoiceChaser.
- Conducting marketing and sales activity to bring in new customers.
- Investing in further product development.
- Paying for some administrative overheads.

InvoiceChaser

We generate subscriptions through three channels:

Direct: Business owners can subscribe directly to InvoiceChaser on a monthly recurring basis at £19, £24 or £29 per month (plus VAT) for sole traders, partnerships and limited companies respectively. We offer a 30-day free trial before users enter their payment details to start their subscription. A discount is available for customers who commit to paying annually.

Just as it's hard to fill a leaky bucket, it's difficult to grow a subscription business if lots of customers cancel, so customer churn is a key business metric for us. As of March 2015, our direct customer churn was 1.5% per month, significantly below the 3.2% average for SaaS companies selling to small businesses. Low churn gives us predictable revenues and high customer lifetime value.

Accountancy practices: Over 750 accountancy practices use the platform and we count some of the largest specialised accountancy firms for freelancers as our customers. Accountants include InvoiceChaser for their clients as part of their monthly accountancy fees. Practices access their clients' accounts from a single dashboard without having to log in to each account separately. Accountants also benefit from analytical tools, including exception-based reporting that highlights which clients' accounts require attention.

Partner organisations: InvoiceChaser is available on a monthly subscription basis through partner channels such as Barclays' Bank (in their MyBusinessWorks package), and with both Lloyds and Bank of Scotland as part of their Business Toolbox app store.

Use of proceeds

Each time we've raised investment finance to accelerate, we forecast to return to breakeven on those funds within 18-24 months. We're on track to break even within this period from our existing financing and growing healthily, but we think the opportunity is big enough for us to accelerate that growth even further.

We've already built a significant, sustainable business in the UK and plan to use this investment to:

- Improve the customers journey
- Grow our product and engineering teams
- Grow or technical support
- Expand our app for customers.
- Expand into Europe, Asia and the America's.

A1.4: Switchets

Investment sought: £55,000
Equity offered: 4%
Valuation (pre-money): £1,323,000

Introduction

Light switches and plug sockets have been around for over 100 years, yet regardless of the huge progression in technology in the recent years, they have been unmodified. They haven't taken advantage of modern tech, and are consequently extremely dated.

We aim to reinvent and replace the existing standard of light switches and plug sockets, by creating a new, smarter, and more efficient standard, to be installed in all new builds globally.

As you can see below, our products look identical to standard switches, they can still be controlled by hand, in the exact same way you would with an ordinary switch. However, they can also be remotely controlled via a range of remotes, sensors, and a smartphone app - in ways that reduce energy consumption, add convenience, and create a safer environment. See examples of uses below.

Intended impact

- Reducing energy consumption
- In the UK alone this energy wastage equates to nearly 16% of the nation's energy bill, in simple terms we're wasting £1.3 billion in energy every year, which is enough to power almost 2.5 million homes.
- Turn off all your lights and appliances from the touch of one button, before leaving the home unoccupied, or before going to sleep, saving you money.
- You could connect up an energy efficient occupancy sensor to our switches within seconds, no need for re-wiring; meaning your lights will only be on when they need to be.
- We are developing our switches to automatically flick themselves off when they detect an appliance has been left in the standby mode.

Adding convenience to your life

- You could turn off your light switch from your bed via your smartphone.
- When your smartphone alarm sounds in the morning, Switchets could automatically flick on your bedroom light.
- You could monitor the amount of energy your home is consuming, in real time, making sure no energy is being wasted.
- You could limit the number of hours a games console will be powered via our plug sockets, by setting cut of times (e.g. 9pm) or daily usage (e.g. 2 hours per day).

Creating a safer environment

- Next time your child stumbles out of bed in the middle of the night on their way to the toilet, Switchets occupancy sensor would automatically activate your lights to keep them safe.
- Elderly/disabled could control their light switches and plug sockets remotely, consequently reducing the amount of movement required.
- You could cut off power of low-level plug sockets to prevent the little ones getting shocks if they stick objects inside.
- You could turn on your lights while on holiday, giving the impression your home is occupied to help prevent burglaries.

Capturing Data

We plan to develop our plug sockets to communicate with the plugs inserted, feeding back information relating to the exact appliance being used. E.g. iPhone charger was used for 57 minutes on Monday morning in France, consuming 43.8w of energy - useful for the consumer and for us as a business, and valuable for manufactures of the appliances.

You could monitor the amount of energy that's being used within your home from each individual socket - useful for splitting the bill shared accommodation.

Substantial accomplishments to date

We have been working with some of the best engineers and designers in the world to design/develop our products to create many prototypes to test the functionality, both from a mechanical and electronic point of view.

We currently have a patent pending on our unique switching mechanism.

We are in talks with British Gas, with whom we are currently discussing a UK partnership to integrate our products into their existing connected home product, Hive, which has been installed into over 150,000 homes in the UK.

We have received international publicity from Bloomberg TV, Sky News, BBC Radio, TechCrunch, Mirror, The Times Newspaper, Kent Online, and lots of other platforms.

Jason Bourne, the Vice President of a multi-billion-pound global energy provider invested in Switchets, bringing with him his huge amount of knowledge and global customer outreach.

We're currently in talks with Berkeley Homes, one of the UK's largest homebuilders.

<center>**Switchets**</center>

Monetisation strategy

As a manufacturing business we would generate revenues by selling our hardware (physical products).

We aim to supply our products at the prices shown below - please note, wholesale prices will be cheaper.

1 gang light switch - £8.99

Single plug socket - £9.99

Double plug socket - £15.99

Occupancy Sensors - £24.99

Remotes – Range from £11.99 to £24.99

WiFi Hub - £59.99 (required for our app to work with our switches)

iOS & Android Application – FREE

Long term

We plan to generate additional revenues by monetising the data that our products will be capturing via our App. For example, Google acquired Nest, the smart thermostat for $3.2bn; one of the main reasons for this was due to the data that could be captured from their thermostat.

Use of proceeds

The focus will be to complete the development of our product range. British Gas, one of UK's largest energy providers have asked us to provide our products for testing, however we require further development before handing them over were we to be approved by them.

We will be growing our team to complete the development of our hardware (switches, remotes, and sensors) and software (iOS, Android app, and web app) - allowing us to then begin the manufacturing stages.

Completing the development would provide us version no.1 of the product range, ready to manufacture and distribute. This would allow us to hand over to British Gas for testing, along with selling the products (as we will have the finished range + confirmed unit costs). Thus, we could get initial orders in writing from homebuilders, distributors, and retailers.

A1.5: Magicandz

Investment sought: £150,000

Equity Offered: 15%

Valuation (pre-money): £850,000

Introduction

Enabling users to embed micro-transponder technology into their hands, Magicandz are aiming to be early movers in the human implantable technology market. The company has featured on BBC, Channel 5 and ITV News and is raising funds for further research and development.

Magicandz develop and offer human implantable micro-transponder technology using professional medical procedures for a diverse range of purposes.

Magicandz implants enable users to embed RFID and NFC technology into their hands. This means those with implants can replace key fobs, ID cards, and similar.

Magicandz have also started development of car ignition systems and a range of other devices, alongside the development of different types of micro-transponders for bespoke applications. These examples may sound useful, but the real driver for the technology and launch of Magicandz is in the medical market - assistive technology and data security, such as passport and payment systems.

Our team consists of:
Nigel Farrington-Hythe – Founder and Director

Nigel's background is in business start-up. Having started his first company while an undergraduate student. Nigel's business portfolio now encompasses a wide range of technology-based companies and he has been referred to as a serial entrepreneur. Nigel also owns his own business consultancy MagicWordz, helping budding entrepreneurs get their business ideas off the ground. Nigel is now committed full-time to the Magicandz project.

Dr. Seth Potsan – Medical Doctor & Director

Seth is a consultant Anaesthetist specialising in Intensive Care and has worked in the NHS for 25 years. Seth provides extensive medical knowledge and enables us to install human implants using professional medical procedures, ensuring a high level of pre and post implant care. Seth will be providing implant installation training as we roll out the practice across geographic regions, working full-time with Magicandz once we are fully funded.

Spike Sorley – Investor & Director

Spike is director and owner of the Spikey Group, operating a range of companies within the aeronautical sector, providing a range of aeronautical components and solutions. Spike has 35 years of business experience and acts as business adviser and investor to Magicandz.

Intended impact

The potential for human implantable technology is very much just starting to be noticed in the mainstream and Magicandz feel this market is taking off now, getting in first will be our ultimate winning ticket and we would like you all to join us!

Substantial accomplishments to date

- Since 2015 we have:
- Confirmation from the Medicine & Healthcare products Regulatory Agency (MHRA) that our implants are not regulated medical devices.
- A full implant processes in place, ordering systems, manufacture in the Far East and client agreements drafted.
- In August 2017 we featured on BBC News, Channel 5 News, ITV News, The Telegraph, Daily Mail, New York Post and have been approached to feature on The One Show next year!

Monetisation strategy

There are multiple revenue streams: implant sales, implant installation, hardware installs and R&D services.

Magicandz sell a range of "DIY" implant kits, available to purchase directly online by end users. Although we do not advocate the end-user install approach, we provide the packs in order to compete with our main competition in the USA.

We then plan to sell these to other Magicandz approved installers around the UK, alongside a chargeable certified Magicandz installer course for qualified medical doctors, adding an additional revenue stream. We plan to sell the packs with a 1000% mark-up on the cost price of the kits we produce and a 300% mark-up on the price of the implantation service.

Use of proceeds

Magicandz is looking to raise £150,000 to:

Fund the initial marketing around human technology implants and Magicandz as a business

Fund initial phases of research and development around payment systems and medical applications via implants

Fund expansion of the Magicandz team, with experts in cyber security and contactless micro-transponder technology systems.

There are no debts, borrowings, director's loans or similar. All initial setup, website, initial implant stock and similar have been paid for in full via private investment.

An overall exit aim would be an acquisition by a larger medical or tech company in year four.

A1.6: Playing Cards

Figure A7: Green Cards (example).

Who are your nearest competitors? 5,000	What is your USP? 5,000	Fantastic to read you have a partnership with a major UK supplier. How long have you been in this partnership? 5,000
Fantastic to read you have a partnership with a major UK supplier. Do you have exclusivity contracts with this partner? 5,000	I could not see from the business plan if you are still seeking a manufacturer? 5,000	I am very familiar with Company ABC and Company XYZ, are there any other competitors in this field? 5,000
As well as offering the investment here on this platform, have you considered a reward type campaign as well? 5,000	How many of these products can be stacked together safely? 5,000	Does the community know your team and associates contribute to the forums about this product? 5,000
Your stock seems very low for a company of your size. Could you explain? 5,000	Your quality is claimed to be higher than the average, so why the cheap prices? 5,000	Do you intend to develop an app? 5,000

Figure A8: Example of positive red card.

Figure A9: Example of negative red card.

Appendix B: Typed Session Summary Sheets

These session summary sheets were hand written with pencil on paper, they are a record of the researchers own thoughts and reflections written post-play on the day of the playtests. Below is a typed reproduction which remains as true to the original as possible, including grammatical and spelling errors.

Why typed and not photocopied in? These notes were written at speed and the authors hand writing is the subject of much confusion when written at leisure, so to avoid confusion these were typed.

Table A1: Abbreviations Used in Session Summary Sheets:

Abbreviation	Meaning
@	at
A/Cs	accounts
app	applicant
B4	before
BP	business plan
Camp.	campaign
CF	crowdfunding
'cos	because
CRA	crowdfunding readiness assessment
Dest.	destination
Dev.	developed
'em	them
EN	English Naturally (private school)
Esp.	especially
F	female
GDH	Games Design Hub
Intro.	introduction
Lit.	literature
LOs	learning objectives
Ls	learners
M	male
Obs.	observation
Obs	obvious / obviously
Opp.	opportunity
Peps	people / players
Poss.	possible
Probs	problems
PT	playtest
Qs	questions
SGs	serious games
S/up	start-up
Tech	technology
V2	version 2
Vocab	vocabulary
vs	versus
WSA	Winchester School of Art

B1: Playtest 1

There were lots of laughs – happy faces.

1 x F seemed to struggle with vocabulary – repeated the same request for clarity twice. Seemed confident though – she asked!

Setting (classroom) was perhaps not the best environment – we played just before lunch and wondered if peps needed to eat? The lighting was good – although one comment was for more light on the board!

Found it hard not to help them with the rules and not give too much away @ the beginning – i.e. intro.

Verbal exit feedback positive – 2 x comments about how nice it was to 'play' a game rather have a more formal lesson / lecture.

Couple of comments about the vocab. – thought it quite difficult. I did notice several players reaching for their phones – I presume they were looking up words as they then responded with a definition to the word.

1 x M very quick to get defs. – app? Yes – exit.

The game definitely got quicker as they progressed. Couple of comments during play about length of play time (too long) + in the exit interview 3 peps mentioned this (50%!!).

Could try and re-design with less squares?

Comment on values also valid = random values. Could I make value more appropriate for the Qs being asked?

But does / would that reflect CF?

There's a tension in the need to stay true to the CF experience & the design of the board game…

1 x M comment on colour = good but perhaps could have a more defined colour for Qs.

The group seemed to be having fun – they had a lot laughs even though the flow seemed to be a bit jittery @ times as they stopped & thought about the Qs & got a response together – one or two moments of awkward silence – but nothing extreme.

Noticed one F particularly helpful in aiding some of the other players – also first to give money [consistent] – generous person?

Quite outgoing too → record no negative comments from her actually … 1 x M a couple of comments I thought a bit harsh – new vocab. obs had business experience / savvy.

Thought set-up good. No probs. with instructions – players got it & got on with play quite quickly. Although it took more time than anticipated to read through the instructions – clear to me!! Perhaps these need clarity?

! Most comments seemed to be centred on the pattern of the board – i.e. could it be round or spiral? 1 x M also commented on being forced to lose £ for no fault of their own – i.e. <u>chance</u> they didn't like that. – But that is a true reflection of CF a vision.

Overall I feel happy that the general principles of the [*GAME*] have been achieved. Players generally seemed happy & showed some signs of enjoyment / fun during play.

Conversion of text from Playtest 1 session summary sheet into a word cloud using wordclouds.com, produced the following graphical representation.

Figure A10: Word Cloud - PT1.
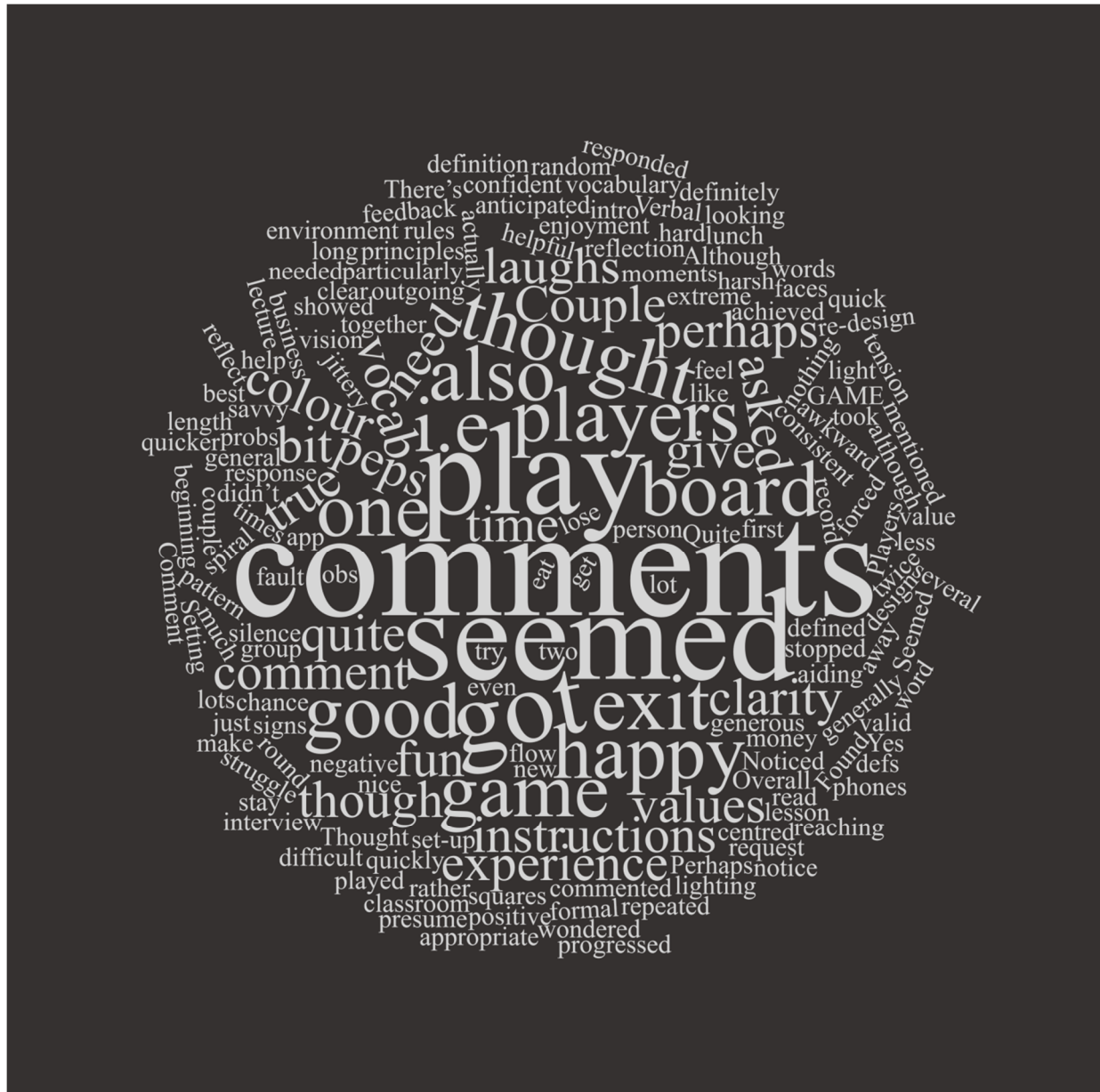
B2: Playtest 2

Young group of players seemed quite fatigued @ first & a bit dis-respondent. But they got into the game. Lots of vocab. unfamiliar to them – lots of checking & reassuring. group knew each other before test (EN group) – so they had the advantage of knowing each others personality prior to play.

Lovely to see them come together. Some surprising arguments too.

Real passion from about half way through game (played for just under an hour). this group negotiated well together – they wanted to win, that was obvious, but they also seemed really intent on helping one another get the vocab. / Qs.

There was a real sense of team work among the players – much more than the last playtest.

This surprised me – 'cos of age – own biases coming through there!

Briefed them before play commenced & then they read rules & played.

Seemed to take to the game much more quicker than PT1 – but is that my memory or the reality?

I think it worked well removing chance cards. But of course – exit comments about not rolling a dice for chance. They meant there was no room for chances to gain or lose during the game – this was then picked up on by another player who agreed. Seems I can't win! So maybe next iteration I could include this.

1 x F also made a comment about length of play – she also agreed with the players who had suggested a vocab. sheet – something they could refer to as a help / cheat sheet during play. I'm reluctant.

I feel this gives them too much & might mean they rely on the provided sheet as a kind of bible. The whole point is that they explore & interact as they play. I don't feel this would be the case if they were handed the answers – where's the learning / challenge in that?

1 x F also commented that when she 1st saw the game she thought it might not be fun for the players – but she was happy to admit she was wrong!

I do still think this version is too long.

I feel like I need to add extras all the time but actually I've ended up making the game too long & perhaps overcomplicated the thing.

Next version might & intro. a simpler approach to the tiles & maybe put the Qs on the tiles with separate values.

3 x players stated they would prefer to have a value that relates to the Qs – not a bad idea – but does this reflect CF?

Will need to think about this.

Overall happy with today's test.

Still too long & issues over Qs + values – need adjusting – but the principle behind the game seems to make sense & it works!

When asked did they feel they had learnt something – all said yes. Big ego boost!!

XX [colleague at University of Southampton] also mentioned a show / tell session with games Ls @ WSA – they might have some better ideas about the games design on the board & the mechanics.

Generally happy about mechanics but still feel something is missing.

Wonder if room could have been configured better.

Conversion of text from Playtest 2 session summary sheet into a word cloud using wordclouds.com, produced the following graphical representation.

Figure A11: Word Cloud – PT2.
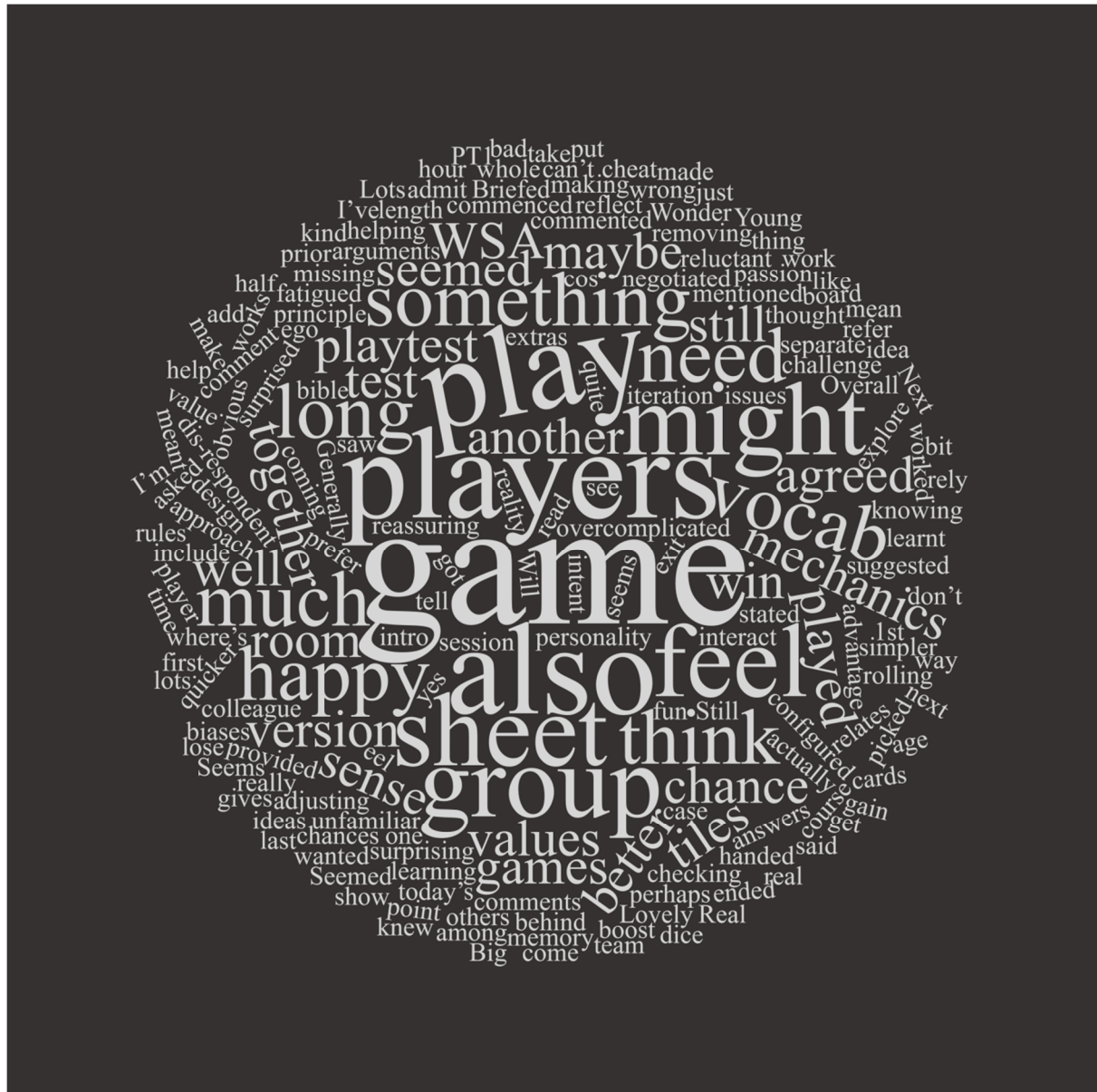
B3: Playtest 3

Big change in this version as values now not on tiles.

Comments:

1x M liked idea of keeping secret track of value got in game.

1 x M Thought it was more challenging not knowing what others had got – concentrated more on own figures.

Teams were organic this time: i = 1 x 5 players / ii = 1 x 5 players / iii = 1 x players.

Team iii chose to compete against each other – all six profiles used. Good dynamics among them – they certainly got into the game much quicker – rules took some time to get for ii – not sure why but saw members from 1 helping them to get game going.

Perhaps we should have told them the teams based on the level of English – should all about the same but in reality there is a slight weakness in a couple of the male.

Loved the fact the teams mixed well in terms of gender – these was no all male / female teams. Atmosphere good – they seemed in high spirits as they arrived – but know they had been briefed before arrival.

The board seemed to make play much more fluid than the last session – some really struggled with vocab. though – esp. in ii – noticed they were using dictionaries on phones much more – good use of tech.!

Team iii seemed to be most competitive among themselves – was this because we had six businesses? Did this make it more competitive?

Not sure actually.

Something occurred to me – game play like a candle – lit (play) & light emitted (social) – burns low (flow) - & then goes out & there's no trace of the light – same here – once this test is over there is no trace its gone & will never been seen again.

So I guess these notes become even more important for this reason?

This was a happy Thursday & am pleased to have spent it with these guys playing this game. I got a real feeling of happiness watching them negotiate / argue / support / ask Qs during the play. XX [A colleague who had seen previous iterations of the board] also mentioned that this game board seemed to be a better one than had been the case on the last one.

Perhaps the configure of the room helped – were we in a better or more relaxed mood giving intros & walking everyone through the game?

There were a couple of comments on the length of play – they played for just over one hour.

1 x F = game too long.

1 x F = could we make the values higher & have less Qs?

Fair comments I thought.

Was I being lazy there?

Had similar comments from previous PT & not really reduced the # of tiles.

Perhaps this does need addressing next.

Maybe some comms. in the questionnaire – will see.

Exit very good though.

But 2 x F – together – did mention the competitiveness of the game – thought this could be less in some way.

Curiously I noticed these arguing in game Team i but thought it was just over meaning / interpret.

Maybe a personal tension there?

it does amaze me how collaborative the players can be & then in the next instance they are arguing over some trivial response or meaning.

But then I think – that's my fault – I created the game with these elements in mind.

I created the game – so only I can take responsibility for the outcomes of the game.

Unintentional outcomes: bring 'em on!

But this does have consequences for the learning aspect of the game as 1 x M mentioned today – not sure what I'll remember next month!

he's got a point – no reinforcement for these players – once they have gone – then that's that. Back to the candle light again.

So I guess my question there is how does this become reinforced – how do we remind players of the vocab. they've learnt / the strategy for responding they have used in game world?

Guess deeper Qs then also becomes does or will these learnt areas even be applicable to the real world?

I have to assume they are – otherwise why do the game?

Can only rely on lit. - & this suggest SGs can help – but the design of this game is only now really being dev. @ a deeper level.

More reflection / notes & obs. – lead to better understanding of the needs of the user / players.

Have got about ten weeks before next playtest slot – poss. to get on in B4? – so gives time to reflect & rethink board.

But mind keeps coming back to issue of the learning in the game / post-game play.

Had similar issue with the outcomes vs objectives for the learning criteria. As I set them out they can only be 'objectives' as the 'outcomes' can only be seen once the player / app. has gone live with a camp. & even then this will be dependent on them getting the funding & help they needed.

BUT WHY?

Actually that's wrong – the learning is a journey not an end dest.

Seen that way they are applying their understanding from the game to the real world. In that sense win / fail doesn't matter – they have used what they learnt – applied what they learnt during the play – recall / bias = problem here.

Self-efficacy given a boost though?

Would these players think they would create better camps. having played the game?

More interesting still would be control group – using the CRA vs the game.

How would that pan out?

Who would win there?

back to same issue though – still need to show learning has taken place & that this has had an impact on the app. cognition of the camp. process – or @ least the building process.

many Qs still to resolve!

Conversion of text from Playtest 3 session summary sheet into a word cloud using wordclouds.com, produced the following graphical representation.

Figure A12: Word Cloud – PT3.

B4: Playtest 4

Felt better introducing game today.

Perhaps a reflection of my own confidence growing?

Even though about three months since the last PT.

Group were interesting – Table 1 was quite competitive & got right into the questioning of each other.

Group 3 were quite slow to warm-up – but once they did they shone.

3 was the more diverse group.

PT4 as a whole had some games design students among them & this led to much discussion about the decision aspect of the board.

One suggestion was that the board could be round instead of square which several players thought a good suggestion.

But not sure about this aspect from a practical point.

Will chase GDH & see if they can help.

The main point the student was making was that the game would be more "intuitive" to play & take away some of the conflict they had in the game.

Personally I'm not really convinced that changing the board would alter this aspect.

This was a designed for element in the game & taking this away might make the game feel less like the real world its try to simulate.

But its a fair opinion → will see when I get home.

Generally play seemed more fluid today – not sure if intro was better or that teams understood the rules better – or the fact some were games students – understood the concept a bit quicker – maybe!!

Was a bit disappointed with group 2 – there were some good opportunities for some bigger questions to be asked of each players response – but opp. missed.

Perhaps I need to give them more space?

My presence might have made the Ls more aware of their own judgements etc. – I might have biased the game!

But how do I get round that?

Tape the play sessions?

This might need a new ethics clearance – time?

Coming to the board – pressed Ls about the colour / style of the board – all agreed fit for purpose - even commented they liked the colours – ☺

But the thought of a round board has really stuck – it comes back to a suggestion from one of the games Ls a while back that had suggested something similar – but I really want to move way from version 1 / 2 which both had circular movement – Ls meant a round board a physical circle to play round – I get this could be good for players on opposite side of board to see the tiles better – but that was the reason for ⓘ the block colours & ⑬ the text in tile being at different angles – it was meant to assist these very issues.

But I asked for opinions & suggestions.

So I guess I can't complain when I hear stuff that I didn't really agree with.

Perhaps a trial wold be good next playtest get a round version & show them – vote on best option?

Or I could ask the games students their opinions – would this effect the mechanics of the game though – not sure it would actually.

Personall – liked the board – my favourite so far – born out of the players too – couple of good comments on board – certainly less 'busy' than previous versions.

I also felt this fitted well the LOs – it made life less complicated in the set up & players seemed to just get down to the game / play – is this because of the design though?

I think it might play a part.

It has to right?

But also to need to bear in mind this is only a very small part of the larger framework which may have implications for other sections of the framework.

Need to see the votes.

Conversion of text from Playtest 4 session summary sheet into a word cloud using wordclouds.com, produced the following graphical representation.

Figure A13: Word Cloud – PT4.

B5: Playtest 5

Possible best yet – they got straight into it which was fab.

Great interaction – think the room set out was actually a good idea – took some time to sort but def. made a difference.

Noticed a couple of negatives in the vote – surprised 'cos I thought that group were having good interactions.

Biggest comments on exit were on vocab. many comments on the new vocab. they had encountered & used.

Good stuff as this was one of the aims!

There was a lot going on in this one & felt as though they had also made an effort to engage with the game.

Rules seemed less problematic this time too.

Bit of clarity?

Maybe I did touch on how to play in intro. – as I had done in the last PT yesterday – it makes such a difference I guess its confidence building for the players before they start playing.

Noticed that one group (#3) seemed to struggle a bit @ the beginning.

Good to see them divide into groups & team up with a company profile.

One member wanted to use their own S/up – but decided to go with profile as they might need to give away too much info. – can't wait to see her BP @ assessment.

The guys were well out numbered by the girls but they seemed to hold their own & argue their points well.

Second group had quite a heated exchange @ one point thought I might have had to step in but they managed to agree a figure in the end.

There was some confusion with group 3 over the green tile, what the values mean't – they got it but only after one member asked me for clarity.

Perhaps that needs a bit more clarity in any future PTs?

But I thought this was pretty clear & certainly much clearer than the rules for V2…

I guess still some work to do!

It was comm. on exit by 1 x F = rules were "well presented & clear.

Took that as a compliment.

Also Qs a about the arrows – i.e. are they needed in the board, they agreed they were as they guide play.

1 x F = don't make an difference – they help guide you around the board.

1 x F also mentioned the A/Cs sheet – she thought these could be better designed to fit the overall colours / image of the game.

I hadn't thought about that.

But she may have a point.

They do look a bit simplistic (basic) when compared to the rest of the game.

Not a big job or issue though really.

I do think the smaller cards work better.

They seem more tactile & less of a handful when you pick one up & read the Qs.

they could also do with a bit of make-over – but serve well for the purpose of PTing game.

But am curious now what the cost would be to create a full version with box etc.

XX [colleague] did mention he has some contacts that could help with this – might follow up on this.

Its weird this was a big group – yet it seemed to flow much better today.

Also gave one sheet per table for vote – this worked better – guess it will be better to summarise input rather than have too many sheets floating around!
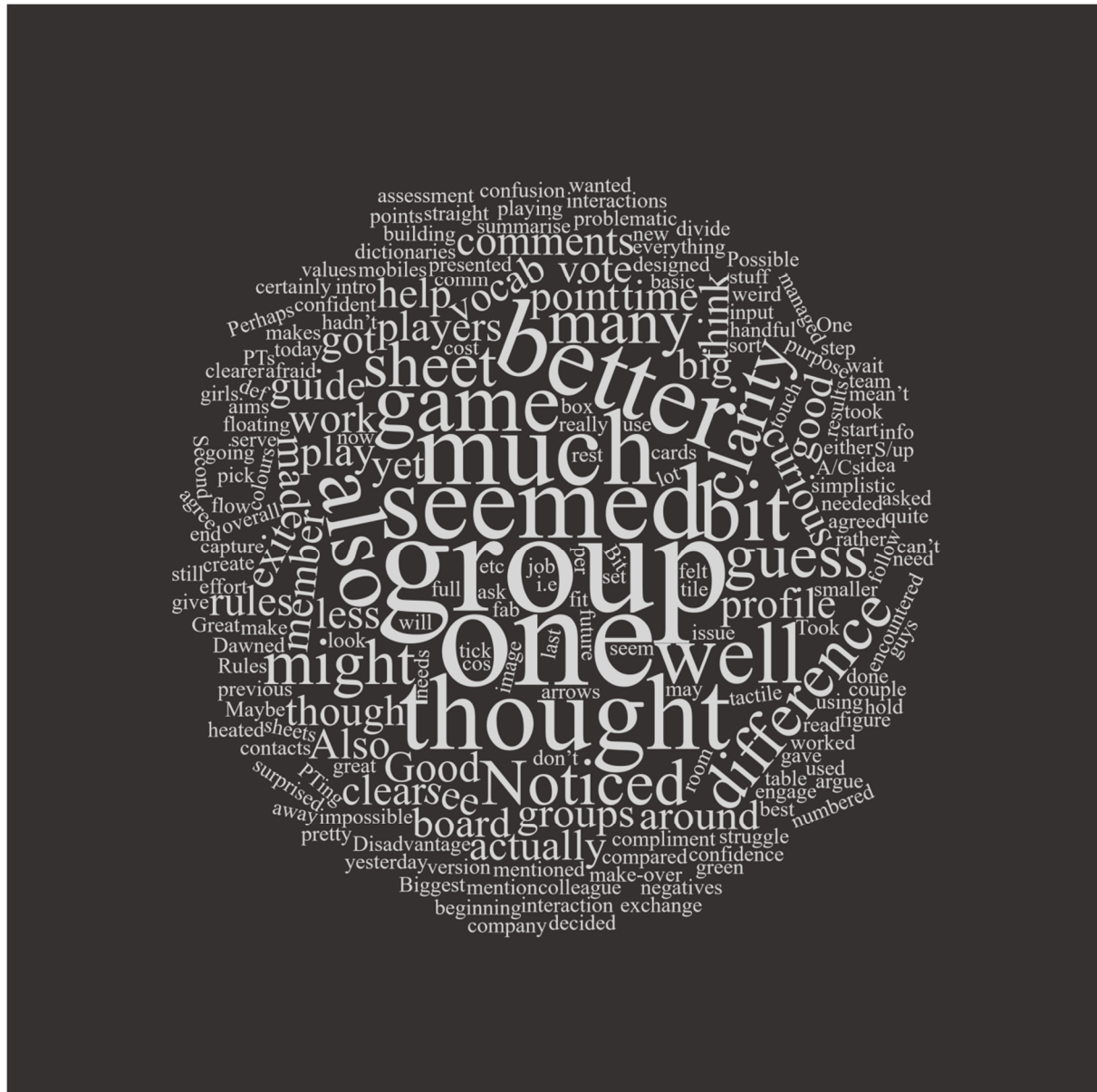
Dawned on me – not great!!

Disadvantage with this group – tick sheet impossible to capture everything

Noticed that many players were also using their mobiles as dictionaries – much more than previous groups – not afraid to ask Qs either – seemed much more confident group actually.

Am curious = results.

Conversion of text from Playtest 5 session summary sheet into a word cloud using wordclouds.com, produced the following graphical representation.

Figure A14: Word Cloud – PT5.

B7: Discussion: Session Summary Sheets

In an attempt to create protocols that produced a more reliable data set from the playtesting of CCBG, session summary sheets were used to record subjective feelings and reflections on the observed playtests. The short- comings of the session summary sheets correspond with those listed above in the criticisms of the field note method (see 4.2 above) so common with ethnographers. Using the principles of the field note method to record, as closely as possible, to the playtesting events the emotional responses the researcher felt to the event he had just witnessed. Justification of their use is found in their ability to highlight biases the researcher holds about CCBG and to record the subjective notions of the researcher post-play. These notes were written within thirty minutes of playtesting and typed up during the thesis writing phase proving a useful tool in the holistic and reflective stages of the writing process.

In future iterations of the playtest, and the recording on session summary sheets, it may be more appropriate to record these during the playtest event rather than post-playtest. This would have been at the expense of the observational tick sheet which would have meant fewer recordings of the learning objectives which were witnessed during the play-test sessions. However, even with this method it proves difficult to deduce at which point these observations were recorded in the game and the context of their use.

Without recruiting third parties to help with the recording of this data it proved difficult to gain these insights. Furthermore, limitations are also acknowledged in the typing of these session summaries. An attempt was made to keep them true to the original notes, but this activity could be viewed as reinforcing the biases that were originally present as no challenge to the notes was made, they were simply a digital copy produced by the same researcher who had set the protocols, recorded the notes, typed the notes and then proceeded to write these sentences you are now reading. The potential for bias is inherent in the processes outlined.

There are no revolutionary options offered here, merely observations that there are inherent weaknesses in the process and that the relation of the text to the reality needs to be approached with an open mind and challenging critique of the observations (Lüders, 2004). They are as truthful a recording as this researcher was able to produce given his inexperience in this area.

They are also an exposure of the biases the researcher holds about his game, the approach he chose and the format used to frame each playtest. He acknowledges there are weaknesses in this approach, he also acknowledges that the time for correction of these events is impossible as they have passed. But the reflective process has at least given voice to warning for future researchers embarking on a similar journey.

Appendix C: Dot Voting Poll

Figure A15: Blank dot voting sheet.

Fun	Super fun. 😄😄	Fun. 🙂	Not sure. 😐	Not so fun. 🙁	Epic fail. 🙁🙁
Difficulty level	Too Easy.		Nicely Challenging.		Too Challenging.
Clarity of Rules	😄😄	🙂	😐	🙁	🙁🙁
Can people learn from playing the game?	No.		Not sure.		Yes.
What form would you like the game to take?	Digital.	Board.	Mixed.		Not sure.
Did you enjoy the game?	No.		Not sure.		Yes.
Would you recommend the game to someone you know who wants to crowdfund a project?	No.		Not sure.		Yes.

Adopted from Institute of Play (2012), Q Design Pack version 1.0.

Figure A16: Dot Voting Poll – PT 1.
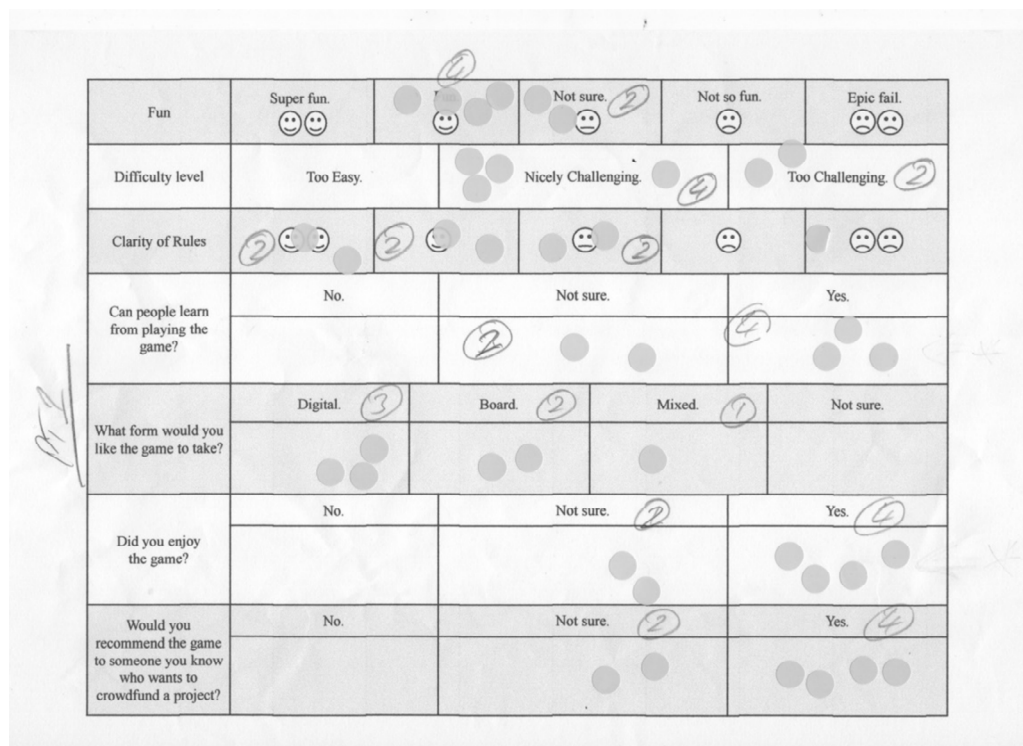
Figure A17: Dot Voting Poll – PT2.
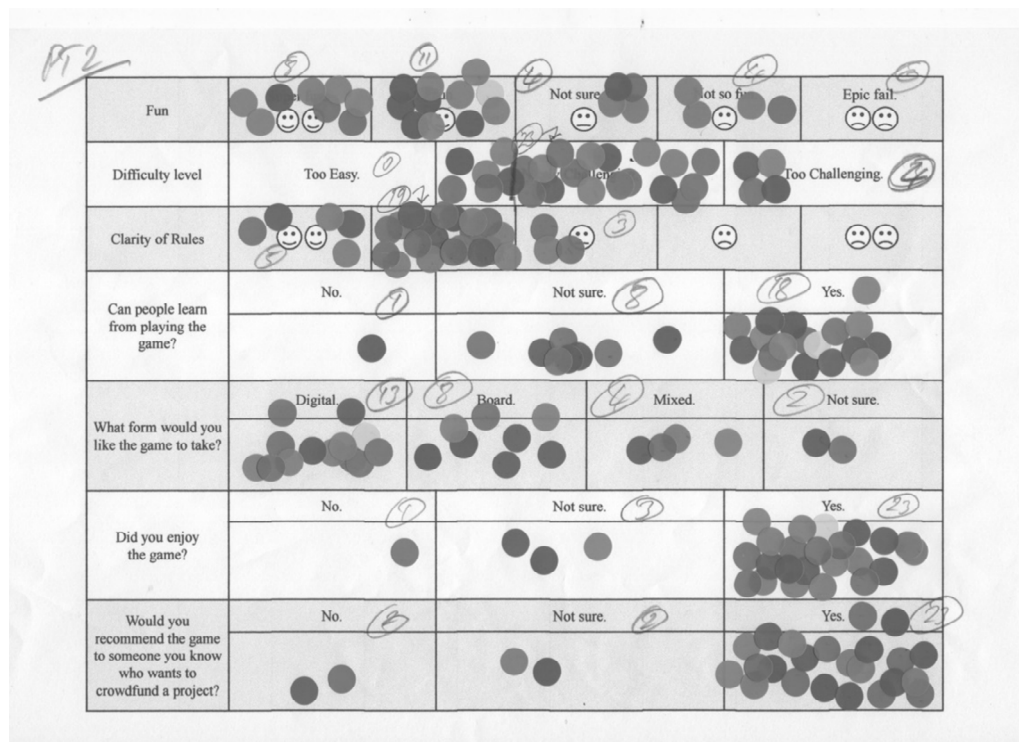
Figure A18: Dot Voting Poll – PT3.
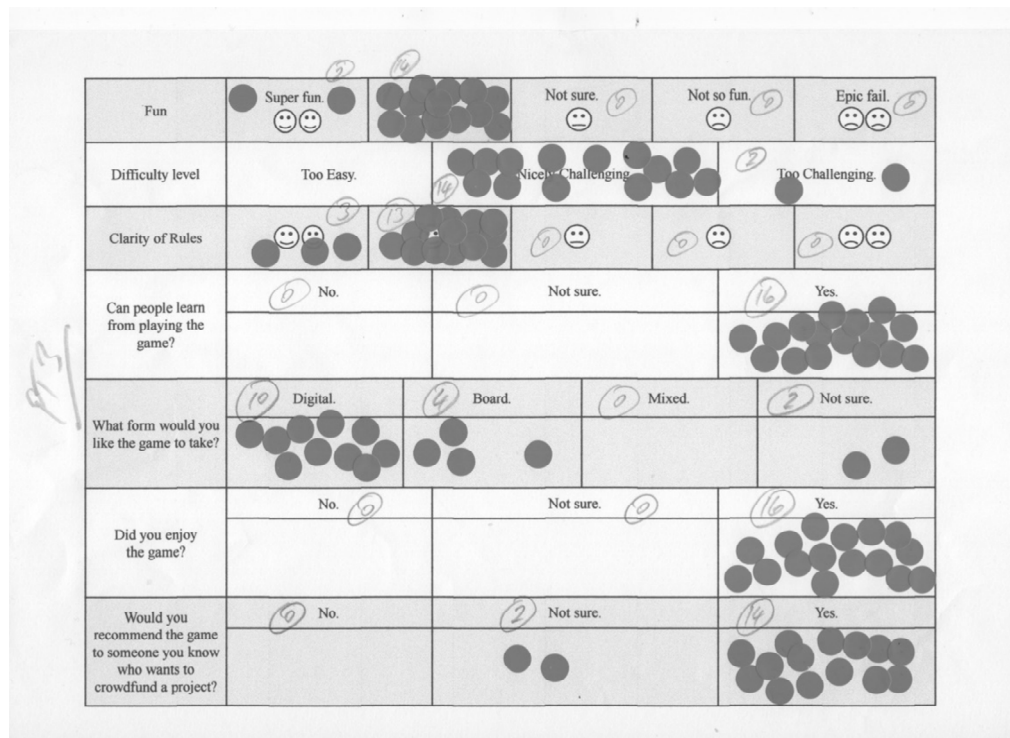
Figure A19: Dot Voting Poll – PT4.

Figure A20: Dot Voting Poll – PT5.

	Super fun.	Fun.	Not sure.	Not so fun.	Epic fail.
Fun	3, 2, 2 ☺☺ [7]	9, 8, 7 ☺ [24]	2 ☺ [2]	1 ☹ [1]	☹☹ [0]

	Too Easy.	Nicely Challenging.	Too Challenging.	
Difficulty level	1 [0]	12, 10, 7 [29]	2, 2 [6]	

	Super fun	Fun	Not sure	Not so fun	Epic fail
Clarity of Rules	3-, 1-, 3- ☺☺ [7]	9-, 9-, 6- ☺ [24]	1-, 1-, 1- ☺ [2]	☹ [0]	☹☹

	No.	Not sure.	Yes.	
Can people learn from playing the game?	1 [0]	1 [2]	12, 10, 9 [31]	

	Digital.	Board.	Mixed.	Not sure.
What form would you like the game to take?	8, 9, 7 [24]	3, 2, 1 [6]	1 [2]	1 [2]

	No.	Not sure.	Yes.	
Did you enjoy the game?	2, 1 [3]	1 [2]	12, 9, 7 [29]	

	No.	Not sure.	Yes.	
Would you recommend the game to someone you know who wants to crowdfund a project?	1 [0]	2, 2, 2 [6]	10, 10, 7 [27]	

C7: Alternatives

Alternatives to a serious board game included the following:

- Development of a series of stand-alone video presentations published through popular channels (e.g. Vimeo or YouTube) accompanied by additional pedagogical content linked to these video presentations.

- Deployment of a MOOC published with an established provider (e.g. Coursera, edx or Iversity).

- Publication of a traditional textbook as both a paper and / or e-print edition.

However, interpreting this as an either / or scenario is a false dichotomy as there are still options to blend a serious game with other pedagogical products. As was the case with the development of the Crowdfunding Readiness Assessment (C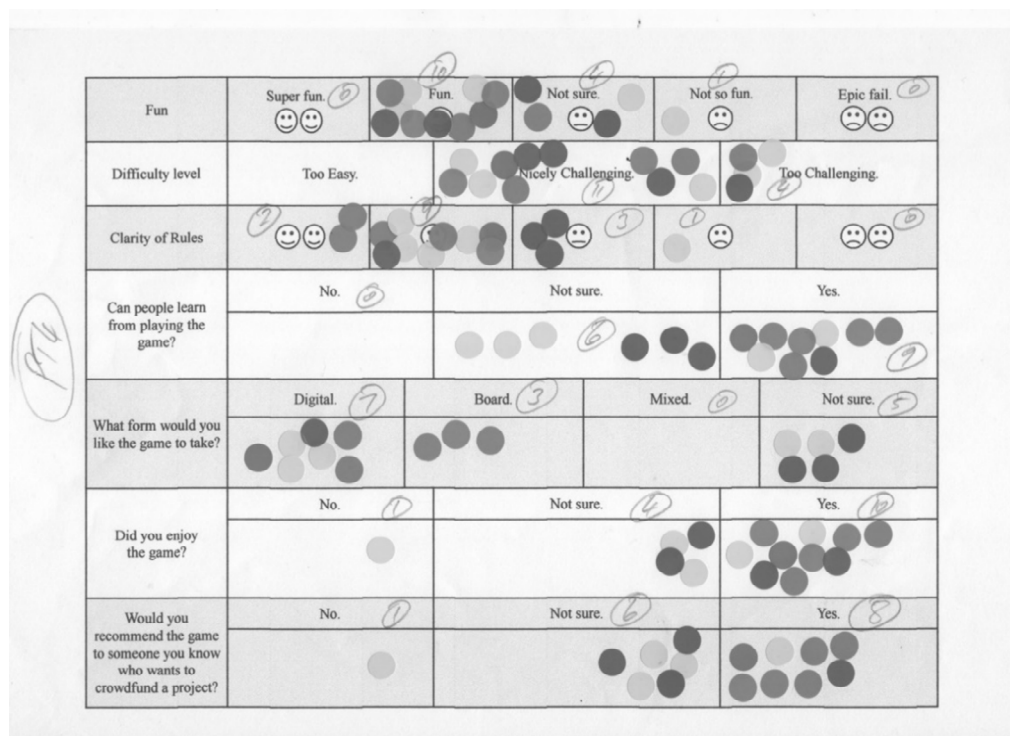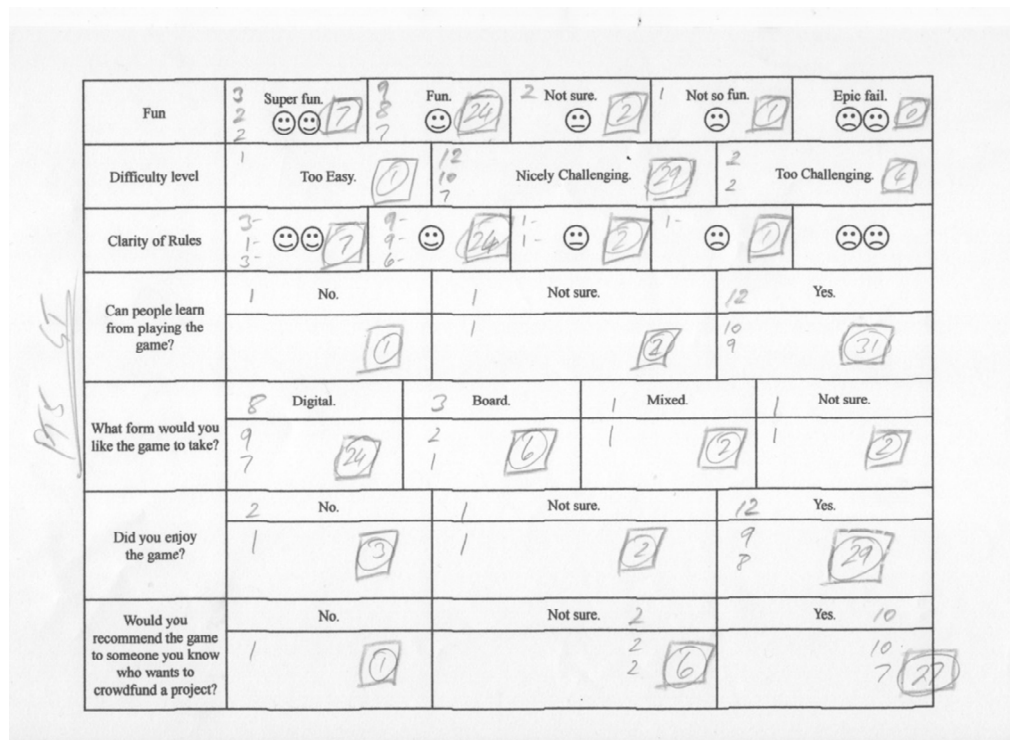RA) and the Crowded Comments Board Game (CCBG), which saw an initial product (workbook) develop into an entirely new form of product (board game).

To reiterate, validation for the framework on which the game is based was necessary before moving forward to the design and testing of what was to become CCBG. The framework was contained in a workbook titled Crowdfunding Readiness Assessment (CRA) and was distributed to experts and crowdfunding applicants seeking to crowdfund their vision.

Validation of the framework was based on interviews with experts who had been recruited with the intention of reading and feeding back their opinions on a workbook which contained the crowdconsent framework. This workbook aids an applicant's learning and understanding of the campaign process in the context of crowdfunding.

The serious game emerged after this initial product had been validated and so the blend in this research was for a workbook which led to a serious game. In terms of design affordances, this combination provided the designer / researcher with a stronger foundation on which to base design decisions at all levels of the products. This blended approach resulted in a subtle alignment of the findings of the research reviews with the responses to the workbook and with the play tests.

There was also more flexibility with the initial product in that its presentation could be altered to better fit the desired objectives of the serious game. This was a board game digitally created and so was relatively easy to alter as feedback was provided that fed the iterative process.

In utilising a serious game for crowdfunding positive results are deliverable for motivational affordances and psychological / behavioural outcomes (Leaning, 2015; Hamari et al, 2014). However, as Hamari et al also noted, some caveats need consideration in the design process. Principally, game design in a serious game context needs to be considered with the pedagogy in mind from the outset (Ramirez & Squire, 2014; Winn, 2009; Gunter et al, 2008; Gee, 2007; Shaffer, 2006; Winn & Heeter, 2006). Sound strategies for serious game implementation are needed in order to situate the learning components within the game (designing 'for' learning objectives). This contrasts with Zyda (2005) who emphasised the importance of pedagogy and story integration, arguing that story must come first in order for the game to be engaging enough for learners to stay engaged with the product (ibid: 29).

This is perhaps the most pertinent rationale for taking the first step in utilising the workbook in the design process. Not only does this approach validate the framework, it also allows visibility for emplotment (Czarniawska, 2004), which in turn hints at the possible storylines in the game's development. It is also important not to lose sight of the applicant's story, which will ultimately be told in the campaign pitch. This is significant as storytelling forms an essential component of the design framework (see 3.6 above).

Rarely will game building teams have the skills to understand all the various roles of their colleagues in the building process. Teams are multidisciplinary and this creates tensions among members as each vies for their input to be both relevant to the holistic contribution and recognised as valid by stakeholders (Winn & Heeter, 2006). The use of exogenous games may ease this situation as the parameters of the game's design already exist. A team can readily understand the existing dynamics and quickly conceptualise how this can fit with overarching learning objectives (ibid).

Tensions over pedagogy, content and game mechanics could be greatest when the game is endogenous (Winn & Heeter, 2006). Here the game is being built from the ground up which can result in higher tensions due to the setting of deadlines or design parameters.

Threats to the serious game's affordances are that the pedagogical strategy may be misinterpreted or erroneously applied to its game's mechanics. Equally there is an opportunity, perhaps greater than could have been found with exogenous games, in that the game itself is built with a unique application in mind allowing for greater affordance of the learning objectives to be included. Therefore, it becomes possible to conceive of an endogenous game as possibly being a better 'fit' with the overarching learning objectives (Winn & Heeter, 2006).

Games are effective tools for delivering learning provided they engage their learner / player adequately (Zyda, 2005). Often, the objective of a serious game is to motivate the player / learner in a particular context. This was characterised by Exton & Murray (2014) as a motivational system dependent on psychological functions and cognition, an echo of Huotari & Hamari (2012).

Zhang (2008) (also cited in the Exton & Murray paper) provides further evidence for the positive outcomes of motivational affordances through games. Zhang (2008: 145) summarises motivational affordances as "...properties of an object that determine whether and how it can support one's motivational needs." This in turn leads to interest in the use of the object affording that experience, as Zhang (ibid) states this provides an opportunity to both "attend and engage" (ibid: 145) with that object, but he also notes that levels of intensity can be flexible, which sometimes results in the design principles not achieving their stated goals or learning objectives (ibid).

Huotari & Hamari (2012) are responsible for the introduction of the notion of service system design in gamification. This was a move away from Deterding et al (2011) who argued that UX (user experience) was in fact more important to the game build process, no matter what form the final product took. Both papers were concerned with gamification in its broadest sense and lacked focus when their ideas are applied to games for specific purposes as is the case in this research and the resultant product (CCBG).

However, it is important to emphasise that Deterding et al (2011) justification for their view was that game dynamics are unique in terms of the experiences they produce, which are subjective to each player. Even when players play together either physically or in social settings online, their experience is an independent aesthetic, only they are likely to observe, experience and interpret (Kirkpatrick, 2011).

Games, according to Huotari & Hamari (2012), may be designed 'for' a particular outcome but they can never 'guarantee' a particular outcome. This serves to emphasise the need for a robust framework when designing a serious game where learning objectives are salient. In other words, stating the case for these objectives early in the design process, although it cannot guarantee the outcomes desired, may help to steer the game in the right direction and afford dialogue among the building community focused on aspects that will lead to, or at the very least go some way toward, desired objectives being reached.

Cognition of the player's individuality in the game design process may yield better serious game results which are more aligned with learning objectives and the overall intentions of the original pedagogy. Designing for serious game learning objectives can mean varied measurements of success being introduced. The metrics are themselves unable to guarantee success but they can allow for variation in the measurement of objectives. One such criterion could be the inclusion of fun in the serious game. Fun allows for more serious pedagogical components to be included and for the holistic reactions of players to the game to be given adequate reference in the iterative process of design which may result in greater engagement.

The main questionnaire used at the end of playtesting CCBG reflected this element by focusing on various angles of fun in the game (Institute of Play, 2012). A dot voting poll was a second method of recording used in the immediate post-play sessions, the relevant question asked in this method was "Did you enjoy the game?" The results were overwhelmingly positive with 84% reporting they had enjoyed the game (with 5% voting 'no' and 11% voting 'not sure').

The consequence of this is that CCBG is the final concept for this research. Alternatives were considered but given these factors and the need to house these learning objectives in a product that could be seen to deliver and, in some ways, measure these elements, a serious board game was chosen. This meant that the researcher also had control over the design of both the methodological approaches and the product itself. This was achieved in the timeframe allowed for this level of examination.

Appendix D: Blank Playtest Questionnaire

Figure A21: Blank PT Questionnaire.

Please rate the games 'fun' components below.

1 = no, not really / 5 = yes, lots of fun

1) Competition (having fun by showing your superiority)

Was the competitive element of the game fun?

Don't know	1	2	3	4	5

2) Social Interaction (having fun by supporting & doing things with/for other players)

Was the social interaction fun?

Don't know	1	2	3	4	5

3) Discovery (having fun by finding out something that was not known before)

Was the discovery of new vocabulary fun?

Don't know	1	2	3	4	5

4) Advancement & Completion (having fun by finishing the activity)

Overall, was the activity fun?

Don't know	1	2	3	4	5

5) Learning (having fun by increasing your knowledge about the real world)

Was it fun learning in this way?

Don't know	1	2	3	4	5

Playing the game, how did you feel? | ☹ | 😐 | ☺ |

Design of this questionnaire was partially influenced by a presentation by Peketz (2016).

Appendix E: Objectives Observational Check Sheet

Figure A22: Blank Observational Check sheet.

Cognitive	Learning objective	Observed
Remember	1. Recalling stories and significant events appropriate to response.	
Understand	2. Exemplifying chosen responses as most appropriate for context.	
Understand	3. Inferring the most appropriate response based on the context.	
Understand	4. Explaining responses when probed within the given context.	
Apply	5. Implementing an appropriate language response in the context.	
Analyse	6. Differentiate the responses to nuanced contexts.	
Evaluate	7. Critiquing and selecting appropriate responses in context.	
Create	8. Producing convincing responses appropriate to context.	

Cognitive	Learning objective	Observed
Remember	9. Recognising relevant types of questions to ask.	
Remember	10. Recalling previous responses from players.	
Understand	11. Interpreting the true sense of responses.	
Analyse	12. Differentiating between relevant and irrelevant responses.	
Evaluate	13. Checking by asking primary and secondary questions.	
Evaluate	14. Critiquing appropriate primary and secondary questions to ask.	
Create	15. Generating questions and probes that support 5.1.	

Figure A23: Completed Observational Check sheet.

Adopted from Anderson et al, 2001.

Appendix F: Interview Summaries

Below are presented the summary write-ups of the interviews with the respondents. They are presented in chronological order of interview (Sara, Henry, Steve and Wally).

F1: Sara

Sara's main concern was over the language used in the CRA and that this may be problematic for the type of clientele she works with. Her second concern, equally valid, was that the length of CRA was too long. Sara openly stated it took her a long time to get through the CRA and this immediately created a barrier to her using it with her clients. Sara's reluctance was also reflected in the comment that she thought this would be quite difficult for people to complete on their own. Implicit in this is that they would need a consultant or mentor to help guide them as they worked through CRA. For Sara, she simply wouldn't have time to do this with her clients. These clients need, in Sara's opinion, a lot of intervention to go through the process of crowdfunding. As a consultant, Sara is well placed to represent this intervention.

To stress this point Sara mentioned the fact she was going to use the CRA with a particular client but having struggled to both finish and comprehend the workbook she decided against using it and instead created her own shorter checklist version. In this Sara extracted what she considered the main questions and presented these on a single side of A4 paper. This wasn't subsequently used with her client as she was not confident, she had interpreted the meanings of some of the questions correctly. She found the meaning quite opaque at times and suggested that for this to serve a purpose with her clientele, it would need to be re-valuated. As it stood, Sara felt it would actually hold her clients back rather than help them build a more robust crowdfunding campaign.

Further still, Sara identified that the passion and drive of the applicant was also not present in the CRA. As Sara was keen to point out, unless a crowd can connect with the applicant's passion and drive, they are less likely to fund the vision. Sara thought this an element of the engagement process and in agreement with her this element was incorporated in the CRA. Sara saw the crowdfunding process as a journey, where the applicant is attempting to persuade the crowd to join them on this journey.

Sara's position was that the crowd need to be able to identify with the applicant and their story. This story is being told to an unidentified crowd and the applicant has no idea how it will be received. Sara therefore stressed the need to try and understand the crowd before launching a crowdfunding campaign. Sara makes a strong case for attempting to resonate with the crowd through the story being told.

Sara's critical issues with the CRA started at the very beginning of the workbook, she found both the numbering and the introduction confusing and this was more a reflection of the writing style and the language being used in the product. For Sara, this language was orientated more toward business than it was for the third sector.

At a more granular level she also stated that the language appears to be geared more toward the investor than the applicant. This was disappointing for the researcher as he was attempting to focus the CRA in the opposite direction. This was countered in the interview with Wally (see below).

Sara agreed there is a need for something like the CRA product, and during the interview Sara mentioned the approach she takes in her workshops where the very need to be crowdfunded in the first place is questioned. As Sara stated, this is not possible for the platforms themselves as they are selling their particular model to potential clients (applicants). Implicitly the researcher would interpret from that statement that there is a need for an independent voice catering to these wider issues, an aspect that Wally also raised during interview (see below).

This interview opened with a discussion of the effective use of social media and the lack of understanding Sara often encounters with the charities she has worked with in the third sector. Sara elaborated on this theme a little later in the interview when she returned to the use of social media as a means of connecting with the crowd and more especially with any celebrities that one might be in a position to reach out to. Even though social media is recognised as important Sara still believes that physical networking and the ability to get out there in the real world and network with people face to face is still important.

Sara's biggest criticism comes back to the language used in the CRA, there are various points where she raised this issue. Cultural icons are mentioned on page 125 of the CRA (question 8.4) and this was of greatest concern for Sara in that she had to be thoughtful of the actual meaning behind this noun clause. Sara offered an alternative term of '*influencers*'.

For Sara the use of cultural icons made no sense to her and she also found the elaboration (tips) offered on the page unhelpful, hence her suggestion that the term should be changed. Sara was happy with the context of CRA and the fact that it asks the applicant to think much more deeply about the crowdfunding process. Changing the language, in her view, would result in an even more accessible product that would reach the overall objective more easily.

Crowdfunding for Sara is primarily about reciprocity and relationship building. In this respect there was some hope for CRA as a product that has potential to deliver on these aspects. Sara produced her own shortened version of CRA in which she had simplified both the language and the way the content was produced. She created a checklist with questions on the left and a boxed space on the right for a tick to be inserted. For the applicant this would mean that section was complete. But in doing so, it could be argued that Sara had actually missed the greatest benefit of using CRA, that is, that the spider (web) graph demonstrated to the applicant where weaknesses and strengths were present in their campaign.

Sara recognised that peer validation is a vital aspect of crowdfunding a vision but she contradicted herself on several occasions in the interview where the focus of the campaign appears to shift from the crowd to the applicant and then back again. Interpreting Sara was a difficult task at times and the text analysis for this short interview took much of the time allocated for this area. Sara's criticism of the language was focused and precise, but her communication on some other aspects of CRA was less so.

F2: Henry

Henry had crowdfunded his publishing vision a few months before interview. He had used the CRA as a guiding principle for the campaign and so was reporting on it from the perspective of the applicant. One of the biggest surprises for Henry was the complexity of the crowdfunding process. He had, it is fair to report, a fairly naïve view of crowdfunding before these events.

Switching the focus to CRA Henry's biggest criticism was that he found the process of using CRA a fragmented one and he had found it difficult to see the holistic progress he was making as he worked through the workbook (paperback version). There were also some major issues regarding the terminology used. Some of the terms Henry found quite difficult to understand while in other instances it appears the context was more problematic.

For Henry this left him with the feeling that he had been ill prepared for the actual communication process he would be expected to undertake as an applicant. Henry would have liked some deeper guidance on the style of communicating with the crowd and some examples of best practice, perhaps in the form of case studies.

This may have reflected his frustration at not being guided adequately within the workbook regarding the expectations of the applicant. This further manifested itself as he expressed some frustration at not being able to communicate adequately with the people he already knew, the people, that is, who were already in his networks. He found he was more at ease communicating with strangers (presumably through social media and the platform itself) that made up the crowd than he was with the members of his network he had already established a relationship with.

Henry returned several times to the fact that he had found the CRA process quite fragmented or 'bitty' as he expressed it. The length was good and the instructions made sense to Henry and he had no problem following what he was being asked to do. In fact, he commented that the instructions were clear and the conclusion brought it all together well. Part of the problem Henry experienced was that he was not sure where he was supposed to start writing for his own pitch in the campaign.

There appeared, for Henry, to be no singular place for the creation of text that would mean the crowdfunding campaign being written as he progressed in the CRA. Instead it felt for Henry more of an assessment in which he was producing a diagram not a text that might have a more practical output for him.

On a more positive note, CRA did encourage Henry to just have a go at crowdfunding. He also made the point that he did not look at other campaigns for fear that he may have felt inadequate about the planning he had done. He felt it was a better option to just be original and this acted as a barrier to his auditing other campaigns. Henry also mentioned the time auditing other campaigns would have taken him. He would have needed to audit a good many in his view to gain a more succinct overview of what worked with these campaigns. He feared this might have taken too much time to do correctly and auditing just two or three campaigns may have provided him with a skewed view of the process.

Generally, he expressed happiness with the product and thought it could add value for an applicant seeking to crowdfund their vision. His main criticism was that it was too complex and made the holistic view of progress less visible, Henry also thought the aim of the spider graph should be clearer. In his view it should either be there to provide that missing holistic view (strengths and weaknesses) or it serves to demonstrate what is not relevant to a campaign. Henry even struggled at one point to recall the title. He also found the term '*assessment*' in the tile a little problematic as this indicated a test was about to happen which he felt ill prepared for. In Henry's view the title needed to be more 'human' and this also applied to the content. It needed to be more friendly and helpful as opposed to a cold test or assessment. Finally, Henry thought case studies were needed to help guide the applicant regarding best practice.

F3: Steve

Steve started his lengthy interview by praising CRA but he also made the point that crowdfunding is a complex undertaking. By default, most traditional funders are seeking justification for not funding a project, according to Steve. Where CRA really adds value is the elimination of much of the dull footwork in the form of appraisal before even meeting the entrepreneur. Steve suggested that this might be one of the biggest advantages of CRA. It acts as an aid in the investor's decision-making process.

Past experience of Steve includes team building and managing. In the example he provided he managed to refocus an existing team's effort, eventually producing something that added value for the customer, which this team had found difficult to achieve prior to Steve joining them. The team then raised £500,000 on an equity crowdfunding platform. Steve presented this anecdote as a means of demonstrating his past track-record as someone who was able to both manage a team and get results, in this instance raising finance with a product that would soon have a customer base.

Turning to CRA, Steve was methodical in his approach and took each section in turn. It did appear at times as though Steve was reading these sections for the first time, but he had stated that he had previously read through CRA. In terms of the content there is a lot and it is quite plausible that Steve was recalling and forgetting sections as the interview progressed.

The interview started with the sections and purpose of CRA, which Steve was complimentary about, he thought it well laid out and well stated. Steve also noted that there was plenty of space for notes to be taken by the applicant as they progressed. The first real criticism came in section two (networks).

Of particular concern to Steve were the first three questions, which he saw as focused on the internal thoughts of the applicant and thus almost impossible to predict. Steve thought question 2.2 (page 51) was a good question; "Have we asked for help spreading the word?" But when combined he struggled with these first three questions as they appeared, to him, to lack direction.

Steve also struggled with the language of CRA generally. Unlike Sara and Henry (above) who struggled with the meaning in the context of what was being addressed, Steve took issue with the clarity this language provided. He thought the danger was that the use of management lexicon may mean the whole thing drifting into what he described as "bullshit" language use. His advice was to maintain plain English throughout.

Social media is addressed by Steve and this he spends some time on. His fear seems to be that social media is becoming an ineffective business communication tool. People can turn away from social media and unfollow or, as Steve comments, "snooze" you (18.31) for a certain period. In his opinion the personal nature of social media has come to dominate these platforms as communication tools which has resulted in the reduction of space, or attention, for businesses. But this view appears to ignore the very foundations on which much social media was built. It is social for a very good reason and to ignore this factor would, it seems, in Steve's view eliminate much of the social noise and free up space for business communication. One obvious consequence of this might be that with fewer people on these platforms they would become less attractive to businesses as a means of communication. If on the other hand Steve is concerned that business to business needs to be allowed a higher volume on these platforms then this point was not explicitly made. There is regret that the researcher did not follow up with this line of enquiry as it might have clarified his position.

Steve explicitly remarked on the validity of social media given the recent reports of fake news delivered through these channels. Migration from one platform to another becomes problematic dependent on your perspective. But Steve also expressed concern about the dangers of having a multiple funder model, where each investor invests only small amounts. Steve thought this a dangerous strategy as these people had very little skin in the game and thus very little concern for the project's success or failure.

It may be the case, according to Steve, that these are the very people using social media, those people with potentially larger amounts to invest, who may simply not have the time to be on social media platforms as frequently. So, on this view from Steve, there is a lack of investors using social media with the potential to add greater value than the crowd.

Social media is, from this perspective, a hotbed of small investors willing to invest small amounts in return for the opportunity to gamble on these projects. He also noted that he is aware of pensioners investing through crowdfunding. He also sees this as a factor highlighting the broader aspect of the demographics reachable via crowdfunding; whichever demographic is being sought via the campaign, there is, as Steve recognised, a strong need to enable feedback loops from the crowd.

Steve demonstrated an awareness of the different perspectives members of the crowd may have of the project, perhaps reflecting the markets more generally. Factors of success may also be different among the crowd, and, for Steve, this could impact on a campaign. For this reason, appealing to a wide body of the crowd seemed to be a logical strategy for Steve. This view echoed Sara when she made the point that CRA was perhaps more helpful to an investor than the applicant. But taking account of the earlier comments from Steve, he would appear to think the appeal of CRA is wider than Sara's interpretation.

Steve's background is a mix of corporate roles, an angel investor, consultant and entrepreneur in his own right (he is presently starting up a small enterprise). The corporate experiences of Steve bore witness to start-ups being bought by competitors as they were either an exciting potential market disruptor, beneficial to third party rivals or something that challenged their core value proposition and thus needed suppressing. Money in these situations, according to Steve, becomes a very powerful tool with which to influence and sometimes contain these ideas. Having criticised section 2 (networks) for lack of clarity at the beginning of this section, Steve then went on to claim that the questions near the end of the section would be the areas he would expand. He also expressed some acknowledgment that corporate funding is an activity via crowdfunding. How established and to what levels was not discussed.

Further criticism was levelled at the language of CRA. Of particular confusion for Steve was the use of '*channel*' in question 3.2 (page 63: "Have we identified all external channels?"). Part of Steve's experience was in product development and so by default when he read the word '*channel*' he made the connection with distribution channel and communication channel, as was the intended meaning.

The tip section on that page does states in the first line: "By channels the question means communication channels" (Buckingham, 2017: 63), which would imply that Steve had not read the tips section on that page. Additional confusion emerged over the term '*fail*' in question 3.7 (page 68: "Are contingencies in place for infrastructure fails?"). Steve assumed that failure in this context was associated with technological failure, where the technology had not been able to meet or function to a standard that the applicant might have expected. In reality failure can also be in the form of not reaching a target (funding or otherwise) or failing to adequately connect with social media audiences. But these were issues not addressed by Steve, even when the tip section tells the reader:

> "Problems do arise and sometimes these can become bigger than predicted. For example, if a supplier lets you down, what would you do? Or, if your Internet access went off line, how would you operate? Whatever is relied on, both operational and strategic, must be considered in this question" (Buckingham, 2017: 68).

Again, this would suggest that Steve had not read the full text on the page or that he had misinterpreted the context and / or the meaning. Conversation continued, and Steve also focused on the macro-political arena in that he sees Brexit as having the potential to force start-ups into a position where they need to comply with two sets of regulation, one for the UK market and another set for the EU market. In Steve's view, this has the potential to create many bureaucratic demands on software developers.

Regulatory risk is also more complicated for some industries than for others. Steve recognised that not all markets will have the same exposure to risk or bureaucratic standards. What is important about this for Steve, is the need to keep up-to-date with the latest news and standards, but this, as he was keen to point out, is very time consuming.

Steve also picked up on the suggestion in CRA that a campaign should have some form of style guide to support its branding and communications. He commented that brand recognition is a communication style foremost and that subtle changes to a logo may be beneficial, but big changes he argues are often the result of changes to the higher levels of marketing and communications management.

Steve used an example of well-known global brand where the corporate body is very intense over the issue of maintaining the corporate image. This corporation is able to police the use of the image in their logo and maintain the branding as they recognise the value of this as a communicative semantic. This sign has connected a global audience and is highly prized by the corporation in question. Steve was trying to emphasise that this logo has been stable and served the corporation well. Whether this has developed as a result of the incremental changes made to the logo over time or because there was a lack of any radical shifts in the corporate image, was not discussed.

Regular changes to the identity of a corporate body were discussed and Steve used the example of sports teams changing their players' uniforms on a regular (normally seasonal) basis. This generates income for the teams but also risks disagreement from the fans if the chosen design is thought out of sync or character with the team's values. Steve related an elevator pitch to this in that the short pitch needs to be cohesive, coherent and concise.

Steve saw section five as part of the uniqueness of creating a campaign. So his emphasis in this section was on the need to articulate clearly and to be able to reference the expected standards of communication that the campaign expects team members to utilise when facing and communicating with the crowd.

Steve also questioned the validity of the use of the term '*promise*' in CRA. His view is that from a legal perspective, the term might prove difficult. This is a recognised term within the crowdfunding eco-system, but equally the use of the term '*reward*' is also frequently used. There is also an association, which the author was trying to avoid, between the crowdfunding model of reward, and the verb '*reward*'. Given this aspect, '*promise*' seemed a better term to use in CRA.

Caution is also claimed by Steve when using social media. He is explicit that he views social media as an asset to any crowdfunding campaign but he also heeds caution and cites an instance where a celebrity questioned the preferences of social media platform. The repercussion of this was a drop in share value for the criticised platform. This discussion emerged from some confusion Steve had over the use of the term 'template'.

The confusion was over whether the term meant a model for completing a task or a content for use on social media. CRA was referring to the latter. But Steve raised an important issue in that social media platforms are themselves suppliers of the templates which dictate the form communication can take on these platforms. The consequences of this are that the platforms are dictating, to some degree, how people communicate on these platforms and so there is a need to develop a communication style that fits with these platforms.

Ties and networks were also contentious issues for Steve. A large part of Steve's life has been spent on the East coast of North America. Many of his friends remain in this area and he expresses some concern over the impact this could have on any campaign that he manages. It is possible for a vision to have more geographical relevance to a particular locale and / or group but this may also serve to exclude some members of the crowd. Social media tends to be trans-national in both scope and reach. Therefore, the possibility of being able to reach a highly mobile and diverse demographic is made much easier via social media platforms.

Steve's issue was how filters are applied within this context. Who filters, what gets filtered and when this happens could have consequences for a campaign according to Steve. Reading Steve, it could be suggested that he is making a claim for the need for crowdfunding campaign management to become more aware of how social media works and the need to understand the consequences of using social media appropriately.

From the experiences of Sara (previous interviewee) this is also the case in the third sector in that there are often missed opportunities for engagement. Missed because the management behind the campaign are not savvy enough about how social media works and therefore unable to create and implement a sound strategy. CRA can make no claims to act as an educational tool for the use of social media. It can, however, explicitly outline the need for social media in the first place and this is what the author intended.

CRA was attempting to introduce the applicant to the idea of a template model that could then be used to communicate better with their audience. Applicants would still need to create this template, CRA did not attempt to supply this, but acting this way management would be both pro-active and reflective regarding their social media needs whilst also creating a standard for communications in their team.

This aspect was not conveyed in any depth by any of the interviewees, which would indicate a possible need to review this section. Steve summarised using social media as a lottery in that that there exists the possibility of being seen by an influential member of society and in turn conveyed to their audience. There is a huge element of chance in this as mentioned earlier with reference to the migration from one platform to another by a celebrity. In that instance this was a negative for one platform but a positive for another.

Concerning social media, Steve highlights the likelihood that most social media communications are in fact one-way. Commentary is pushed out in this view and the ability or will for the content creator to listen to feedback is often lacking, in Steve's opinion. But in response to this and in defence of the crowdfunding eco-system the main platforms encourage applicants to use the comments and updates process as a communication tool that enables management to extract feedback from the crowd.

One area where Steve found agreement with CRA was with regard to supplication from applicant to crowd. He thought seeking skills and help from the crowd was beneficial to a campaign. Likewise, he agreed with the essence of the CRA position, that part of any communication strategy should include the communications that are going to be an ongoing part of the model. Roles need to be determined in order for this communication to be effective.

As Steve commented, "don't give your engineer a job in social media" (1.28.09), his point is a valid one in that for smaller organisations there may be a temptation to assign unsuitable roles to individuals purely on the basis that they volunteered or that there was a shortage of personnel to accommodate these needs. The discussion in the interview then turned to the most appropriate channels for this communication.

From Steve's perspective, this should be accessible to the crowd and he detailed the strategy that his own start-up employed; a two-tier approach of communication that provides value for both investors and early adopters. The differences in these communications concern the depth and technical relevance of the content. Investors receive monthly reports on the progress and fails that have occurred, while early adopters are provided with a much more detailed report on their activities.

This pro-active position is also adopted in their approach to the needs and skills they have embedded within their project. Here Steve advocates weekly meetings to outline where the project is and what needs doing. This can then be matched with the skill sets already found in the team. From a crowdfunding perspective, these skills need highlighting as part of the pitch. This acts to inform the crowd about the team and may also act to build trust with the crowd. These skills and the track record of the team's members are now visible to the crowd.

CRA raises the issue of industry bias (question 8.9, page 130) or at the very least a standard view from the perspective of that particular industry. Here Steve appears to stumble a little and somewhat contradicts himself on whether this type of view is positive or negative. He first appears to suggest this is a negative aspect but as he comments further Steve back-tracks and expresses that it's "not necessarily a bad thing" (1.48.33). There is a caveat from Steve regarding this in that the relative back-tracking is from the view that the pain being felt by the customer is potentially about to be eased by the disruption that is about to be released by the applicant.

Steve also expressed the importance of community around the vision. He cited drone communities as an example where members will at times help other members with tips and advice, while at other times the dialogue between members becomes much less conducive and at times outright confrontational. This also reflects crowdfunding where there are times when the crowd can be very helpful in making suggestions or offering advice, perhaps solving an issue for the applicant, but there are also times when members of the crowd can take offence at the smallest of slights. An example would when an applicant is new to crowdfunding and has failed to fully grasp the etiquette around responding to questions within a short time frame. Crowd members may take offence, even when the situation has been resolved and the reason for the delay in response time has been given. There was agreement from Steve that the optimal community was a constructive one that contributed to the general knowledge of all members of the platform's community.

F4: Wally

Like all respondents, Wally started positively and was quite enthusiastic about the purpose of CRA and use of the method for serving an applicant. Both Robbie and Wally were the most diligent in that Robbie used the CRA and on more than one occasion demonstrated how the product was helping him and his team to forge a crowdfunding campaign. Wally's approach was more academic in style and he broke down his reflections into small nuggets that were inserted on sticky notes on the relevant pages in CRA.

Wally liked the overall structure which concurred with Robbie's opinion. Wally felt that the holistic attempt of forming a nexus between entrepreneurship and the crowdfunding process was a positive aspect of the workbook. At a personal level he was explicit about the attempt being made in the workbook to encourage the applicant to think about the potential impact entrepreneurship could have on their family and friends. Wally saw this as a positive aspect of the workbook and one that provided some depth to the process. By including this aspect, it meant that the applicant was able to engage with this type of question and think about the possibility of an impact on those around them.

Structurally, however, Wally found some fault, particularly with the overuse of the thumb design. This design appears on every page and Wally questions the validity of this. He contends that it may have been better to use the symbol as a reward for reaching certain stages in the workbook. By offering a thumbs-up on every page, Wally was inclined to think that this actually negatively impacts the overall feeling of progress being made. It does not work as well as having a sparser approach to the number of occurrences of the symbol. In being sparser, the symbol may become more powerful for the reader.

Overall, Wally liked the approach and depth that CRA offered. He stated that some people may find it wearing in that there a great number of pages to the work; something Steve also commented on and which was the main factor in Sara's not using it with her clients. But where the previous readers had seen this as a barrier, Wally actually took the opposite position and thought that this might even be an advantage. As he stated, the approach is non-linear in that readers are able to move around without being forced to progress in a unified manner. Applicants may choose to answer different questions at different times, which makes the progression through CRA a much more dynamic process.

Wally takes a more constructionist approach in that he identifies the different styles of consumption related to the workbook. When the researcher introduced the concept of a digital version, Wally linked the differences in consumption in that not only does this represent a new formula for the content's production, but he also saw the style of consumption changing from applicant to applicant.

This is dependent on their motives for seeking such content. Are they looking to launch soon; seeking a guide that can get them up-to-speed rapidly? Or are they likely to only read a few pages and feel they have the confidence and self-efficacy to continue on their entrepreneurial journey. This changing motive for the applicant means that they need to be aware that the use of the product varies according to needs.

This aspect was also reflected in the discussion about page design. On each page of questions there was also further information intended to add further context for the applicant. Wally agreed that this was beneficial to the applicant and as he commented, it meant that two versions were needed, one short (the question) and one long (the advice), on each page. The provision of this meant that the applicant could answer the questions they were confident about without reading further, or they could refer to the additional text if they felt they needed further support.

Sara suggested that the CRA was far too long and needed to be shorter in order to engage her clientele. Henry mentioned the fragmented nature of CRA; he found it difficult to keep in mind the larger picture of why and how this was beneficial. Wally did not agree with these positions and thought it beneficial to have the depth provided as the CRA stood. These contradictions, Sara and Henry with Wally, could be a result of the use of CRA. Both Sara and Henry had a specific use for the CRA while Wally was approaching it as a critical reader who, at that point, was not using CRA as an aid for a campaign he was likely to manage.

Wally also expressed holistic satisfaction with the design of CRA, both the feel of the pages and also the reward mechanism that the applicant could experience. Early in the conversation Wally talked about the use of the thumbs-up motif and that, in his opinion, it is used too frequently which dilutes the purpose of its use. It appears twice on each page and, in Wally's opinion, the hope that this positive symbol would encourage applicants to feel equally positive as they journeyed through the CRA pages failed. The topic of rewarding the applicant is revisited, but the context shifts to what the applicant actually receives for working through the CRA. As Wally states, if the applicant has put some effort into completing CRA, there should be a reward. Wally suggested that this could be in the form of feedback and analysis.

By rewarding the applicant in this manner, feedback could take the form of a set of guiding principles, a set of actions that could lead to their creating a campaign that should be stronger as a result of having made this effort. Interestingly, Wally seemed to be of the impression that this might be easier to produce as a paper version (as opposed to digital). But as a digital concept, with some form of artificial intelligence, producing a small report that could be used by the applicant as a guide to next actions would add value for the applicant.

There was some discussion about the process for developing a digital version of CRA. As a direct result, this work is now in progress, developing a minimum viable product. Furthermore, this has provided an opportunity to revisit CRA and adjust some of the language, making it more appropriate to the target demographic. These developments are a direct result of these interviews.

An area where Wally concurred with Sara was the inclusion of passion and drive in CRA. As Wally observed, for an applicant, this aspect is strongly associated with the reason for the end result of the campaign. Implicit in this end result is the passion and drive of the applicant. Their desire to extract some change to future conditions and this is where the capital investment by the crowd will be used. The applicant must be driven to implement this change, or why go to the effort of creating the campaign. Crowdfunding can be used for the purpose of promoting an idea or testing a market. Even in cases where capital investment is not being sought the applicant is going to great effort by completing the CRA.

Furthermore, Wally was explicit that he thought the depth of the CRA was positive. In Wally's view this adds value for the applicant rather than detracting from it, as had been suggested by Sara. A particular point that Wally raised was that CRA also encourages an applicant to think about alternatives to crowdfunding and contingencies for situations which are unplanned and may have negative impact on either the crowdfunding campaign or the planning process. This, for Wally, is where the uniqueness of CRA can be found. Wally implicitly claimed to have read other material on crowdfunding but was of the opinion that CRA was better placed to help applicants achieve their goals because of the depth it offers.

Appendix G: Interview Transcripts (abridged)

G1: Sara – Consultant

00.01 – 27.20 Social small talk

27.28 Interview starts

[How long did it take you get through the booklet?] Ages. That's why I shortened it. Because I thought if I'm going to test this with anyone, nobody's going to fill it in. Nobody's going to do it on their own and I don't have time to go through it with individual campaigns.

27.30 I'm looking just at the questions, there's nothing wrong with the questions, I just think the people I work with would just look at that and say you must be kidding.

Interference
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28.00
Where you explain everything which is where I started-off, I just thought, oh no, I didn't even understand the scoring to start off with, and then became clearer. I should have started with the questions.

Some of the language wasn't appropriate I think for third sector donations rewards programme but possibly more for businesses. So they could be almost too, umm, yea, a few of them that explain, I mean it's, the one with the tips, because some of them are for business speak and some of them isn't what the language of the third sector and that's fine, you know, because, you know, you're not coming from that.

I mostly deal with entrepreneurs, social entrepreneurs and charities and community groups, the businesses that I deal with come through the general workshops, I tend not to do those, and I think the reason I don't is because Crowdcube and Seedrs do their own paid for things. So they can, whoever's asking the people think oh, we'll just get Seedrs in because they'll do it for free, I don't think it's quite the same as what I do. But from their point of view it is, because I do a whole thing about is crowdfunding appropriate, are the models appropriate and which one's for you, while the platforms themselves say crowdfunding's for you and our models the best, so it's a very different message.
But it's very interesting you need a lot of intervention to help people go through this I think.

It was page 8 and 9 where it says instructions, and I just thought God, if you really want somebody to understand that like me, they won't.

I never got round to scoring it at all, I was just looking at words and the way it does it. There's nothing with each of the pages, as I say, sometimes just the language, I was going to use it with some people, who as I say, just wanted to launch before Christmas, then I thought, I can't,

because they're wanting to launch before Christmas and they're desperately busy and I don't want to hold them back for this.

31.16 The other thing that seemed to be missing, forgive me if I'm forgetting it, was crowdfunding is about passion and fun and it wasn't really about passion, especially in the donations / rewards, you've got to put it across in a way that engages and people get your passion and they want to be with you on a journey and it's all those, that language which wasn't using and obviously I think probably your background is more academic while I come at it more from the trainers point of view.

31.44 That's where if you're doing the third sector you'd probably do something about the language of persuasion, yes, absolutely, but it's getting the crowd on board, it's with you, do you see what I mean?

33.32 It's certainly not rubbish, I would just feel if I was doing it, even with an entrepreneur, I'd have to re-write this for them. It's not the language of every day. I mean even, sort of "Have we considered alternative suppliers", and you think well, what do you mean by 'supplier' in this one? You know, where does it fit within peoples thinking. It's more for investors.

36.45 [What's missing?] Well it's the personal, the passion it's all about, because I always say it's about the crowd, not you, and the whole focus, and I would imagine the board game is the same, it's all about you getting to a particular position. Actually you're not going to one funder or a couple of angel investors you are telling your story to lots of people and you don't know how they are going to receive that. So it's do you understand how people will read, or even hear, you. Do you know where they are, do you know who they and why your project would resonate with them, what are their passions.

37.21 So I have a social media engagement template, the research is that people generally take three reminders to three different channels and three different messages to get them to anything. So you might meet a friend in the pub and say, oh I'm crowdfunding, you know, would you, back it, and they say yea, yea then they see it on Facebook and say Oh God I've got to do this and then maybe you phone them. Or something, you get an email, because then it's holistic, it's in their life rather than spamming them and I think a lot of this is talking about the ties and the language you use, is about you.

37.56 And actually crowdfunding is backwards and forwards, much more than anything else, so I have this thing. And I ask people think, real people, why would they be interested in what you're doing? What are their motivations, their visions, their values, where do they hang out and how are you going to reach them? And when are you going to reach them? So it's all about them.

38.21 Because though, you know, you're talking about feedback from the crowd it's still, you know, it's about this business and the game has to be, you know, you can do all of that and get to the centre and you'll still be wrong.

38.36 I mean the whole of this is that you're doing your infrastructure and everything else, but there needs to be something else about people, you know, I mean you may say it's in there, sorry, I'm just looking through.

40.28 Well there's some bits that the language you just, examples you gave there, anybody running a business should know cash flow / USP, when I do my training I use USP and very occasionally somebody says what is it? But they tend to be right at the beginning of their entrepreneurial journey, or they're from a community sector.

40.46 But here's an example of one that, it, umm, where it's not that language it's your language of academia, 125 / 8.4: "Can we connect our vision with any significant cultural icons?" So what is a cultural icon? OK, I might have an idea, but I'm in that sort of frame, and then it says: "Linking back in this way can ease understanding of the vision being created." That makes no sense to me I'm sorry, err, "People might get it quicker if they had past experience that they can relate the new thing to", that makes sense, "This is really powerful if the concept of the vision is introducing a radical one", but what on earth does that mean and how does that relate to a significant cultural icon?

41.28 While I say: "Do you know any influences in your sector?" What are influences? They're people in social networking centres, connectors, bridges, and explain those terms and then say "How would you connect with them and engage them in your project? And the other one is "Do you know any celebrities?" Don't ask them to give you any money, just ask them to share them, but you can't just go up to somebody and say share my project because they will just slam the door on you and nothing will happen, so how do you make contact with someone? You've got to give before you take, so I talk around who are influencers and what does an influencer mean? They're the people who open doors for you, that people look-up to that if they tweet it people will say well then it's OK, because what you want is the credibility factor of your project beyond the people who know you really well. So influencers can do that, but influencers will need something from you, so if you're fundraising in their area, find out what they do and offer them an article or some photographs or something and have that conversation before, you then say we're fundraising, remember we've had this conversation about XYZ, now we're fundraising, you know, could you share it, could put it in your newsletter? But you've already made that relationship and that's maybe what you're getting there.

44.20 I'm coming at it from a different angle. Remember I'm coming at it from the reader's point of view who doesn't know any of your thinking, but works in a sector, and works in a sector with people who, everybody absorbs things really quickly or they don't, people they don't spend long on web sites or don't spend long doing that and so I'm coming at it with my own views about what should be there not just yours. But there's a lot of things that's completely, you know, new, and I would, that's why I did the checklist questions because I thought I could get people to consider those shortened questions, but I'd never get to do this unless I was doing a lot of work with them. But it would have to be appropriate for them as well and I did feel for the third sector it's not appropriate. I would have to spend so much time trying to explain what I think you meant, and I might be wrong of course. You know, I might say I think he means this, but actually you go no that's not what I meant at all.

46.21 The message, you know, where's the passion, where would you put that in? Because the whole thing is about, you know, the thing that you're passionate about and those are the ones that are successful where they are, well apart from debt, which, you know, people don't need to know what they are, donations, rewards, umm, it's about the passion that's there then they use this to be able to convince people to come along with them.

46.47 So trust is one thing but that's different to passion, your networks, you can have that and then you put something out that you're not passionate about and their not it will fail even if you do all this really well. Because you'll get a consultant to do social media and yet the social media person isn't passionate either so it's where I would, you know, designing the strategy but there's the wider question of why are you doing this and why are you crowdfunding?

47.18 The real big question is why crowdfunding? If all you want is just the money then you're missing a trick. Because crowdfunding is about people, it's about customers, your audience, umm, and people are like gold dust their not funders. And this is, you know, your business plan in a way but people are not a business. But I'm coming at this from a very particular angle.

50.36 The language isn't just about the third sector, it is about the entrepreneur who'd be looking at this, umm, I gave you the example of the cultural icons one, that wasn't just looking at it through the third sector point of view, it didn't make sense. It made sense in your mind, what you meant, I'm sure, but it didn't relate to the kind of, the normal, it didn't explain the question, so that was just one that I , umm, and it's this term "Can networked individuals easily spread the word?" Well what does that mean to an entrepreneur, it will only mean to people who have done studies on social networks and used those terms, so it can be, can the people, who believe, you know, *can people spread the word*, spread the words, OK, very more accessible language.

53.13 [Talking about CRA] I'm very interested in the game as well. I think games can work really well when I did training and all sorts of things, I used to design games from card games, to put the point of view across, or best, physical games, like physical noughts and crosses to explain things and all sorts, and I used to use cards, like, I did a couple of Top Trumps, climate change Top Trumps and things like that, and, umm, so I wanted some success cards, and I actually backed a campaign on Kickstarter, the Kickstarter Success Cards and thought, oh, like I'll use somebody else's, and, it wasn't successful, the campaign.

54.02 Absolutely fantastic. So there's an example of somebody who's got it in their head, presumably, because I never saw the card, how a campaign should run but misses on something absolutely fundamental, is, could he do it? Unyet Kickstarter Success Cards you would have thought, you know, loads would want it.

54.42 [Reference to a specific initially failed campaign – a book on crowdfunding] He [the author] sent me the link I made some comments on it, *Author*. *Author's* absolutely passionate which can put people off, and his whole language, the language of the campaign was exclusive it wasn't inclusive, it was badly designed, it was all colours and fonts and the rewards weren't good enough, you know, you had to pay an awful lot to get a pdf of the book and so I fed all of that back, I didn't back it myself. Because, you know, why? Why would you? But yea. I don't think you know, and on LinkedIn I often joined in sometimes, I don't do so much now, when he really put somebody off and put somebodies back-up because he can be quite aggressive, I think, if someone seems to be coming at it from a different point of view which isn't how you run a crowdfunding campaign.

56.44 [Reference to herding and Luke Lang blog article] I was just going to say about the herd, the real motivation is why there is no herd mentality for crowdfunding, because, umm, people don't like to hear that. And Luke is speaking out to his investors and saying you're all highly

intelligent people, you're all make your own mind up and we help you do that. Rather than saying, you're all just following each other and you don't know what you're doing. So he's not going to say that is he?

57.18 And I say to my, umm, in my workshops, I say we are creatures of the herd when it comes with money. Just think about Northern Rock, a couple of people queue outside and you've got the bank, you know, failing. Umm, so, but that's to say that the herd mentality, is it OK, people think it's OK I might come in, if it's not OK, I won't. So that's where the strength of it is. So if you launch with 30% from quite a few people and you are really talking to people and valuing people, umm, people will share it and therefore people who are looser connections come in and say it's OK, it's popular, that person is OK because somebody else has validated them. And so they come in that way because they don't necessarily know you and they're not going to do the research, they're not going to research, they've got to get it within a minute, number of backers, looks good, something I'm interested in, I'll back it and it's go that quickly. And, umm, because our default is not to give away our money, or to invest it or to lend it, you know, so you've got to get over that barrier to able to do anything at all.

58.26 Umm, I mean I give away a lot of money, I back a lot of campaigns I haven't yet gone in for loans although I do plan to but I've not invested in anything. It's motivation and the mentality is very different, you've got to love them. Lending, yea, I think, you know.

59.35 [Talking about motivational affordance of investing] Because of the sector their working in. Oh, I can understand that. Er, to invest anything significant in a single company, umm, unyet I do see ones, there was a guy who is em, who I met the other day who wants to open a pizza place in Manchester, I just liked him, and I liked the idea of the restaurant, I liked the fact that he works very well with the staff, you know, tips are shared, umm, it looked really, you know, and he was passionate. And I thought yea, that's the sort of thing, where, you know, come in as a founder member, but I probably won't, you know, but if it's donations / rewards I might think OK, get a couple of pizza's out of it and then bring the family, the boys as well, the boys love pizza, I actually don't like pizzas but he said there was other things, and he said I would like his pizzas, so, I said I've been to Sorento, I've had the best pizzas, left all the crusts.

G2: Wally – Marketing

NOTE: Prior to this interview, Wally had received a paper copy of CRA and at their suggestion had gone through the book and made some comments prior to the interview. WALLY did so using sticky-notes that were stuck on the relevant pages. For the most part, these acted as the reference points for conversation during this interview.

0.30 C: Thanks Wally for notes and having read through CRA, the version we've got now, the new thinking of how we're going to digital with it and into an app format.

0.44 WALLY: Yea, I'm excited about that.

0.49 C: Your background, you've got business advice, XX [company], marketing etc. there's a big business background, did you, could you see any value in CRA as a publication for people wanting to crowdfund their visions?

1.03 WALLY: Yea, definitely, I think it takes people really well through all the thinking they need to do, it's kind of like here's the homework you need to do to be successful, umm, I think there's a nice framework in there, umm, it takes people through a good linear thought process, ah, but it also moves around a bit, so you need to think about lots of different aspects, it's not just like ask the crowd for money and they will give it. So it gets into all the depth of what's really involved here. umm, so yea, I did see real value. I also liked the fact that, um, you look at the impact the campaign is gonna have on them. So you talk about their family, their connections, their local community and how you can leverage that and I thought that was quite powerful, 'cos you're kind of coaching them as a person as well as coaching their project. Umm, so I think it works on a couple of levels.

1.52 C: That was, yea, that was something I was keen to have in actually, I remember thinking, because nobody, we, were, doing a thing on the dark side of crowdfunding where, and the premise for that was you shouldn't crowdfund your vision because you're not the person possibly, you know, to develop this vision or to get out there and create this, there were all sorts of things that we were bringing there, but it was also looking at some of the mistakes that had been made. But one of the things that came out of that was the impact it's had on family and friends and stuff, so that was the reason I was, sorry, I'm trying to justify it, I don't need to...

2.23 WALLY: No, no that's great. I think it's good that you get into the sort of, what's it going to be like to be an entrepreneur, you know, this is going to be something you put personal time in, you know, maybe arrange a bit more childcare or borrow some money, you know, it comes down to like how does this going to impact you, and I think that's quite engaging for people, it's realistic and I think that's important. It kind of adds a bit of kudos, because you've like really thought about what they're going to go through and you've also demonstrated your experience of that process yourself, um, because you know you've spent a little bit of time in this, uh, office, you know, away from the kids, umm, at certain hours of the day, so you know, you've obviously felt that yourself and I think that carries across well in the book.

2.59 C: Thank you, that's a real compliment. Now in terms of the design of it you weren't, you mention about the thumbs-up, that you weren't, keen on having too many thumbs-up on each of the pages that went through the book.

3.11 WALLY: Yea, do you want me to elaborate a little more on that?

3.13 C: If you could that would be nice.

3.15 WALLY: Yea, sure, so I really like, I like the overall thumbs-up thing, it's like, you know, how to make your fund, umm, your crowd campaign more positive, so your like cheering people on and encouraging them and I felt, umm, maybe this is a parental thing, but I thought, OK, maybe there's a lot of encouragement here on every page, why not use the thumbs-up, umm, when they've got to the end of a chapter, or, umm, or they've answered some questions, you know, like, here's a little reward, a bit like you do on social media, if you like something you give it a like, but if you like everything, it kind of becomes less valuable.

3.48 I like the symbol, I think it's quite powerful and it ties quite well into, umm, you know, Facebook, and those other apps that we spend a bit of time on, so I think it's good to use it, but I would say just use it sparingly, as a reward, to symbolise you did well.

4.02 C: Yea. So maybe at the point where you level up to the next section...

4.06 WALLY: Yea, exactly. Yea, yep, so don't use it on an introduction, but use it at the end, you've filled in your quiz, well done. And it's nice, it's a friendly book. No, I like, I like the thumbs-up thing, it's important the book's friendly...

4.18 C: I think that came out in the notes you made, yea, that, I'm gonna digit...,I'm gonna right these up, I haven't got round to it yet...

4.22 WALLY; Yea, no that's fine. So it makes warm, so I like it but don't overuse it.

4.26 C: Yes, yea, use sparingly, that's exactly, yea, yea...

4.29 WALLY: I mean you could, you could use it progressively I mean you could have a faint thumb come up and a stronger thumb come up at the end. So you could kind of do it, kind of ramp up the, the fun-ness towards the end of the book if you wanted, so you get more of a congratulation when you get to the end. Right?

4.42 C: Yes, yes. yea.

4.44 WALLY: Just to. You know. You could make it progressive.

4.47 C: Yea. You also mentioned your campaign sections. So for each of them, and the audience enjoyment. Umm, fulfilment, I think was one of the things you mention a little bit latter.

4.58 WALLY: Yep.

4.59 C: I get that. I think you're right. It does need to be more, umm, the focus needs to be more on them, maybe, than what we had. Where there any other weaknesses that you could see in the book, did you think there were any, was there anything that you thought, crickey, why has he said...or why has he done...why is it formatted...

5.16 WALLY: Umm, no, I think, I actually kind of admired the thoroughness of it, and although, umm, some people might find that a little wearing, I think it's good to show all the aspects of the campaign. I'm pretty sure I read somewhere at the beginning that, umm, you know, you might not need to do all the sections in a linear format, so you might wanna, so you open, you can open the door to people hoping about a bit, however, you probably need all of it there, because you just don't know which bits people are gonna use, but I think if instructions at the beginning are, you know, I don't how to phrase this well as an author, but you know, you might wanna use 70% of this. It's also good to give people just the awareness of, umm, oh you might wanna think about the impact on your family or work, so it's good to show all those aspects and give a three sixty view, but you don't have to necessarily drive people through every section, kind of, you know, got to get to page three hundred and fifty two before you finish, its sounding quite wearing, you know. You can jump about a bit if you want, and I guess, to be honest, that's probably how people read these days as well. Umm, realistically everyone's busy and their on their phones and drinking coffee and they flip about a bit right? No one, no one really reads in a linear fashion, so much, apart from maybe monks, you know...

6.31 C: That, actually, you've just hit, that possibly then is going to be a problem for the digital version then uh? Because we're expecting them to go from, to level up from each section, so the sections are, sorry, I'm just showing Wally where I've written, hand written the err, how might we'. With the responses underneath them, but they've got, the idea being that they go from one to the other, and their scoring points as they go, so that does present a linear progress through each of them before they level up to the next one. But actually, I suppose it's a different tool isn't it?

7.00 WALLY: It's a, yea, it's a, it's a different medium, it's not just their reading for, in the book I felt they're reading for their own education and interest, so you're browsing as well as.. trying to progress your campaign as, so some, so people use this thing in different ways. Some people will read the book and go ah OK, now I know all the things I need to think about and they'll probably just put the book down and crack on with being an entrepreneur. Some people will read three sections and probably put it back on the shelf in Waterstones and not pay for it, we need to have words with them, and then, umm, some people will use the app and I think they will go through it page by page and they want that score at the end, so you've said you'll get this lovely diagram of where you're at, umm, I would say when you're testing it, see how long it takes to go through all the questions and see how many minutes are people prepared to put into this thing. Because if you find over eight minutes they get distracted by a passing squirrel, then you need to kind of make it six minutes, so I would say look at the length of how long the digital version is, you might find it, you might wanna have it shorter than the book, but as you say ts a different media, so people might be shorter, might wanna shorter session. Otherwise their batteries gonna run-out or, you know, their gonna have to get on a bus, or whatever.

8.05 C: [agrees]

8.08 WALLY: But test that, umm, you know, entrepreneurs may be willing to go through the whole of it, but I would say if its two hours, probably not. So you kind of, I guess you just need to think about the timing of it, or whether you have a way of opting out of questions, what if you can't answer a question as well? What if you don't know today what the answer is to that question, so you could have a skip function, umm, but be careful that lazy people don't skip all of it.

8.32 C: That was the, I did think about that with the digital version...

8.34 WALLY: It's a bit of a dilemma, right?

8.36 C: Yea, skip, what, that was the original idea of the swipe was that you could just skip the question and move on, but if you do I think, or maybe a don't know or, yea, like you say, a not yet, I'll come back to this question later.

8.48 WALLY: I would say in your first version try and keep the technical complexity in your development down. Don't do the skip thing, test the longer version, and then that's, you know, you're making it a more elaborate app if you can miss things and jump around, and then you want an app you can log into because you want to you want to go back to questions you didn't answer so you're building technical complexity, but I think just test the process get the questions into an app, get it front of some people, don't build all the bells and whistles on it in phase one, and that might be something to think about with the technical build, you might wanna do it in two bites so that you've got something you can test with users before you spend all the development money...

9.25C: Minimal viable product...

9.26 WALLY: Yea, exactly, try and split it into two phases.

9.30 C: I could see how that could work, yea, thanks Wally, yea, really good. OK, umm, questions, so coming back to CRA the book.

9.38 WALLY: Yea, of course.

9.41 C: So, did you, OK so this really refers to the sections where we've got the little tips underneath each of the questions there's a thumbs-up and then there's a little blurb, just a sentence or two, so giving you a little bit of information. Did you feel that was adequate, or too much, too little...

9.58 WALLY: No it was good, there was a nice little tip on each page, I think if you could just answer the question then you would and then if you kind of wanted more detail you could skim down. People read in that F pattern, don't they, so their gonna start top right hand corner and go to the right, so they're probably going to read the question then they're going to go down the page, well that's certainly the way on digital so I imagine prints probably similar as well. And the F is there, so they start here, they go there, and then they'll do that so they'll probably do, so probably hit the top third first, and then that felt like an afterthought or if you needed a bit more information. Umm, but, underneath the first thumb, umm, there's the kind of seven or

eight words of what do ya wanna know, and if you can just answer it you can just tick the box and move on, I think that's great. So there's like a short version and long version on the page and I think that was OK.

10.46 C: OK, good, good. I mean that was actually the objective really of that was to, exactly that, if they wanted that additional information it was there and they could delve into it.

10.55 WALLY: And no you've told me about the app I can almost sort of, going back to the print, that kind of fits with the designs.

11.01 C: Right, right. You get the thinking...

11.03 WALLY: Yea, sure.

11.07 C: In some ways I kind of regret doing the book, I think I should, maybe...I kind of th...part of me thinks maybe should have gone straight to digital, but then if I had...

11.17 WALLY: I think it's good to write out in long form first, like anything, you know, if you had more time you could write less, isn't that the kind of, phrase that's attributed to about a thousand different people including Churchill and a couple of other authors, but you need to write it out long first and keep the book, you know, it's a development stage.

11.34 C: It is. Or it was.

11.36 WALLY: Yea. yea, but you've moved on now and that's OK.

11.38 C: But I am thinking as well that maybe...

11.39 WALLY: It's good to get it all out on paper, there's a lot to be said for that. And you're academic rigor means you're the sort of person who can do that, rather than just jumping to an app. that hasn't been thought through, which might have quite a bad result, so...

11.51 C: That process, that iteration...

11.54 WALLY: Yea, yea, you're refining aren't you, moving to digital, so you're kind of simplifying it, yea, so that's fine.

11.59 C: Yea.

11.59 WALLY: But you're good to keep those because I think it's part of the development process.

12.02 C: Yea, I do agree. I think we are, I'm looking, I am looking at reformatting some of the questions and some of the text in here and then maybe bringing it back to the market, 'cos at the moment it's off the market, I've not, I've withdrawn it, just, because I wasn't happy

with some of the, some of the criticism I've had, which is good, just means it does need a bit of refinement I think and that's, that's good it part of the process...

12.23 WALLY: Yea, definitely. 'Cos, and you've got to make something before you can get that feedback. So if you don't make book one, how are you ever going to know? So you did that and now you've got the feedback, you're benefitting from having done that, so um, yea, book number two I'm sure will be even more amazing!

12.45 C: What help do you need? That was a question on page twenty three that we had, umm, which I think was one of the questions specifically to this one, yea, the skills...

12.56 WALLY: Yea. So I think it was, my thinking was, that it was good to assess your own skills but also just to realise your limitations that you might need some help from other people and that might the guy wo lives next door and does app development or, you know, is a banker or, umm, you know, has a pot of gold in his garden, or whatever, you know, or there might be someone else who is a key to another network that, oh I really need to get to kind of these kind of people but there not really in my world, oh but do I know someone who knows those people? And then, how do we, you know, you might wanna, you know, you might need to buy this buy a coffee, or whatever and then kind of go and say, Oh, we need to, can you help me get these kind of people around the table?

13.35 WALLY: You don't always have all the skills, and, umm, you often have all the skills but you don't always have all the contacts. No-one knows everyone, right. So, that's how PR and those sort of industries work. it's like who's the link to the crowd that you need to get to? And, umm, just have a think a bit about outside of your world as well as within it.

13.54 C: That's a brilliant insight, I hadn't thought of that, because my, well as you can read from that, the point to that was you that you were looking at the crowd so when you open up your crowdfunding campaign are there skills you can gain there from the crowd that may be able to help you. I wasn't thinking of a more local, or more connected personal sort of level, you know, maybe you've people next door...

14.14 WALLY: Yea, I'm sort of veering back to the ties kind of area aren't I?

14.20 inaudible

14.21 WALLY: Exactly yea, yea, yea, I need to get, umm, on message with that. So yea, umm, exactly.

14.26 C: But it is, you're right, it links...

14.29 WALLY: Yea, sometimes you need just a little bit of help from, you know, someone who's just on the edge of your world, umm, so what skills have you got, umm, yea, you've got a lot to bring to the crowd, but what do you need to borrow?

14.41 C: Yes, yea. That's yes, really well put. Yea, yea. I wonder as well actually, as a secondary thing to that, when we've got the spider graph when we come to that, if it...

14.50 WALLY: 'Cos I think entrepreneurs think that they can do it all themselves which is what motivates them, but sometimes they, there are specialisms out there that they might need to tap-up. Yea, go to the, let's talk about the spider diagram...

Conversation moves to discussion of the spider graph.

15.39 C: There's one criticism I did have is that maybe the title should be at the end of the line as they run through it. That where you have the points where it makes contact on the outer...

15.48 WALLY: I think you're right, umm, yea, I would say so, I hadn't thought about that before, but actually, yea, you want them to know that the line is the measure, so the label should be on the line, I think that's great. I mean you could do the spider diagram in different ways, I mean you could do it as a graph, but then the title would be under the block, right? Umm, so yea, I would say that's a good shout. It just makes it a little clearer, umm, I don't know if that would be harder to print or create, umm, but yea, I would say that's a good idea.

16.17 C: The only issue I had with it, actually, was, because it splits through the middle and you had, umm, internal and external, that would shift, that wouldn't be as clear...

16.30 WALLY: Uh, yea, if you had a dotted line across it, umm, 'cos you could then see if you were really weak on internal and really strong on external. Because that would be a good thing, if you could read that visually...

16.39 C: Yea, yea I'm with you. Split it this way. And have the dotted line coming through here.

16.44 WALLY: Yea, or just a sort of, yea, something quite gentle to show that divisions, umm, in the fifty percent, 'cos, umm, I think that's what you want is, you get the scores for each, umm, variable, umm, sorry geek word, umm, so like policy is three culture is nine, but then the spider diagram gives you that sort of aggregate view's like, well overall, you know, your weakness is your internals, umm, and that's what you don't get from looking at the individual scores so that's like the benefit of the diagram right? You get like the helicopter view. Here's the trend or here's the lay of the land, oh, but there's a bit of a hole in these three areas and there all kind of similar.

17.22 WALLY: So you could get an action plan from that, saying you need to nail that bit of your world.

17.27 C: Before you move on...

17.28 WALLY: Yea, and there might be, each of these individual things, was there eight?

17.31 C: Yes.

17.32 WALLY: Umm, they might sit in quadrants of three and you can say, umm, so trust, networks and infrastructure, there're all about groups, your groups are a bit weak, you

could get that as a reading out of the spider diagram. Do you see what I mean; you break it into kind of things that are bigger than the variable but smaller than the circle. So fractions. We're talking about fractions. So yea, it's a bit of colouring in going on there or zoning. So what zones are you weak in, and that's some value you could get out of the spider gram if the, if the things group nicely. I don't know if they do...

18.05 C: They do, I mean the idea originally was that they interrelate with each other I mean...

18.10 WALLY: And that will be the point of visually...

18.12 C: Ties is an obvious one with strategy, but trust also ties in quite well with culture and skills that you've got, you know, are you able to demonstrate these skills or demonstrate that your customs and the ways you do things is good, is right, you know, it adds a bit of clarity or...

18.29 WALLY: 'Cos you might have, I don't know, a really extrovert entrepreneur so their amazing on network and comms and something else but they might be really weak on structure and technical and, umm, finance, I don't know, I'm just making this up. An imaginary character, umm, so then you could get that from the spider diagram, you could have a sort of zones analysis as well as a variable analysis. That could be quite powerful, and you could probably do that more easily in the book than you could in the app in version one. But it's up to you. Obviously. OK? But yea, I think you should have a little play with that and see what value you can get out of it. They've put the effort into filling in this questionnaire, you wanna reward them with some analysis at the end, going, hey, this means you should do this. It's like Google analytics isn't it, everyone loves it and they get lost in the stats, but are we actually gonna do? That's what my, umm, analyst says to me all the time. These are great stats XXXX, but what is the business actually going to do now? That's why it's, ugh, that's such a hard question and if you can answer that in the book then you've not just done an audit you've also created an action plan for them, and that's the value they get back at the end.

19.32 C: Gotcha, yea, that makes a lot of sense. Because that ties in with how you do it, which was you notes on page 28 with the spider graph. How you doing, where are you?

19.46 WALLY: It's a bit of reflection back to them, isn't it. And the books helped them do that, and they probably know, that they're a little bit flaky on X or Y and this just helps bring it out, right? It depends how much self-awareness they have. Or they might be horrified and never show any of the book to anyone again. It's like, it's my secret and I'm not going to show anyone. I'll just keep it in my head. Don't show any of my friends, I'm so embarrassed. It's the book of shame.

20.15 C: So, we're coming up to page thirty three, which is the warm-up questions and the first set. In your post-it note you said what market will you be in? Future focus. yea, OK, you said...we crowd?

20.28 WALLY: Umm, yea, I wasn't sure if it was about, whether it's we, umm...

20.33 C: As in the entrepreneur?

20.34 WALLY: It says what market are we in, and I, did that mean, what market is the crowd in or what market is the entrepreneur in, who's, who's perspective is it? Is it the crowd or the entrepreneur? But I think you're probably clearer on that than I am, I was probably just getting through it, OK, that's cool. So does we mean you? If I said to you what market are we in? Or like, what market are YOU in? I'd probably say that person to person. But I'm just playing with semantics there.

21.03 C: Maybe that's an issue with the digital version though, 'cos with the how might we questions, we've framed it as in WE, we're talking about us, like the book, or, sorry, the book, the app is a member of the team so it's phrased as we, and us, all the way through. But then again, I suppose, it is shorter questions aren't they? Actually they're not as prolonged as these, or they're not as detailed maybe as these. They're a bit more snappier. I think again testing is the answer I suppose.

21.37 WALLY: I think so, yea, test it with a couple of people who've not seen it before and say, umm, which of these questions works better for you?

21.42 C: You did mention future focus though, and again, did you mean where you want to be as an entrepreneur and though this crowdfunding process?

21.54 WALLY: Yea, you might currently be in education but really want to be in world domination or business or something like that, or you want to be in charge of another country, or whatever it is, you know, 'cos, you know, you're getting your campaign up to do something presumably to get capital in but where is that gonna go, ultimately you actually wanna solve world malaria problems not put a PC on every desk if your Bill Gates. It's like, OK, that's moving ahead a bit, but, what's your angle? As an entrepreneur. Where's this going?

22.20 C: Actually that's a very good point because that doesn't really come out of this does it, at all. That end point...

22.24 WALLY: What do you want to change about the world.

22.26 C: Yea, it's just focused on the campaign, but then I suppose...

22.29 WALLY: I guess they already know that so it might be going too far, but it could be an engagement question.

22.35 C: Yea, yea, yea, yea I can see that XXXX, actually.

22.39 WALLY: Where are you going with this, that's what I'm saying.

papers rustle

22.45 C: That actually ties in with something from the literature that we got with Mollick, one of the more prolific American writers, uh, no, sorry, with Sharma, with the original, umm, there was a working paper from an academic at London School of Academics, called Sharma, Ankit Sharma, and this was a lot of the inspiration behind this came from, it was a response really to Ankit, now when Ankit mentions, what Ankit was very clear on, the very first thing, was he labelled it strategy and vision, I think it was, and it was clarity, how do you clarify to the crowd what it is you're doing and what that vision is that you're creating.

23.22 WALLY: Yea, exactly, what difference are you making to the world? That's the vision, right? Yea, we want a world where there's, you know, umm, no more elaster plasters, or whatever it is, or plastic in the sea, but this week we need to do this, umm, in our road, umm, but we want to get to the point where Whales are much happier, you know.

23.42 C: So it's those aims leading to those objectives?

23.45 WALLY: Yea, yea, what's that ultimate vision? What's the BIG vision? You know, and kind of, that's exciting for entrepreneurs right?

23.51 C: 'Tis isn't it, that's the thing that gets them out bed really isn't it? So we're moving onto 68, you said resilience on the post-it note with a tick and a smiley face...

24.01 WALLY: Cool, so what was it I liked about that...

24.03 C: [READS] Are contingencies in place for infrastructure fails...

24.07 WALLY: Yea, I thought, umm, what struck me about that question which I thought was really good, umm, and didn't need changing, was that, umm, things don't always go to plan right? Umm, stuff happens, so what will happen if, umm, your backer stops funding your free room in his office, or, umm, what happens if, umm, you know, think of some of the problems you might have, that's good, that's good planning. It's good coaching, it's like, well, what could go wrong? I think that's a really good, always a really good question to ask. Umm, and just have a little bit of a well what would you do if that happened? Just be..., it's good to, 'cos I think that gives you a more robust plan, umm, that's what they say about planning isn't it, it's good to have a plan, but, umm, things change, umm, I think Mike Tyson said everyone has a plan until they get a punch in the face, which I quite like, umm, and it's like yea, you have a good plan for the, umm, the happy path but think about the unknown factors, you know, maybe there's something in your industry that could change or in your, umm, or in your local situation.

25.10 C: Yea, yes, I'd never heard that Mike Tyson...just brilliant, yea, no I get it. Now that was kind of we were, I was thinking, when I wrote that I just thought is it, because there were, I think there are still... a miss perception that everything's going to be rosy, were going to get the money and were going to go ahead, actually, you might get the money but then things might...I mean Zano was a classic, that little drone, where it messed up, they got two point three million or something and then went bust. I mean, just, or went under, you know, nothing got produced, nothing got shipped, it was just an incredible amount of money that they lost, in effect, so that was kind of my thinking here with this is good, that was good, but resilience was the word you used here and I think maybe...

25.51 WALLY: Yea, 'cos you've got words like, I like the word here, like, what are your contingencies, you know, what if, umm, OK, so this, this and this seem like a dead cert, but what if, umm, that free bus ride you need on Thursday to get to that interview doesn't happen, umm, what could you do to get there instead, could you do it over the phone or just like have some alternatives, it also starts to build in a more flexible mind set to the entrepreneur, so they will get to their vision but they might not take the path they planned in the beginning. And that's, that's reality right as we get older?

26.20 C: Yes, yea, critical incidents. So...

26.27 WALLY: But that's why this book is better than other books, because you're thinking a bit bigger than just the process. You're getting into a few other things that I think is, umm, shows that experience that you've gathered from the research that you've done, it's like, it's not just about a marketing plan, there's a bit more to it.

26.43 C: Again, thank you, that's a compliment. So come on to page eighty five, how will you change the world, OK...

26.50 WALLY: Yea, I think that's probably what we covered just now. What stuff are and the mind engagement, what's your vision, umm...

26.56 C: That's exactly, the diagram you did and the highlight, brilliant, yea. That touches on something else, actually, one of the other, we had a, umm , a very, err, prolific consultant, crowdfunding consultant in the North of England, and that, that was something that that person picked-up on, that there were no passion and no drive, that was the thing they saw was missing, and it was something that they, they were quite, you know they highlighted quite stringently, where's the passion, where's the drive? And I thought actually they've got a point. Where is that? You know. It doesn't really, but that's kind of touching on what you're saying here, you know, where, you've got your heart and mind and what are you into, what is it that your...

27.37 WALLY: Yea, what's driving you, what's the sort of emotional engagement in this, in this thing that's driving the vision, 'cos, er, you don't want to get too much into the identity of the entrepreneur but, you know, there's some hooks there that's making this thing happen, let's just check, you know, what they are, why are you doing this? They should ask themselves that question. Hopefully they already have the answer and their like bang, straight out with it, it's like OK great, you're good, but if they haven't it might make them think twice which might stop a campaign that's not quite got someone's heart on it hitting the platform which might mean an unsuccessful campaign, you know, unless they take a different track on something that they are passionate about, it turns out that they always wanted to be a lumber jack, OK, well let's focus on that then.

28.19 C: Not a podiatrist then!

28.21 WALLY: Yea, exactly.

28.25 C: So page one oh three. We were looking at ties and I think I know what your gonna say here, profound, uh, sorry, personal network, ecology of your work...

28.33 WALLY: Yea, I am absolutely got what you were driving at, but I kind of struggled a bit with the language but we've covered that right? You said more about community, which I think is, err, kind of more, kind of contemporary and, umm, wider audience word, so that's cool.

28.49 C: In order, we did, we played, yea, as you saw, you know, we played with a few words, tribes ,community, but I think community does...

referring to word TIES

28.56 WALLY: If you're talking to an academic to an academic audience that sounds like the word you'd use, right? That would be their label. But if you're talking to, umm, entrepreneurs I think you switch it the other way around. What book are you writing this week? For the academic, how did I do it book, then that's your word right!

29.16 C: Page one oh nine, err, so just go ahead a few pages, there we are, at skills, so skills and credentials and experience. So reasons to believe. I guess that ties in with what we were just talking about the passion and the drive of the entrepreneur, the hearts and the minds of what they wanted to achieve and what they wanted to do. And I guess with the skills I think I was, we were trying to be quite inclusive with this, in that we were looking at the skills you've got inside your team or inside the campaign but also what skills can you bring in that the crowd might say, now this came out of something we saw happen a couple of times actually with campaigns where, actually one was film, I remember, they wanted, was it a lighting or a sound person, something technical that they needed and they put out a call, can anyone help us with this, and they got a response, you know, two or three people said to them, yea, we can. So that's kind of where I was thinking with the skills, but that also tied in with something that, umm, one of the academic papers was covering, in that there may be skills there in the crowd that, it's not just them, you know, they might have a skill to get you out there, to, to publicise your ideas, you know, spread the love in effect.

30.25 WALLY: Yea, I think actually that's a more specific category than, now your talking it through I'd realised, umm, so it's like what skills have you got, what skills do you need to get this out there, so I think, we've probably started to cover that earlier, umm, but yea, I think that's absolutely right, and also I guess it's just an open question to the crowd, what else do you think I need? Like you question the other day, when you were presenting, it's like well, what do you guys think? It's pretty much ask the audience, any, you know, anyone else got any comments? It's good to have that inclusive openness of like, this is why I'm putting it up on a crowd platform I kind of want feedback and commentary, so tell me your thoughts, 'cos then I get more feedback than I have from just the people I've spoken to, you know, it's opening to a wide audience, what's the point of that, you, benefit from their input, so ask for their input, that's cool. Yea, that makes sense. And the other bit on that post-it note is vision, and we've covered that. So that's great.

31.27 C: And then page one two five, it's the last one. So can we, it's eight point four, can we connect our vision with any cultural icons. OK...

31.39 WALLY: Yea, that's interesting.

31.41 C: So this has had some criticisms this one, endorsing patrons, err, powerful associates that support your campaign, this is from your sticky-notes, patrons or references.

31.52 WALLY: Cos if you're doing something for, I don't know, science, it's really cool if Tim Peake mentions it right, 'cos then something like its massive 'cos Time Peake said it so it must be good, so you want a patron that, umm, perhaps connects you to a bigger audience or gives by association, if they stand next to you your brand looks better than it did. And that's what companies do with sponsorship all the time, Aviva sponsor the rugby, because they want people to think about, umm, you know, a powerful passionate game, you know, compared to insurance, which is not very exciting like, compared to rugby, right? So their trying to make, you know, insurance look a bit more interesting. Insurance companies use a lot of sport 'cos insurance is so dull, you know, so they have to. They have to like, find something cool to put it next to it and then people will buy it. Right? It's important, but it's not exciting. So that's kind of, I think that's what's going on there. So it's a good marketing question, it's like, how can you big up what you're doing, umm, who do you know, umm, have you got a friend who works for the local paper, or, umm, do you know a celebrity, that might turn up, that will open your event and then, you know, cut the ribbon on your bookstore, or whatever it is, what can you use just to get that extra bit of focus, umm, or possibly a long term sponsor or partner if there's, umm, something in it for them as well, umm, obviously, some of these people need paying, but you might just have someone in your network, whose like a, you know, a senior leader in something who can just add a bit of kudos to it. Or maybe someone who spouts about it on LinkedIn, you know, it's like, who do you know that's a bit of trumpet? And get the word out. Even if you don't know Tim Peake, you know, just kind of, maybe go, you know, smaller. So yea, it's a good question, but I think yea, I thought, cult, I wasn't sure about, I thought cultural icon was, I thought well what did he mean by that? While it was like, for me, it was like, OK, for me this is like PR sponsorship, patrons, associates, umm, people that can make you bigger than you already are, umm, so but if you had other interesting feedback...

33.48 C: Patrons is a good word actually. I like, yea, the use of that was, when I saw it on your sticky-note I thought yea that is, you've hit it on the nail...

33.54 WALLY: Patrons or advocates. I think.

33.58 Chris provides example of a monument to an iconic military technology that was being proposed in a town in Hampshire. This technology is widely cited as being decisive in the UK winning the 2nd World War. A sculptor dedicated to this technology was to be placed in a rundown part of the town where new developments were happening (casino, hotel and retail). Focus group held to assess local feelings about this sculptor.
Young people backlashed against it - claiming 1) why would they fund a dedication to a weapon of mass destruction, and 2) why are the developers of this area not funding this piece monument? ##

34.59 WALLY: I've started saying this more, 'cos I feel like I've probably become older, umm, but like at work I like, well that would work for my generation, but like, for some of the millennials I employ they'd like raise an eyebrow and go, umm, don't think so, and like, they don't have that connection to those World Wars, erm, you know, they're interested in recycling and veganism their not interested in XXXX [mentioned military technology], their like why would be put money into that old thing, would be the kind thing, you know, one of my staff would probably ask me, that doesn't sound very good, you know, they're just not bothered with that, yea, and as you say, us historic XXXX [mentioned military technology], their view - weapon of mass destruction, killed thousands of Germans, OK, yea, different view point, good to get that from the crowd, so yea, that's, I think that's good, umm, validation of your idea from the people whose wallets might be getting involved in this.

35.49 C: That's exactly it, isn't it.

35.51 WALLY: Sometimes you just use your own perspective don't you? You know, you and I and our parents and our friends, you know, would be very passionate about the XXXX [mentioned military technology], other people, totally different view. And it's really surprising, you know, it's not what you expect is it? Umm, so you've got that, that's the power of the crowd and the external comment and it's harsh sometimes but it's valuable, because you could've gone to market with that and perhaps there would have been a lot of haters out there that you hadn't expected to come round to your house.

36.16 C: So there's a backlash.

36.17 WALLY: Yea, exactly. It's interesting.

37.06 WALLY: And the millennials are pretty online and beyond obviously there kind of generational, they're not the latest generation though are they, there's people below that, and their focus is quite different. You know, their focus on, you know, employment and job for life all of that is probably a value I have which they just don't have, you know, they're not interested in that sort of career stuff, umm, and there's I think there's quite a change in attitudes and probably a reaction to politics that, umm, it's good to get the crowds view on that before you go, umm, what works well with your family and you friends down the pub? Well you picked those friends for a reason 'cos their a bit like you so that's why you want to go to the crowd and get that other view. It's really hard though, like, external feedback is hard to swallow, but it's important I think.

Vanity metrics discussed in reference to Lean Start-up (Ries, 2011).

38.30 WALLY: And the other side to it is, yea, there might actually be a niche of people who really support this and you've just got to find that tribe, so it's kind of, is the tribe big enough how do we validate if this is going to work? You know, if you go global, you can often find a tribe of XXXX [mentioned military technology] supporters and, you know, you'll find

that their not just in this country, you know, people are really interested in that old, umm, vintage stuff, but yea, you've got to spin it as a vintage XXXX.

Discussion about Wally's family connection to XXXX [mentioned military technology].

39.10 WALLY:	Yea, and that's interesting and you can look at the other side of it to, it's like yea, OK, so we don't want to invest in war, right now, but history's also interesting, it depends on what hat you put on, right?

39.24 WALLY:	Yea, I think it depends on how big a crowd you want. How big a tribe of audience you want, you know, if your OK with niche and their self-selecting people who can find your product that's cool, but if you wanna go global, it's quite hard to, you know, find something that everyone in the world is going to be fairly positive about, that can change what you're doing. Umm, yea, there's definitely some generations out there with quite different views, umm, while we have some in our own houses right now.

CLOSE

G3: Henry – Publishing

How useful did you find the CRA?
Well as somebody coming in that knows nothing about crowdfunding I thought it was very useful. It was a bit overwhelming at the beginning. Because it was quite a lot and if it had a kind of introduction more general about crowdfunding then it would have been less overwhelming. When I did actually get stuck into it I found it really, really useful.

Did you repeat the exercise? How many times? Why?
I repeated a bit of it. Bits of it that I felt were relevant to me. Once.

How difficult was CRA to use?
Not at all, no it was quite easy. There was terminology I didn't understand.

How difficult was CRA to understand?
That introduction I didn't feel like I understand, it was like going into a post-grad thesis without like doing my GCSEs [laughter].

Did you feel the introduction and instructions were clear?
No they were, the instructions were clear.

As a resource for other people seeking to crowdfund their vision, do you think this is a useful tool for them? Why or why not?
Absolutely. but reiterating my last point I just feel that if it had been more succinct [*in the lead in you mean*] no the whole thing if it had been succinct and sort of the reason you were doing things were clearer, if there had been less, then it would have a bigger impact I think on me. Because by the time I got to the end of it there was much and so many categories and so many bits that I couldn't put them together, I couldn't kind of like, OK you had the formatting at the end where you've got this, you know, conclusions and stuff, but I couldn't really connect everything up whilst I was doing it.

Having read CRA, do you feel you learnt something new about crowdfunding? Please elaborate.
Yea, I mean if you want me to elaborate, umm, it's a very complex thing, there's so many aspects to it, and I suppose, I mean what would have been really useful, because of course, every crowdfunding thing is completely different, people come at it from a completely different perspective, mine was kind of like, well I've a network, as most people do, and my practical expectations were very different from the theoretical expectations and I think if you focused more on practical case studies that I could relate to, so for example one of my things was actually trying to be safe and trying to think well these people will support but they **didn't** but actually these other people that I don't know, out there, **did** wasn't something I was prepared for. And just little things like practical things about how to write, how to address people when you're writing to them, because of the amount of language and the same on social media and when you're doing all those things because like, well, do you beg? Do you over elaborate on what you're doing? Saying this is really great, do you do that or are you trying to be humble,

you know, how do you do it, actually relate to people? Especially when it's like people you know, it's much easier with people you don't know, you know, that was difficult for me.

Were all sections relevant to your particular campaign?
[pause] Yea, probably. it made me think about things, yea.

Do you feel CRA was too long, just about right or too short?
I don't think it was too long, I thought there was too much information, too many **bits**. yea, it was too much of a diagram. It was kind of like, I just needed to kind of zone in on the important bits. I don't know. It wasn't too long it was just too bitty and I couldn't connect the bits, I couldn't connect the bits and some of the bits I couldn't really…

Digital version: Yea I mean, digitally I think that would be good because you go next and you go onto the next one, and you know, you see how you are getting along, you know, like with anything, and also because, you know, it was the physical space of the book, you know, where are you gonna put stuff and it was kind of like, sort of, and that was part to do with getting all the information together and collecting it, because it was like well where am I going to write it and what am I going to do with it

How happy did you feel using the CRA?
Yea, very happy. [Goes back to digital above]

Did you use the spider graph?
Yes.

How easy was the spider graph to use?
Pretty easy.

Did it help you identify weaknesses in your campaign?
It did. Umm, is there a **but** there? The but would be, umm, it was theoretical, I felt it was theoretical, so the theoretical weakness but they didn't really mean anything to me. I couldn't like, umm, it was too ethereal it was kind of, yea, yea, I needed that kind of, it was almost like I needed to do it, you know, have it where I am actually doing it, write your stuff in and all that kind of stuff and also because it was the first time it didn't, the first time doing it, I didn't have any memory of what that weakness meant, so I thought well I'll try anyway [laughter].

[It's just a weakness according to this, yea, that's a good point so it doesn't mean anything].
Yea, but you know, you go to a football game and you think well I'm not tall but I'll try anyway.

Did you take any action specifically in response to the spider graph exercise? Please elaborate.
I think I did actually, umm, I can't remember what it was, I mean the video I think, I felt more prepared, I felt like I had done some homework and I had kind of like, I was going into an exam and I kind of, you know, it looked like I hadn't studied at all, umm, but I could have done more mock tests and that's the practical aspect of it, you know, the mock test, or some sort of case study test, and that was you know my fear, and I didn't want to look at any other crowdfunding things because it felt like, it felt like criticising or breaking, I thought well if I look at others

then I want to change what I've done or then I'll try and copy something else but I don't know if that other thing works, and I thought well that's my own individual thing and my individual way, would it be better to just be original and would that make a difference, if I don't look, and so I didn't do that part of my homework which I probably should have, but it required a lot of time to look at all these other crowdfunding things and you can't just look at three because you get just a completely skewwhiff view, And I just thought, oh fuck it, sorry tape recorder.

Did you go to the web site, and did you read any of the resources there?
No.

On reflection, which questions really stick out in your mind? Why?
Oh God, It's along time now – its six months ago.

Did you like the idea [of the CRA]? Please elaborate.
Yes, yes, no I did. But just to be specific about that, so your question did you like the idea of the CRA or the CRE, see I don't know what that is, I don't know what it means [crowdfunding readiness assessment] OK, but I read that and it was just gone past me [6 months, yea] no no, it's not the 6 months, it's not that, it's just even having a more practical title probably would have helped. You know, crowdfunding, you know, companion, or, oh I don't know, you know, just that title made me think like of my god, I've got to do an assessment, it's like, it's like doing my driving test or something, you know, it's just that, it's just that intro and the title could have been more human, just more human, you know, just kind of like this is not a kind of, this is not a CRA, it's a car test sort of title.

What you do to improve CRA for future crowdfunders?
I would change the way it addresses you into a more, sort of, friendly, human, umm, you know, like when you have language courses you always have some little dipstick, like animated person, you know, like 'Hi how are you doing, my name's Gloobow', you know, I don't mean you have to do it that way, but you know what I mean, just to have it like OK, this is a friend helping me to do this rather than a test, an assessment, and then to include a lot of diverse kind of examples of crowdfunding that has worked, case studies kind of things, you know, practical.

What did you really like about the idea generally?
Well it's just an essential thing you need, it's like you can't do it without it. Basically.

How likely would you be to recommend CRA to someone looking to crowdfund their vision?
Yea, of course I would.

G4: Steve – Software

Note to reader: In this abridged interview transcript the interviewee's turn is **unmarked** at the beginning of the sentence. Comments or questions from the interviewer are marked C:.

1.30 C: Is there value in the product?

1.36 Yea I think there is because most people don't really have any idea about how complex it's gonna be. Umm, and the general idea if I'm going to go and get some money, very simple but, umm, the people that are gonna be asking you the questions ah, ultimately a VC or a crowdfund or a crowdfund manager or something like that, umm, they are, their gonna be much more used to, umm, stopping funding a project than they are funding a project.

2.12 OK, 'cos they, umm, if you're a venture capitalist nine out of ten of the things that they see they don't even think twice about. And of the ones that they do invest in, only one of those is likely to survive. So you're really looking at about one or two percent hit rate for them, which is fine, you know, their happy with that but it's, err, plodding through the dross, err, that they really don't like, and if they can get somebody to answer the key questions early on, it helps them then make a judgement about whether or not their gonna invest.

2.43 So if you come into a, err, anybody with money and say look I've done my background research and to prove it here's something that I can show you that shows how I have arrived at these decisions, which is exactly what your book does. Now, in order to, all your doing is reducing the amount of time that an investor has to research you to figure out whether your capable or not and, so, umm, the finance part of it, umm, is what you're really working on here, umm, I mean there are other things, I've sent you that little sort of general overview spider graph thing.

Prior to the interview Steve had sent the researcher a web graph with six headings that he uses to assess strengths in entrepreneurial teams – it is this web graph diagram he refers to in 2.43 above.

3.23 But that, that for me applies to the whole caboodle of the start-up, eh, you know especially things like the team, and the product and the market, so, err, but it's all part of the same thing, err, but your ploughing down into the finance part of this far more deeply than anyone else does, which means that in terms of my model there's probably seven more books available, to really get into things like the team and the product...so um, yea, I think it's a great, and money is the key driver for most start-ups, or lack of it.

[Discussion about teams]

4.46 Every single team that I've been involved with, and that's, dozens and dozens, erm, they've all been different. Even just that a one person start-up, has been different you know, you think oh it's just one guy on his own, yes, but he's all over the map, right, err, and he could be spending

all his time on the product, he could be spending all his time on the research, he could be spending all his time on development work, umm, nothing on finance or he could be spending all his time on intellectual property protection.

5.15 So, umm, as soon as you add another person it just doubles the complexity, and then the third person probably gives it a power of three complexity and it mushrooms from there. So the more people you have in the small start-up the more complicated it gets to analyse what the teams actual dynamics is gonna look like and how successful their gonna be. Umm, one of the, umm, my greatest hit, as it were, was a company called **XX** that I joined when it already had about fifteen people or more, umm, but, they were all going in the wrong direction, and their product was not ready for market at all. Ah, but they knew where the market was, so their map, for me, was useless product, great reach, great market, terrible team, no finance, good intellectual property, it was just a very weird mismatch.

6.21 So the first thing I did was to say, you need to stop building this product and start building a thing that will actually match the market that you're going after. So they threw away their prototype which was basically string and wax and, you know, held together with band aids, and they were using that as their production, erm, system. And it was failing all the time, it was breaking and they were patching it and patching it and patching it, and like, that's not gonna become scalable. So then you throw that away and build something from scratch that is got good design, its modular, its scalable and it's got performance capabilities, then, then they could move further on.

7.05 So once we got rid of the dangerous suspects in the engineering team, umm, they rebuilt it, redesigned it, and, err, I was there for about eighteen months and when I finished doing that, err, although Sidney [identity changed] had to, he had to trust me, I was right, umm, but when we finished that eighteen months he went straight out to Crowdcube and got half a million. So it was absolutely worth it, and he's off to the races now. So very successful, erm, and, you know, there were some things that I didn't do like, I didn't spend some time on finance because I'm not very good at it really. But, umm…

7.46 C: So you were playing to your strengths really, within that team…

7.49 Right, but, but if you know your finances aren't very good, you find someone that's good at it. So it's always a sort of self-questioning system, it should be that way, really.

[Mentioning of hint sections and there purpose]

8.20 Yea, completely agree, I think it's a, err, a really good idea of, err, let's see, when you get down to, err,

[PAUSE]

8.34 I tell you you've got a lot of pages here, but, umm, they're all, they are actually all very much worth it and the way you've actually laid it out means they can make notes on it I suppose.

[Mentioning lay out]

9.01 I'm wondering if, if err, it would be better off as a web site? Because at least you could, you know, score each item on the way and at the end of it could calculate you a sheet, that's a lot of work I think. Not to be confused with expensive.

[Mentions app idea / design]

12.27 Yea, umm, I suppose I kind of subconsciously looked at that and went internal external, but I don't think I really spotted, yea.

12.39 You're right, umm, having some of them, grouping them is probably a good idea, because their, that makes sort of inbound and outbound, makes sense.

[Sections Steve thought were good]

13.25 Let's see, section two, on networks, I struggled with this. Because a lot of these things are about how to score what's going on in someone else's head and not the person whose going, running for the money. Err, so you can't really put a, it's a bit like horse racing, you can't really put a bet on, on whether or not somebody is going to spread your campaign out further, umm, but you can try and ensure it by being interesting.

[PAUSE]

14.06 The first two questions or the first three questions in here, I felt uncomfortable with; "Do you feel more connected spreading the word about our campaign", and, "Do people feel more connected with spreading our campaign?", that I struggled with. So what you're asking somebody who is looking for money is, are, can you tell us that the people you are addressing about your product are happy to spread the word about it.

14.38 And that's just a way too complicated thing I think. I don't, I don't know how you simplify it, perhaps it's not a question, umm, "Have we asked for help spreading the word?", err, that's a good question, and then "What is useful to people who spread the word?" Ahh, is that gamification of it? Is that a reward for using Facebook?

15.24 So those three questions were the ones that I struggled with because I wasn't quite sure where you were going with it and, err, it didn't seem to, it didn't seem to have a very easy answer, because what you're doing is talking to somebody about how the people that their trying to impress are gonna be effected by something you can't even tell them about.

15.59 Right, umm, language of persuasion.

16.02 Err, the language of persuasion, your, umm, your immediately talking about the words that you use in English, not other languages so, umm, there's lots of those bullshit bingo games, erm, management bingo games about, if someone uses the word, erm, going forward or we're going to ideate or, a lot of the sort of marketing crap that you hear in Silicon Valley, using any of these words, I mean, you just, no, no, no and no, just use plain simple English, umm, and if you, I mean there's lots of, umm, what do they call them, these umm, err, you see them every

now and again on Facebook, or something, and somebody will say here's the engineering version of what we do in our meetings, we're waiting for someone to say the following word and it's, err, umm I don't know…

C: Here's the real meaning of…

17.14 Yea, or it's just totally meaningless. Umm, I'm trying to think off hand the phrase, my brains not working, umm, they're the fancy marketing words like we're going to, uh, ideate our way out of this, or, umm, the mission statements, the, err, corporate vision and things like that, some of them are useful, but their often just mush really and most of the non-technical world really doesn't give a shit about that, so use very, very simple plain English, because in a global world, I mean you're talking to people who might be investing in you whose English might not be their first language, unless we exit Europe and put up a big wall.

18.10 But yea, the language of persuasion. Not flowery.

18.31 "Strategy for nurturing ongoing social relations" [READS OUT from 2.7], so this is how you gonna talk to people after they've invested, umm, it's nearly always gonna be email, and, or some kind of umm, social media, fan out, I'm still not sure that, err, social media's got the right kind of thing because it's mostly people to people and it's not really business to an audience, yet, I think it's been completely hijacked by baby pictures and um, dancing children, cats, and I still think that for a business to…it's too easy to ignore, you can snooze somebody, you know, first time you send a 'hi thanks for funding us we're, we're now into version two and we're doing this doing that' and the next thing, and the first thing they do is they snooze you for thirty days or something like that, or just, yea, don't follow you anymore.

19.37 Umm, so if you make it too difficult, it, it can get lost and there's a lot of noise for it to get lost in. Yea, and at the moment I think social media's going to undergo a very large change because of all the fake news stuff, and it's undermining the validity of social media, platform at the moment. Umm, there's people streaming away from Facebook and heading to Instagram or, whatever, umm, and depending on your age, you're either comfortable with that or not.

20.16 Umm, and quite often, I mean people who've got quite a lot of money probably don't have a lot of time to do social media, so if they're going to invest in something they're going to spend their time looking at investments, you know, and if people are involved in crowdfunding their either going to be involved in putting twenty five quid in and hoping for the best in which case they don't have a lot of skin in the game, err, those might be the people who go up to social media, I don't know.

20.42 But I think, umm, getting a buy in from people who are gonna fund you, from social media is a really risky attitude. Umm, that may change in the future if, if for example there's a giant and, umm, Facebook has, you know, different, erm, clouds like there's a business cloud their trying, I think they've been trying to do that for ages and failing massively, but, umm, if, if there's a, a sort of a silo for funding at Facebook that might be good. But you've got to buy into that, so, then you're relying on someone else to create the social media channel for you at that point, even though you can have your own Facebook page, it's not, it's not in a silo that's really with everybody else. It's not organised like that.

22.10 The fact that you're asking people to think about it, "Has a strategy been formulated for nurturing", two point seven, err, means that anybody thinking about going after crowdfunding is got to look at this and think yea well if I understand the question right, umm, I need to do the following which is set my communications with the outside world up in such a way that it's going to be understandable.

22.42 And then 2.8 is really a very, you know, have you verified that you're not, that you're actually saying doing this, which is always a good thing. Feedback, you know, feedback loop.

22.59 Yea, demographics, it's gonna be wide, umm, and there are, there are pensioners with lots of money who are doing crowdfunding, which sounds crazy, but their people of my, I guess my age almost, who grew up with computers, and who have got some disposable income and are willing to do it, I mean the Steve [inaudible] of this world, umm…

22.27 C: But do you see them as funders or creating these visions themselves and coming onto the platforms with an idea?

23.34 I think I see them as funders 'cos their willing to, to bet on small micro…

23.40 C: New ideas?

23.40 Yea. I mean you take a thousand pounds and bet a tenner on everything, you know, umm, so there's some people who'll just sort of scatter bet and some who won't, umm, I think it depends on how much money you're going to put in.

23.57 C: And I guess that's more a time element as well, if you've got the time to research, do the rational, the rational, sort of study, the rational research before you commit to anything on one of these platforms. But I'm guessing they're the people with time as well, that, you know, might have a bit more time, if their retired etc…

24.18 Yea, I mean take myself as an example, I've sort of, I've put, what was it, three hundred quid into, umm, each of six, or six or seven, solar powered things, just because I think solar powers gonna big in the future. Five of them have already shut up shop and gone home, because the government changed the tariffs, but that wasn't my problem, while in the states they defunded solar, and, umm, so you end up thinking this would be a great thing for humanity and then somebody turns round and goes no it's not.

24.57 Yea, so I don't know how that affects anybody going for a start-up because a lot of these things are very, very specific, um…

25.09 C: That's true isn't it, you've got a very, you're right, I mean it's, that actually is an issue we have with the strategy overall and the way that you communicate that fixed entity of what you're going to do and the reality of being a little bit flexible because, you know, new data and new stuff is coming in which means you've got adjust or change or maybe pivot even, you know, do something fresh.

25.30 Yea, well I don't al..,one of the big things about crowdfunding is that if, if you've got a crowd that are going to invest in you each and every one of them has probably got a different idea of what they think is gonna make them successful, and, the, what, what attracts them to a particular project is that you've, you've shown a project to be of interest to a wide and deep section of the crowdfunders, err, and that's when you get a lot of traction and interest.

26.01 Umm, but if your project isn't, is to esoteric, then, you know, you're gonna have a very narrow and thin depth of investors because they're the ones who are, who are of the same mind as you. So the question is how, how wide do you spread your, your brain trust as it were.

26.28 So going onto two ten, and err, corporate support, there are a lot of companies who have, umm, mergers and acquisitions groups and spare change down the back of the sofa that they go and buy, umm, people with, I mean Apple and Google are classic examples of that obviously, but then they've got billions, but even small companies like when I was working at **TREE** [corporate identity changed] we'd have thirty people in every month, err, on a Friday, just bang, bang, bang, bang and in, they got fifteen minutes to pitch and we would decide whether, whether, we would fund them or not. And the, the decision wasn't based on how much money have we got, because we could always find more, the decision was based on is something that will improve the business, is it something we want to keep away from the competitors, OK?

27.30 And those were the decision criteria. Err, how much it cost came at the end of the day when we had the people that we'd decided to keep as it were come in and talk a bit more about their pitches and so on. And, umm, we'd decide whether we were going to throw money at the problem or not.

27.51 C: Go further with it…

27.52 Yea, but it, they, almost at the end of day when we had sort of four or five out of thirty, umm, they would definitely get some, something, the question was how much and what, do we, you know, what do we, do we give them money to continue their development thinking it's gonna be good, or do we just buy them and shut them down because their a competitive threat.

28.18 And so there's a, that's the vicious part of the day, right?

28.21 C: Wow! Yea, so do you think in some ways crowdfunding has replaced that, that ability, because now, instead of going to **TREE**, we're go to Crowdcube or we'll go to Kickstarter.

28.32 Yea, well if, so if you're a company, if your company is a threat to a large organisation, umm, going asking them for money is almost suicidal because they might buy you and there you go, that's it. Err, I mean there are, Microsoft was buying tons of Apple developers at one point to shut them down and they'd give them, you know, couple of million each just to close them.

29.00 And when you've got a lot of money that becomes a really powerful tool to, err, strangle hold the world, you know, which is why an awful lot of good ideas never make it to market otherwise I think we'd swimming solar power and flying cars.

29.20 Erm, so corporate support is probably a much bigger topic than you've, I think you only mention it once, err, so I, if I was going to expand any part of this I'd probably have an expansion of this part because if your, let's say, err, you've got a product that enhances that a big corporation does, then you've got a very good chance of getting bought and continue your idea on, if it's a threat to them then it's a problem, but if you can say, yea, err, I can, you know, half your expenses on this, or I can, umm, you know, improve your work flow in this part of the company or whatever it is, I mean, if, if it saves the company money and you can identify how much it is, and it's like fifty million or something they're gonna say oh yea, we'll spend two million on him and bring him on board and have him set-up his own team to do it in-house, you know.

30.25 So, umm, some corporations are benevolent like that and some of them aren't…

30.32 C: More ruthless, so it's almost worth, from what you've said, it's almost worth mapping this stuff out in some form or way, with them, so going, going deeper with this, two point ten and dropping those earlier, sort of two point one and two point two…

30.47 Yea, umm, 'cos I think this part, two ten, has a lot more strength in it than say one, two or three.

30.55 C: So you would say focus more on this sort of, weight it more towards this area than you are toward the beginning…

31.00 Yea, I think so…

31.01 C: OK, that makes a lot of sense…yea, a lot of sense.

31.04 Because there are corporations that get involved in crowdfunding, umm, you know, someone from their M and A group, mergers and acquisitions group will go along to crowdfunding events and someone will just lurk in the shadows.

[Discussion on corporate crowdfunding]

32.33 Quite a few corporations I've been in like **TREE** and, well not so much **TREE**, **GISTDISK** [corporate identity changed] used do it, they'd have an open day for R and D, er, Apple used to have an R and D for the staff only, so there'd only be badged employees who could go it. Er, and there'd be, I dunno, fifty different research projects going on and the, the management of the research group would generally watch to see where people gravitated.

33.06 C: Right, right, so physical sort of movement.

33.07 Yea, and it was usually held in a building called Valley Green Six which has got a big open atrium and they'd have everybody in it and then they'd let the crowd in and they'd just

watch where people, you know, mill round, and then people gravitate towards one particular project and they'd go, that one's worth funding.

33.24 Umm, I remember, I distinctly remember doing that 'cos I used to go quite often, umm, a three dimensional mouse, which was manifested as a ball on a tether and the ball had an accelerometer in it and as you pushed it away from you on a 2d screen the curser got smaller and as you moved the mouse left and right it sort of swung and hung from the top of the pointer, so if you imagine the point of the arrow, of the mouse, sort of hung and as it, as it came toward you it had an animation of getting larger and an animation of getting smaller and going to the left and going to the right. But it always hung from that point so you always knew where you were in space. And I thought that was a great way of having a three dimensional mouse, never came to market, err, I wonder why?

34.21 I still to this day think that would have been great for 3d printing, because with, with one, one hand you could, erm, manipulate the space that you're seeing on the screen and with today's snap-to technologies you could just adjust a line somewhere to snap it to a place and build your three dimensional space like that. I mean maybe the 3d tools ae better than I'm thinking, but umm, that was one of the things that, umm…1989…so a long way ago. Maybe the tools are better than I thought.

35.04 So, err, corporate support, umm, right.

35.09 C: So then infrastructure.

35.17 Planning the delivery, right, erm, yea, so some companies will rely on an external method of delivery for a product, it depends what the product is really, I mean if it's a web site it's pretty much down to two channels which is the App store and Google Play but if it's anything other than that, or involves hardware, then yes you wanna figure out where you're gonna sell it 'n distribute it.

35.47 C: So would you say differentiate there on this question maybe a little bit more, just make it clear if it's a product or if its digitised, bits versus atoms…

35.56 Yea, I mean if, if it's a product that goes in an existing delivery channel, umm, like an app, then the rest of these questions are kind of irrelevant, but if it's a product that has a complex delivery channel where, where there might be multiple tiers of, of [inaudible] just in time manufacturing chain coming into it, umm, it, it depends on the product a lot.

36.28 C: On that, do you think we've too generic then, because we've tried to cover, I mean one thing about the book itself was that we weren't focusing on any one particular model of crowdfunding so it wasn't particularly focused for equity, it wasn't particularly for reward, we were trying to capture as much of the success factors that we see in both and then bring those in, but have we, have I gone too far? Do you think it's too generic and not…

36.54 Umm, I just, I'm wondering if I misunderstood channel here, err, 'cos you, when you're talking about planning the delivery and external channels are you talking about how you get the product to market or are you talking about…

37.14 C: Communication channels, so this is, yea…

37.18 Ah, right…

C: So it's, its, whatever the channels maybe whether its email to blog to Facebook or whatever.

37.31 Ahh, I think I misunderstood the question there because being a product guy I tend to focus on how you get it out the door.

37.38 C: Well that in itself is telling us something, isn't it? That, yea, that maybe there's a bit of clarity needed there then.

37.49 I think, I think maybe then, three point five probably needs to be three point one, because that it sets it up for not getting off on the wrong foot.

38.08 C: Yea, that makes sense, that makes a lot of sense, because that would also involve your models wouldn't it, if you've identified your crowdfunding platform you know which model it feeds into the whole…

38.21 So maybe the order of that might need to change a little bit.

C: Yea, OK, that makes a lot of sense.

38.31 Now, as for three point seven, contingencies for failing, umm, failing is something nobody wants to admit to but it happens an awful lot, umm, typically a large crowdfunding thing like Seedrs or, umm, Kickstarter and so on they don't, they don't actually care about failing because their already big enough so their probably too big to fail, but, umm, there's nothing to say it couldn't go wrong, umm, or you don't reach your targets and that's the first one, umm, and what happens next after that, you know, one you don't funded and B no one loses any money. Yea, a lot of what, you know, what happens if you should plan for success, but exp…, you know, expect success but plan for disaster.

39.32 C: So again, would you rephrase that, so the question three point seven are contingencies in place for infrastructure fails, I mean it's quite specific, I would say in that it's infrastructure that we're looking at rather than…

39.46 Yea, sorry your talking about the crowdfunding mechanism failing?

39.49 Yea. Not reaching your targets or…

39.53 Yea, umm, most crowdfunding organisations now, their, their failure would be their web site goes down, and, umm, and as in most of these cases, umm, the web site probably gets delivered every two weeks or every month, er, so their gonna have a team of developers building the next set of, you know, feature requirements for their site in and that's going to be an ongoing process, so if one of those breaks it means their testing is bad, erm, or their

management of their own site is bad or, that's something that you probably shouldn't, you need to be aware of, yes, but you really shouldn't be planning for that to be a disaster because that's someone else's disaster.

[Example of complication provided]

41.40 Yea, I mean in the, in the toy drone industry there are, it's littered with the dead carcasses Lilly, and, and things which had great promise, had great, umm, video, umm, because you know, you throw it up in the air and it follows you around and all this kind of fancy stuff and then nothing happened. And then somebody bought the name, err, from whoever it was that Lilly was and said oh we're, we're going to resurrect it and nobody funded them. Because they went, uh, I'm not funding that again.

42.16 And the bad thing about that was the guy thought if he bought the name he would attract a lot of people, [noise] ahhh, thanks for playing.

42.35 In the toy, electronic toy world on Kickstarter products that there starter failed. I don't think Kickstarter keeps a list of its failures, I mean why would you advertise it?

42.45 C: They claim, they used to claim anyway, I'm not sure I haven't been on their site for a few months to look around for that, but they used to claim that every, every campaign was listed on there, even the fails, but they were lying because we used as case studies on the first book actually, well one we used sorry, as a case study in the first book, but going back to those two campaigns, there was no trace of them, if you had the address you could go straight to the pages but there was no listing there of them at all.

43.10 Yea, also the quality of the campaigns was dubious in the early days, somebody crowdfunded a kidney, they would sell their kidney to the highest bidder, they'd tried it on eBay and eBay cut, immediately clamped down saying no organ sales, err, so he tried a Kickstarter campaign and got accepted because they weren't monitoring it at the time. It's obviously been taken down once they discovered it of course. I think he reached forty five thousand dollars for a kidney before it, before Kickstarter noticed.

43.55 Yea, so I mean if your, depending on what your product is, if your product is selling kidneys, umm, you know there's a chance for failing just because of what you're trying to do. As much as anything else, so make sure the rules of engagement with them are properly well understood.

[Discussion on rewards – move to section 4]

46.19 So here we're talking about the, the regulations that govern a crowdfunding campaign.

[Discussion on platform compliance + SEIS]

47.04 Yea well rules change like the SEIS just changed earlier this year so you've gotta provide to HMRC, you've got to provide the name and address of either a fund manager or someone that's interested in funding you, umm, whether it's a Kickstarter or not, I mean, but before they

will set you up for SEIS, so for a lot of start-ups, umm, they'll ask their dad if they'll give them some money, er, and then it keeps the, at least it keeps their, uh, alive, in terms of yes, HMRC will continue to look at your SEIS tax, umm, benefits and so on, but if they change the compliance, you know, how do you know, how do you get, you know, and not everybody's paying attention to that every day.

47.53 Umm, if it's regulatory compliance for something like the FAA you know that changes daily, umm, for you know, drones or whatever, err, and there's a lot of new products that may not have any regulation but it could have.

49.26 Well, as soon as you go out of the country, or, especially in Europe, if, if Brexit happens, or when Brexit happens there gonna be, umm, a whole mess of regulatory issues, because we may or may not follow Europe and, you know, if it's a drug or it's, umm, umm, something to do with healthcare, I mean the, the whole European [inaudible] association things is going t move out of London to somewhere else, to Rotterdam or somewhere, so what happens then, you know, Britain's gonna duplicate that? What a mess, err, and then their gonna, well we don't want Europe's rules so you've got one rule for Europe and one rule for the UK, I mean that's an unbelievable nightmare for any developer, err, or any start-up actually, you know, because you've suddenly got twice the amount of work to do just to come compliant. Umm, its, you know, if it's in the financial world I don't know, maybe the city of London will be very nice towards financial start-ups, maybe it won't.

50.37 Right so, risks, yea, four three and four two, umm, yea expect success but plan for disaster, again. There's also, I mean in, down in amongst there's things like disaster, I mean just backing-up your software is something simple and if you don't do that then what happens if [fingers snap], and if you scale that up to every part of your company, what happens if one of your team gets pregnant, what happens if one of your team gets run over by a truck, what happens if, you know, any part of the, umm, pie gets hurt in any way, umm, let's say that you discover that someone else has already developed intellectual property before you and it was in 1854 and, in America, and it's only just shown up now, and it was a global patent requirement and you're out of business.

51.51 Umm, so there's, there are regulatory risks, I think, attached to just about every part of the thing, you know what I mean? God forbid, you know, you must have different religions in your company, or something like that, I mean diversity of religion, and who can tell you know, umm, somebody might decide to have that.

[Discussion about HR]

53.14 Right, where are we at? C: Four nine four ten.

53.20 Actually four sevens, umm, a communications style guide, absolutely important, umm, every time a company changes its damn brand and it's marketing message, err, I get kind of, well not upset but I mean it just says, says to me 'oh they fired the last marketing manager', the new one comes in, eats his cubs and starts again and so that's why you get rebranding every five minutes in large corporations and, it just does my head in, it really does, err, so when you're looking for a company whose branding was like all orange, like EasyJet for example, their all orange, right? If they change that to blue, everybody would go, what the hell, you

know, umm, and then 'cos they recognise that brand through that colour, so what, brand recognition is a communication style, above and beyond everything else, and if you look at, umm, the Shell logo for example, the Shell Oil logo has changed all, with their marketing their marketing director, pretty much every damn time they change the company, and, err, yes it looks more modern and then it's a flat design then it's a sort of skewer orphic design and then it's gonna be rounded edges its gonna have a gleam on it this time, you know, it depends on the trend of, of the designer, and that, while, while that is fine, umm, its subtle change, small subtle changes are good but biggish changes are not, and that's, that's like, I don't know, how longs a piece of string? Is the difference between those two. But umm, yea, a style guide, important, or as we used to call them, the logo police.

55.16 C: 'Cos Apples are quite tight on that...

55.18 No shit they are. Their style guides about an inch thick.

55.23 C: Really, really, in fact you might have said something about that actually, previously, in a conversation but yea...

55.29 Well, the, some people choose to ignore it, so when, umm, I was with Apple in the Middle East we did a mac world Middle East in Dubai, right, and the local distributor there did a lot of the marketing artwork for it, and his logo, for the show was a sort of glass, purple glass apple in three dimensions, this is at the time when we had the flat stripes, right, so he did a purple logo with a silver bite out of it, all done with sort of highlights and things, and he was really proud of it, and when the Apple, huh, err, logo police saw it they almost had an apoplectic fit, and it was, it was the day before, so you couldn't change it, and they, the reason they didn't want to tell us about it was because they knew we were going to have a fit about it. You know, the show went on but somewhere on the web I'm sure you can find a picture of the, you know those minarets that are in, umm, er, oh no was it Dubai? Umm, the invasion of Kuwait, sorry, err, there were three minarets that were very popular and one of the minerate tops had been turned into this purple apple with a silver bite out of it..ahhhh!

[Researcher brings focus back to crowdfunding]

57.44 And the smaller the start-up, the worse that problem is, because the, if, if you've got like one guy or two guy on their own, umm, the last thing their gonna think about is how they look to the outside world, and what they'll do is they'll, they'll wait until the night before and try and fudge up a little piece of design work to try and, oh, we need a logo we need a style let's do it in five minutes, and your set, because as soon as you release that to five hundred people then, their, their think about your colour being orange and grey or whatever it is, umm, and then your kind of stuck with it, and then you turn around and you hire a designer and the designer throws their hands-up in horror and goes what were you thinking at five o'clock in the morning with two beers inside you. Umm, and I'll be honest that's happened at **TOGETHER** [corporate identity changed] so, yea, we took, we hired a designer and she said, ah I think we should do this, and it looks so much better than the crap we had before.

[Discussion on lack of funding for early stage branding]

59.26 Yea, but it does bear consideration a lot more than you think, umm, which is, which is why that sort of, wow, that's actually missing on the plot on the marketing, it should be under marketing I think, on my, on my particular plot. Umm, your mark on marketing communications should be in, should have a style guide of sorts in it, not only for your product your logo and your company but how you talk to the press, how you talk to anyone else in your funding group and so on.

58.57 C: That's interesting because that comes back, that question you had on two point, there was about the impression, the language you would use, the one…

1.00.06 Yea.

[Clarity to question provided]

1.00.49 Umm, I mean there are some entities, like football teams that change their colours and their strip every year, err, which annoys the fans but the reason they do it is to make more money selling more [inaudible].

1.01.05 Umm, yea, damned if you do, damned if you don't. Err.

[Discussion on value of a style guide]

1.01.28 And about that, umm, sort of sports analogy if you do change your companies, err, teams outlook every year, you run the risk of changing it and them not liking it, yea, and then suddenly you haven't got any fans anymore.

1.01.51 C: Because it's pink or whatever…OK, are we happy to move on?

1.02.02 Uhh, yea, moral issues. The world doesn't have any morals anymore, it's, it's clear from politics these days [laughter].

1.02.14 C: Quite cynical, quite sad actually…

1.02.16 Yea, depending on what you're doing, yes you should always consider moral issues and, you know, if you are misguided on them, find someone who thinks you're morally stable or morally unstable and have a long discussion with them. And if you're harvesting kidneys for resale you should be, you should be looking at yourself really.

1.02.37 So it depends on the product, umm, I mean there's, just locally we've got umm, #NAMED LOCAL ENTREPRENEUR#, and his bio, bio-chip set, and I wanted to, I thought yea, that would be great I'll, I'll volunteer for that, umm, I chatted with my other half and she said 'I don't you want you to do that', err, OK, on what grounds? Ah she said, it's not moral, so she thought it was immoral to do, to become part machine, which I still struggle with, but there we go.

1.03.22 C: Yea, I would, but I guess that's, view isn't it. Everybody's got that view…

1.03.27 And it's closely tied with religion and that's always a patchy difficult subject, you know. Yea, a thorny one.

1.03.39 C: Yea, politics, sex and religion, yea, steer clear.

1.03.43 Yea, don't work with children, animals and Microsoft products…

1.03.51 C: Four ten, we've kind of covered already, haven't we?

1.03.53 Yea. With regulatory thing.

1.03.54 C: Yea, exactly, so if you're happy to move on to five…which is strategy.

[Long pause]

1.04.16 Yea, so, five one really, umm, is almost like the corporate vision, he said, using the same word he didn't mean to use, err, yea, this is who I am and what I'm standing for. Almost. Umm, and if your thirty second elevator pitch is what this is, so if, if you can say, with authority, I'm going to change the truck delivery business, overnight and I'm going to do it by this, this and this [soft stamp on table], job done.

1.05.06 Umm, I think it's, I think it is actually good to have several looks at this, so although these first few questions are very, very much the same, the first two sorry, five one and five two, umm, can we articulate what's special about our vision, one is the vision and two is what's really special about it, so this is the secret sauce part, umm…

[Discussion on the need for IP protection and transparency]

1.06.33 Yea, the creative industries it way much harder. Umm…

1.06.40 C: And it's not, I don't think people often gloss that as a lack of understanding of the creators or artists or, and I don't think it is, I think they get it, it's just how do they do it, how do they protect themselves, you know, it's not, it's not clear…

1.06.56 In the, yea, in the algorithmic world if your building an app and you're solving a problem, umm, it's much easier to say we've defined this problem and we've got a solution for it. I'm not gonna tell you what the solution is, but we've got a solution.

1.07.18 And once we're crowdfunded we're be able to develop that into the final solution, sorry not the final solution, but the err…

1.07.24 C: Yea, I get it, it's the yea, yea…

1.07.27 The delivery of this solution.

1.07.34 Err, right, so have you looked at each platform, I would assume that, umm, anybody going to do this would look at each crowdfunding platform and, umm, there marketing and advertising should be what you're looking at here, and if, if you're not looking at all of that then you shouldn't be doing it. I think.

1.08.04 Yea now the more you pitch something, the better you get at it, err, yea, umm…

1.08.15 So that's in relation to five four.

1.08.22 How rare is the public's perception of our vision, umm, yea, uhh, there are advertising styles on the net right now which are, umm, mostly to do with selling on advertising, on web sites like umm, 'only five left, it's been selling like wildfire in the Outer Hebrides', you know, err, but the Outer Hebrides is in a five point font, you know, umm, and it works, it must work, 'cos otherwise, you know, why would I have a whole bunch of, umm, ladies beauty products in my that are pretty much useless? That's not a slight on #NAMED PARTNER#, it's just she's really vulnerable to being, umm, this, umm, this hair product has been the number one in Germany, like how can you tell? Have you looked? Have you tried? Have you, you know, it's the number one product in a green bottle. So you, yea, be very careful how that's, umm, 'cos advertising is just a vicious sport. Umm, and finding a way to be just as bad at it as everybody else is either a moral problem or if you're naturally good at advertising you'll be successful anyway, umm, yea, I'm gonna pass on…

[Researcher agrees and moves to 5.7 / 5.8]

1.11.00 Yea, that's sort of the quality of your message getting across.

1.11.04 Yes, it is, which again sort of links in with that impression management…

1.11.12 Yea, being succinct and clear, yea, that takes a lot of honing.

1.11.18 C: It does doesn't it, sweat 'n tears. Again with the promises on five nine, and then five ten…

1.11.35 I think most people who are going to invest in a crowdfunding campaign, err, are going to take the word promises with a pinch of salt. Because it's not a promise, it's, it's a guestimate at best. Umm, having…

1.11.15 C: Do you think we should reword this then? Are there…

1.11.59 The word promises, I would think a legal person would take that and redact it.

1.12.07 C: Right, OK, so rewards maybe, are there, the offers, we are making…

1.12.14 Yep.

1.12.15 C: Clearly stated in our pitch. Yea, I get that actually.

1.12.26 C: So then we're moving into ties.

1.12.35 Yea, uhh, in social media ties are not really something I'm good at because that's more of an algorithmic thing and LinkedIn does it one way, Facebook does it another, Twitter does it another and all these different companies use various different types of algorithm to figure out what your contact book looks like and what your LinkedIn contacts look like and your media profile looks like and then makes some sort of meta-data sense out of it. And um, to be honest I think it's, umm, a, a young sport right now, umm, not fully defined and not really ratified and probably immoral. Umm, because, you know, you might want to campaign in this country and your contacts are all in another country and you don't want them to, you know, there's not a lot of filtering in there.

1.13.47 See if I was to run a campaign and say, yea sure, every, let me tell everybody in my social networks if I was trying to run it in England it wouldn't work very well 'cos most of my friends are in California, err, or in, you know, or not in the UK, I mean, you see every persons gonna be different, now if you've lived in the UK your entire life, most of your network is going to be here, and you wanna tell people outside, what's the filtering like on, you know, geographical, umm, language ability, err, religious moral, yea, whatever grounds, you know, what's the, what are the grounds that you need to filter out from your friends as to how to target the right ones and this, no, you have no control over that.

1.14.35 C: It's down to the platform itself?

1.14.36 It's down to the platform, yea, and some engineers that figured it out. That you have no control over.

1.14.44 C: That's scary actually.

1.14.44 It is, yea, especially when it comes to contacts, because there's no sort of hard and fast rule about it, there's not an awful lot filtering going on there either. I mean let's say you wanted to do a crowdfunding campaign for a product that was only useful in warm countries, then all my Canadian friends would be pissed at me. [Laughter]

1.15.09 What about the snow, A?

1.15.12 'cos I think the problem, the problem with auditing ties is that there's no real clean way to do it. Your, you're reliant on somebody else making a success of it.

1.15.22 C: Yea, yea, that makes a lot of sense, so maybe some of this a bit of an adjustment, or maybe seeing from that perspective, that actually…

1.15.36 Well I think that maybe six two here, we've got 'do you have a strategy for maximising support on social media' would be, have you got the possibility of using a tool to do it yourself, so you can be in charge of your own, umm, filter, I mean most of these sites have got fairly

open API's to, to talk to it, err, the question is how do you do it and what results are you gonna get, you know. And is it worth the effort?

[Anecdotal story of big data and what to do with it]

1.16.35 We've got tons of data but we dunno what it means.

1.16.36 What does it we mean we've got to do, you know, what do we do next?

1.16.43 Yea, we're in an information overload, first, first gear right now, so, ahhh, God knows what's going to be like once really big data starts to make an impact.

1.17.00 Uhh, OK, I'm to six three. A template message to encourage support. This is something you get from the social media site, really, umm, whether it's a post or a, whatever, the templates gonna be what they tell you rather than what, you…

1.17.23 C: Yes, it is isn't it. Yea, that's kind a, good point actually, so that's kind of redundant then.

1.17.30 A template, template or a template message?

1.17.33 C: I think I was thinking of a template message…

1.17.35 Yea, OK, that's different then, sorry, umm… [Pointing to page]

1.17.38 C: Yea, I just read that. I've, yea, it's great isn't it? Can't recall my own work.

1.17.44 This will be the same, a, you know, a succinct thing to say, uhh, you really need to see this and fund it, or, you know, you're cool enough…

1.17.57 C: Or something along those lines.

1.17.58 Yea. Six four do; 'we know what the average value of a like or retweet is likely to be?', umm, ahh, one retweet could you get you all the money in the world, couldn't it?

1.18.12 C: It's possible.

1.18.15 Yep, it's a lottery, umm, just look at, what, what did that, err, actress do to Snap? They, she, wiped three billion of their, their stock value [laughter]. Yea? With one tweet, you know, ahh, I'm gonna go do it, I think she was on Snap Chat and said I'm gonna go to Instagram now, BOOM, yea, so if you do get retweeted by someone rich and famous make sure you know what you're doing, so I think that's a lottery, umm, and it's, if you can find the right, like. umm, for example there's a company called Velapp and the guy who runs it, umm, really nice guy, and he managed to meet Steve Wozniak in a car park one time, and show him, just elevator pitched him his, umm, on the fly editing software and Wozniak was just blown out of the water by it and retweeted it and suddenly he was off to the races.

1.19.25 C: One tweet?

1.19.26 One tweet.

1.19.32 Mind you he's got a, a good ed, editing, video editing on the fly kind of app, so that actually is a good product, umm, probably one of the better ones I've seen in recent years, ehh, and it…

1.19.47 C: Sorry, it's name was?

1.19.48 Velapp, v-e-l-a-p-p.

1.19.54 Umm, err, so you take a video for example, and as you, you, as you taking the video you sort of use a slider on the screen for how important that piece of video is, OK, so you go panning around, you go unimportant, unimportant, that bits important, that's not important, that bits important, that bits not important, and then you say, OK, edit it with this much importance and slide the slider up and it chunks it all together. It's brilliant.

1.20.31 So for example if you, if, let's say you were taking a video of kids in, umm, a skate park, right? So as you're taking the video you go, OK, umm, he's gonna jump NOW, and you slide it up and then down again and then another guy comes in and NOW, so you just, then you edit it and just get the jump, jump, jump, jump, jump, and you don't get all the run-ups and all the run outs and all that kind of thing. For doing that kind of video editing it is amazing.

1.21.03 Again he got lucky by being friended, friended by Wozniak, and of course that knocked on because people…

1.21.13 He got traction…

1.21.13 Yea.

1.21.28 Yea, feedback, yea, I think, it's all very well going outbound with social media, but listening to what's coming in doesn't happen much, yea, so, how are they gonna talk to you, back, and are you gonna watch it, listen to it and take care of it? I mean it's, this sort of feedback loop thing is in the days of social media, outbound firehose, inbound nothing.

1.22.09 Ahh, six eight, 'how many people in our network will actually help this campaign?', umm, one, no idea, because, it's as long as a piece of string, you know, it could be, umm, someone, somebody casually meeting someone in a pub it could be, umm, two people talking change the subject to a particular subject and says, ooh, I just saw a crowdfunding thing about that, and, and so, your actually at mercy of the human brain making connections as opposed to anybody else making connections. Umm, the brain works in mysterious ways, uhh, and we're

trying to make social media act like it by saying OK, there's, here's a lot of connections in social media are any of them look like the brain?

1.23.16 OK, umm, which is effectively six nine as well.

1.23.21 C: Yes, and six ten we're back to impression management as well. Which kind of gives us a bit of a circular feel to it I suppose. That's never even occurred to me.

1.23.39 OK, seven one, now, umm, if you're going with a bunch of capitalists they say, they do say the good ones will not only offer you money but offer you skills, the people, contacts, umm, ways into the business that you're trying to, umm, impress, umm, and that, so it is very much a two way street, err, unlike, you know, Dragons Den where they just throw money at the problem, umm, the, in the real world, venture capitalists, if they like what you're doing and have an interest in what you're doing they will find other likeminded individuals that they've met in their lives, umm, because VCs generally tend to be twice the age of the person applying they've got twice the amount of connectivity and, and experience, so, err, yes, the crowd, the skills in the crowdfunding group, it would be great if you could ask them, say 'thanks for crowdfunding us', or, you know, 'if you're interested in crowdfunding us we are also looking for a behavioural scientist, does anyone know one?' Whatever it is, umm, so does anyone know one?

1.24.58 And maybe that will engage your, err, thing, because, for example, you might want to, umm, I've tried this, and I think it works, which is when you say, 'yea, our product is XYZ and in the future we've got a problem that we know that we can solve, and we know how to solve it, by the way do you know any behavioural psychologists?' And they go, umm, how, is that going to solve that problem?

1.25.28 And then, then there's a curiosity factor which might be interest to people…

1.25.33 C: A trigger…

1.25.34 It might be a trigger, err, you might have, we're look, we're looking for a behavioural psychologist and a location's expert, and people will go, how do you put those two things together, their obviously doing, they've about this problem and they've found a solution, err, so that might solve the secret sauce problem.

1.25.54 C: It's depth isn't it…but as you say…

1.25.57 We're thinking about the future problems.

1.26.09 And even just, erm, you know, let's say you're missing a particular developer in your team, umm, you know, we need a skills set and nobody's, nobody in your teams got that particular set of skills then you can, I think it would be quite a great idea to say to the crowd, er, through whatever channel you've got, erm, we are looking for something…

1.26.28 C: Yea, yea, we need more than just the money we need this help…

1.26.30 Yea.

1.26.36 C: Seven ten, I'm guessing we've kind of covered, have we considered…

1.26.38 Feedback, yea listening. How do you measure that though, I don't, I don't know.

[Discussion on setting which metrics to measure]

1.27.06 In seven three, monitoring social media, I mean, there, there are, there are definitely tools that the social media giants have that will give you some semblance of feedback and I'm not an expert in that at all, all I know is that there is that mechanism for that…stats and graphs are probably gonna be helpful.

1.27.33 And because of the nature of social media being so, sort of amorphous, you know, you might graphs that are widely different, err, and that will either help or hinder you, I mean unless you've got somebody who knows how to interpret the state, those stats.

1.27.54 C: It's not gonna mean anything, is it? It's random data…

1.27.59 And it's a new, eh, it's a new world and I'm sure there's going to be some people looking to the experts in that.

1.28.09 'Campaign responsibilities been allocated yet?', don't give your lead engineer a job in social media.

{Discussion on setting clear responsibilities in your team]

1.28.32 Err, campaign updates, I think people would want to know regularly, umm, about how you're getting on, especially if you've been funded then, you know…

1.28.44 C: Right, yea, post-campaign.

1.28.47 Then it should be, err, if, we've got funded for those of you who would like to keep a track of us, how would you like us to do it, otherwise we'll send out an email to you all, and presumably that will work.

1.29.04 Erm, I mean sites like, umm, Crowdcube and er so on, Seedrs, do they have mechanisms that will help the, er, fundee, contact their, er, funders?

1.29.22 C: They do have, yes, you can, so you, they don't give you the names and addresses but you can spread it out to…you put it into your little thing and they forward it.

1.29.34 So that keeps you away from knowing all these, having to deal with all the emails and the rest of it.

[Discussion on reduction in personal contact between crowd and applicant]

1.31.01 Err, seven seven, depending on what the product is, umm, I think monthly updates from a software product are about average, umm, but I think you should make it clear in your communication with your crowdfunding group whether it's, whether you're going to give a monthly update, whether, whether anyone likes it or not or whether it's going to be an event driven like a release of software or release of something, and I think that needs to be clarified.

1.31.38 So for example with, in **TOGETHER** [corporate identity changed] our investors get a, well, people that are interested or might be interested in, umm, in investing in us, there's about fifteen, of them I suppose, we send them an email every month with just a very short two liner about how we're getting on.

1.32.00 Umm, for the people who are interested in using and testing the product, the, the early adopters and early beta guys, umm, they get an event by event update. So build number thirty three, build number thirty four and build number thirty five, you know, those, those events are sparse, over the month and then at the end of the month the investors say well we've built, we've done thirty five different builds, you know, and we've counted this good thing this bad thing, and that's it, short and precise.

1.32.36 C: Then again mapping to that demographic, matching it to what they wanna know.

1.32.47 Auditing the skills base of the team [question 7.8, page 117], yea, umm, if you're not doing that on are regular basis, umm, yea, this is all sort of part of agile if you like, err, if a team is meeting every week say, umm, and the development shifts to needing this thing, added, and no one's got the skills to deal with it then it needs to be identified as soon as possible so you can either hire someone new or change a member of staff, whatever it is, so, yea, I mean keeping your team on their toes every week as to how that's, is everybody OK with where we're going? Anybody uncomfortable with building in Python or whatever it is.

1.33.52 Umm, team member skills clearly evident in the pitch? They should be, clearly evident, err, if you don't know what your teams doing, you know, you're dead in the water, err, necessary networking skills, umm, again how longs a piece of string?

[Discussion about encouraging deeper consideration of the implications of a crowdfunding campaign]

1.35.00 Umm, make sure there's cultural interest in the campaign. I think if your product is based around the culture then, yes, otherwise I'm not sure that cultural groups are a real benefit, sorry, I'm at eight one.

1.35.21 C: OK, yes.

[Discussion on seeking tribal support]

1.35.51 Yea if you're making a green product for example.

1.35.54 Yea, exactly, a solar product or whatever but may, but that's, your hesitancy tells me a lot, that maybe that bit need a bit of clarity. Yea, and again here see groups, so we're talking groups in our campaign, so with eight two, again following on with those tribes, yea, that obviously needs a bit of clarity doesn't it.

1.36.22 I don't know, I mean, I think a lot of these things depend on what the actual product is, so you have to give us a very generic example, so, err, like on the previous one here, umm, so maybe geography and language goes together, maybe crafts and green products go together , err, maybe, err, food and obesity go together.

1.36.51 Err, for eight three, have you expressed drive and passion in the pitch, if you haven't, you need to score highly on that one.

1.37.04 Umm, connect vision with cultural icons, yea this is again going back to finding a lucky person who that you run into in your crowd campaign, umm, so yea, that's the, the we met Steve Jobs and he loved it, sorry Wozinak.

1.37.36 Umm, yea, I think having a team that is sufficiently thick skinned to realise there's a problem and not too thin skinned to be scared to do it, scarred to address it, because umm, yea, you're, you're always gonna run into the Oh my God we can't do this because of such and such, how we gonna fix it, and if every, if everyone sort of cries and runs out of the room that's not much help, but erm, managing the expectations of how are we gonna address this, anybody got any ideas? Who wants to take ownership of it? Let's take the problem and break it down, umm, OK, the problem is X,Y and Z, who wants to take X, who wants to take Y and who wants to take Z? Let's go away and come back tomorrow with some ideas, you know, that's just getting the positive mental attitude into the, the team, err, and it will show in your crowdfunding campaign, umm, by the quality of what you're doing, I think.

1.38.40 So if for example all the parts for your, umm, team like you know, that, that spider graph I showed you, if, if they, umm, marks are out toward the edge a lot, then it shows that your clearly capable of managing well. I think.

1.39.02 C: Yes, and you're probably going to capable of at least seeing through these problems to the other side.

1.39.12 Negative social media exposure, no such thing as bad press, ahh, unless you've just poisoned someone, yea, good and bad, yes you really want, this is planning for failure, right, err, and should absolutely be considered.

1.39.39 C: It's backlash isn't? Any backlash against what you're trying to achieve through the campaign.

1.39.59 Err, special knowledge gives us an advantage, this goes back to the secret sauce thing again, so, yea.

1.40.00 C: It does doesn't it. And again can we predict any backlash against the campaign, so it ties in, I'd forgotten actually how close some of these questions were.

1.40.10 Yea but this, eight eight refers to the bad press, right, so is there anything you know about yourselves that would alleviate any bad press, so, that's preparedness for disaster.

[Discussion on being cautious]

1.41.11 Yea, like releasing a product on day one of CES, only to be completely usurped on day two by your competitor, yea, not a pretty sight.

[Discussion about CES]

1.43.28 C: So it's the two last questions isn't really. Eight nine and eight ten.

1.43.33 Right, err, are we biased toward a certain industry view, umm, I think if you are that might not be a good thing err, 'cos you probably want to try and disrupt, disrupt, damn, break some of the moulds that, umm, err, are currently, find out where the pain points are and fix 'em. yea, not necessarily a bad thing, umm.

1.44.19 A community vision, yea, this, if you're going to really make an effect, an effective campaign I would think that an element of community around your product is only gonna help, umm, there are drone communities for example and, err, some of them self-police a Facebook page and some of them are very helpful and some of them are vitriolic and you can't really tell how it's gonna to go because you've got too many people, dealing with…

[Discussion on cooperative competition]

1.46.19 Well there's, umm, there's two, there's DJI Mavick Spark, something like that, uhh, which has got its own Facebook community page and there's hundreds of those people on there, and they can be quite critical of the company, there's, there's the Dobbie Drone page where the company has basically given up hope, and, and err, all the who've got one are really love the product and they're really, they're kind of 'oh don't give up on us now, it's a really cool thing', you know, and they sort of treat it like a teddy bear, err, and they really love the toys. Yes it's got bugs and problems but the people who've solved them have shared all their solving issues on the side, and, umm, it's become a very nice community that shares its pictures and it images about how, here's, here's something I took a picture of would anybody like it? Oh, yea, I saw I took you picture of that against the sunshine how did you stop it glaring and flaring in the lens and all that kind of thing, so there's a lot of, err, it's a very constructive community.

1.47.35 But some of them can be acidic, so I don't know how you go about policing them to make them one way or the other. Because there's not a lot of control levers there to do something, you can ban someone if they're gonna bad mouth you, but that just means they come back as a troll.

[Further discussion on cooperative competition within the gaming community]

1.48.34 Umm, that's, that's when you get constructive community.

Thanks and finishes.

Appendix H: Emailed CRA Questionnaire Responses

H1: Robbie - Hardware

How useful did you find the CRA?

Very. We came from a standing start and it provided a structure for the work we had to do and the workflow tasks needed as we worked through it.

Did you repeat the exercise? How many times? Why?

We reviewed and re-examined what we were doing throughout the exercise. This probably meant that each element of the CRA was re-visited up to eight times. The reality is that it operates as a touchstone for review as well as analysis about what has yet to be done. It really is comprehensive in the way it asks the relevant questions.

How difficult was CRA to use?

It's not difficult as long as you let it lead you and do not try to re-work it. Clearly, a structure of approach has been embedded into it.

How difficult was CRA to understand?

What is difficult is understanding how its structure and its elements link into the practicalities of your particular project. This is inevitable, any marketing initiative has to learn what its positioning is, how to express that and how to communicate that. What the CRA does is put those investigations into the context of a specific project, while of course its authors have generalised the task assessment for all users. In that respect, the clarity of the CRA has been maintained; although this realisation takes a while to engage with when one is initially unsure as to what one is trying to do or say. You need to have self-belief about the CRA as a tool.

Did you feel the introduction and instructions were clear?

Yes, but see above. It does inevitably take a while to interpret the approach to a particular project. But the CRA is not too prescriptive and allows scope for task management and thinking that is tailored to your own specific purposes.

As a resource for other people seeking to crowdfund their vision, do you think this is a useful tool for them? Why or why not?

Yes, because you start with no structure and the normal tools of marketing are not related to the specific needs of a crowd-funding campaign.

Having read CRA, do you feel you learnt something new about crowdfunding? Please elaborate.

Yes, the outreach element of a campaign through which one has to be able to respond to a community in a coherent way is vital. Retaining social contact and a coherent positioning is vital to avoid detractors taking over your campaign.

Were all sections relevant to your particular campaign?

Well. It covers a lot of ground and there was some relevance in all sections; but every campaign is going to have a different balance of need. I think the main thing is that the scope was right – you had to think through all the main issues.

Do you feel CRA was too long, just about right or too short?
About right and split up in the correct way.

How happy did you feel using the CRA?
It was demanding at times, but it's a support tool, and crowd funding campaigns are not easy to organise.

Did you use the spider graph?
Yes.

How easy was the spider graph to use?
It made a lot of sense once you had begun to use the rest of the tool to build up what had to get done. Early on you could only see it as a target about what you needed to learn such that the spider graph offered support for what you had been doing.

Did it help you identify weaknesses in your campaign?
About four times!
As you get on with the planning

Did you take any action specifically in response to the spider graph exercise? Please elaborate.
We expanded our infrastructure to support feedback following responses. We also looked again at our audiences and the way our positioning might appeal to them. It also forced us to re-examine our "culture" in the sense of the wording of our communications.

Did you go to the web site, and did you read any of the resources there?
No.

On reflection, which questions really stick out in your mind? Why?
I would have to say that there is nothing specific that I can mention. The reality is that we worked off task lists against the main themes and used it very much as a support tool.

Did you like the idea? Please elaborate.
I expect it may have value outside of crowd-funding – applying to the way that you integrate the marketing mix for any initiative that involves a lot of new media and a stratified communications targeting need.

What you do to improve CRA for future crowdfunders?
We were a little confused initially with the intro, but it makes sense now that we have used the full tool set. There is not a lot to do about that except clarify the overall message about what the book is for.

What did you really like about the idea generally?

There does not seem to be anything else that explores this in such detail, and also provides something that you do not just read, but that you use repeatedly to check on progress in planning and proposed execution.

How likely would you be to recommend CRA to someone looking to crowdfund their vision?

We would.

H2: Mario – Games

How useful did you find the CRA?
Extremely, as someone who was completely unknowledgeable about crowdfunding, and marketing in general, the CRA was informative in pointing me in the right directions and getting myself mentally prepared

Did you repeat the exercise? How many times? Why?
I regularly went through the book to reread section in order to better reinforce the mindset I'd need to prepare for a crowdfunding project

How difficult was CRA to use?
I found it really easy and accessible, the simple scoring method, as well as diagrams, were effective.

How difficult was CRA to understand?
it was easy to both digest and identify flaws in my crowdfunding plan

Did you feel the introduction and instructions were clear?
The point system and general introduction were clear, and easily showed me the purpose of the book, and how to best utilise it.

As a resource for other people seeking to crowdfund their vision, do you think this is a useful tool for them? Why or why not?
I think it is a really eye-opening exercise for anyone looking to run a crowdfunding project who hasn't already

Having read CRA, do you feel you learnt something new about crowdfunding? Please elaborate.
It actually stopped me from crowdfunding - reading/using this book showed me I was far behind the place I needed to be to not fail a campaign!

Were all sections relevant to your particular campaign?
I'd say all the sections were relevant, 'Question 9' is a little corny for my taste, but no harm in positive finishes - I think it's a nice end to the book

Do you feel CRA was too long, just about right or too short?
I feel it was a good length, it helped me a lot and I didn't get weighed down with its pace/structure

How happy did you feel using the CRA?
I was content with the process

Did you use the spider graph?
I took a look at it but decided for me it wasn't right for displaying the data

How easy was the spider graph to use?
N/A

Did it help you identify weaknesses in your campaign?
'It' meaning the book - very, very much so - I was amazingly underprepared

Did you take any action specifically in response to the spider graph exercise? Please elaborate.
N/A

Did you go to the website, and did you read any of the resources there?
I did around the time of research, I've looked up various sources for crowdfunding alongside the website

On reflection, which questions really stick out in your mind? Why?
Question 8.6 - Have we considered potential negative social media exposure? - interested me and stuck out, as someone who has run in local politics I've scrubbed my social media pretty clean, but hadn't thought we might need to take a look at ourselves for crowdfunding. Also, this questioned outlined to us a lack of women team members and allowed us to reflect on this and adapt

Did you like the idea? Please elaborate.
I love the idea! It's a really great way to measure preparation

What would you do to improve CRA for future crowdfunders?
perhaps more links to examples of why specific areas are important - either horror stories where someone's ignored a section or success stories which show off a section's importance

What did you really like about the idea generally?
I love the idea of helping those who don't understand how to crowdfund, it really makes the platform accessible

How likely would you be to recommend CRA to someone looking to crowdfund their vision?
100%, I talk about it regularly!