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The Relative Advantage of Collaborative Virtual Environments and Two-Dimensional Websites in Multichannel Retail

Alex Zarifis[1] and Angelika Kokkinaki[2]

[1] University of Liverpool, Merseyside, Liverpool, L69 3BX, UK
A.Zarifis@liverpool.ac.uk
[2] University of Nicosia, Makedonitisa 46, 1700 Egkomi, Nicosia, Cyprus
kokkinaki.a@unic.ac.cy

Abstract. Collaborative Virtual Environments (CVE) have been with us for some years however their potential is unclear. This research attempts to achieve a better understanding of retail in CVEs from the consumer viewpoint by comparing this channel with the competing retail channels of 'bricks and mortar', or offline, and two dimensional navigation websites (2D websites), in order to identify their respective Relative Advantages (RA). Five categories of RA between retail channels were identified and explored using focus groups and interviews. These five categories explore distinct characteristics of each channel, consumer preferences over three stages of a purchase, differences between simple and complex products and lastly the role of trust. Participants showed a preference for offline and 2D in most situations however there was evidence that enjoyment, entertainment, sociable shopping, the ability to reinvent yourself, convenience and institutional trust were RA of CVEs in comparison to one of the other two channels.

Keywords: Collaborative virtual environments, E-commerce, Multichannel retail, Trust

1 Introduction

This research compares three retail channels between themselves in order to identify their respective Relative Advantage (RA). The first channel is 'brick and mortar' retail outlet that does not involve the internet. The second channel is the two-dimensional (2D) business to consumer website that displays information and offers navigation in two dimensions (2D websites). The third channel is the three-dimensional online environment known as Collaborative Virtual Environment (CVE) [1]. The CVE used for this research is Second Life (SL) because it is widely used with over 20 million users [2] and it has all the functionalities such environments can offer. From the three channels the CVEs have not reached wide adoption and are therefore less understood in terms of their benefits from a consumer's perspective and hence their potential for retail. There are strong indications of CVEs potential for socialising and collaboration [3], and conducting exhibitions and conferences, [4]. Furthermore, their relationship and RA of each channel in relation to the others is less clear. Each channel is in competition with the others in a multichannel environment [5]. The theory of the diffusion of innovation [6] suggests that an innovation, in this case the new retail channel, must offer a RA for consumers to adopt it. For time and energy efficiencies consumers often avoid measuring things against an agreed form of measurement and compare between alternatives. This is related to the concept of satisficing, combining satisfy with suffice, as opposed to maximisation [7].

The retail channels this research is comparing could be seen as cases that are being contrasted. Choudhury and Karahanna [8] was chosen as the foundation of this research and five objectives that captured the issues accurately were identified to guide this exploratory research. The first objective to explore was to assess whether a RA of CVEs compared to the 2D navigation Internet for e-commerce was the aspects of offline retail that it includes, that do not exist in the 2D websites. The second objective therefore explores the same topic between the other pair: Could a RA of CVEs for retail over offline retail be aspects of 2D navigation websites that it includes that are not included in the offline retail environment? The third objective was to explore whether consumers vary their

intended usage of CVE across the different stages of the purchase process and whether this happens because the significance of the dimensions identified in Choudhury and Karahanna [8] vary across those stages. The fourth objective was to explore whether consumers' usage of CVE is different for simple and complex products. The consumer approaches a purchase of a simple and a complex product differently and it is therefore possible that some characteristics of CVEs are valued differently in these different processes. The fifth objective was to explore whether CVEs such as SL may have the RA of a higher degree of institutional trust compared to the 2D websites.

2 Multichannel Retail

Multichannel retail covers the activities involved in selling products and services to consumers using more than one channel [9]. This process has implications for many aspects of an organization such as legal, bookkeeping, enterprise systems, human resources, new product development, servicing and corporate marketing [10]. The most common retail channels are bricks and mortar, online 2D website, online virtual world, catalogue, call centre and television retail. The first three are explored extensively in this research. Today multichannel is considered the dominant approach to retail [11]. This can be seen in many industry sectors other than retail such as travel, banking, computer hardware, computer software and manufacturing [12]. It is important for an organization to coordinate the channels it uses [13] in order to achieve the best results, first for the customer and then for themselves.

Each channel has certain advantages and disadvantages. For a channel to survive in the highly competitive environment that exists today it must have some form of an advantage. Online retail, or B2C e-commerce, has certain advantages and disadvantage compared to other channels. The main advantage is convenience [14]. The main disadvantages are: Firstly, requiring the necessary experience to use online stores [15] and secondly the lower level of trust in comparison to bricks and mortar shops.

Research in this area suggests it is important to take a customer and not a channel centred view [16]. This research follows this assertion. Research suggests that multi- channel consumers' behaviour and channel choices are more strongly influenced by psychographics than demographics [17]. There is evidence that consumers prefer different channels for different actions [18]. Searching for information about a purchase such as price, and making a purchase have differences and different channels may be preferred for each stage [19]. Each channel is found to have different utility [19]. Additional distinctions are examining and picking up the product that is being considered for purchase [20]. This research explores all of these stages.

3 Objectives to be Explored

By analysing the existing literature and anecdotal evidence two high level categories of the relative advantage of CVEs seem to exist. The two categories are the RA of CVEs for retail that come from characteristics it draws from the 2D websites and the RA of CVEs that come from characteristics it draws from the 'bricks and mortar' environment. The first and second issues identified for further investigation that follow on from this are:

Objective 1: A relative advantage of CVEs to the 2D Internet for e-commerce, may be the aspects of offline retail that it includes that do not exist in the 2D websites.

Objective 2: A relative advantage of CVEs for retail compared to offline retail may be aspects of 2D e-commerce that it includes that are not included in the offline retail environment.

Choudhury and Karahanna [8] suggested that a consumer would adopt a new channel only if it was perceived to offer an advantage to existing channels. This argument is built on the theory of diffusion of innovation [6]. The third objective states that the 'variable' dimension of RA will vary across the 'variable' of stages of the purchasing process:

Objective 3: Consumers may vary their intended usage of CVEs across the different stages of the purchase process because the significance of the dimensions may vary across those stages.
The nature of gathering information and making a purchase for a complex product in comparison to a simple product is different. Therefore, the nature of how the technology and the other aspects of a channel are used is different. Therefore, the variables to compare are consumer usage, product complexity and purchase stages:

Objective 4: Consumers' usage of CVEs may be different for simple and complex products.
Based on the literature on trust as it has been defined and modelled by McKnight et al. [22, 23] institutional trust has been identified as the relevant aspect. This is in agreement with Choudhury and Karahanna [8]. When considering institutional trust for CVEs it is important to clarify what the institution being considered is. For the purpose of this study the institution is SL, as opposed to CVEs in general:

Objective 5: CVEs such as SL may have the RA of a higher degree of institutional trust compared to the 2D websites.

4 Research Method

The methodology chosen was qualitative research starting with focus groups and carrying on with interviews. The focus groups had limited structure to allow themes to emerge. The data collection was progressively more focused utilizing the data collected so that insight could be gained on the themes that emerged. The interviews were therefore more structured while still allowing the participants to introduce issues they considered pertinent. The strength of qualitative methods lie in capturing what quantitative research is not strong at capturing. This is often referred to as why something social happened and the meaning as opposed to the causal effect [24]. Furthermore, its proponents argue that the lower level of, or lack of, abstraction from specific contexts makes it more effective at capturing the individual's point of view, the constraints of life and thus achieves richer descriptions [24]. The weakness of this qualitative method is its inability to achieve the generalizable results that quantitative methods can. Another important limitation is that the observer is active in the world being researched and, therefore, the level of objectivity of quantitative methods is not achievable.

5 Data Collection

Before the focus groups were carried out some trial focus groups were conducted. The trial focus group schedule was developed based on the literature. This was refined at each subsequent stage. After the trial five focus groups were carried out with a total of twenty-six participants. Five or six participants were in each group and there was an even number of males and females. The participants were postgraduate students at an English university.
In depth semi-structured interviews in SL formed the second stage of the data collection. The recruitment was carried out 'in world' in order to ensure that participants had full SL membership and were active users and purchasers in SL for at least twelve months. Beyond the recruiting the interviews were also carried out in SL 'in-world' offices. This would act as an additional safeguard ensuring that the participants had the relevant experience. Their behaviour, level of skill and avatars appearance would be an indication of their experience. There were twelve participants, six female and six male, between 23 to 54 years of age and from various parts of the UK. Nine had a university education and the other three had graduated from high school.

6 Data Analysis

The transcribed data of the focus groups and interviews were entered separately into Nvivo 8 and the analysis was implemented using template analysis [21]. The template analysis method allows verification and, crucially, extension of previous research which is one of the aims of this research [25]. This method of analysis is compatible with the realist approach taken [25]. In this research it develops Choudhury and Karahanna [8] which provided the template foundation with some additions based on the broader literature review. The templates were the five objectives identified in from the literature.
For some objectives there were a number of issues within them so child nodes were created. All these nodes were created and populated within Nvivo. The level of support for each opinion was shown in the findings. The reason why an opinion was included was explained and its popularity was then indicated. This could be described as quantifying qualitative data [24].

7 Findings

The qualitative data analysis findings are presented firstly for the focus groups and then for the interviews. For the focus groups a short summary is given while the findings of the interviews are reported more extensively.

7.1 Focus Groups

There were some broad issues that could be identified. Firstly, the participants showed an interest and ability to identify the features of each channel, assess what those meant to them, and compare them to the specific issue under question. Beyond this making the data richer this is a strong indication that this thought process happens naturally when making a purchase. This strengthens the argument that this research has a valuable contribution to make. While no conclusive findings could be claimed after the focus groups the richness of meaning drawn out in relation to the five objectives explored was another indication of the value of this research. Some features that were pervasive across all issues discussed had to be noted. These were the ability to socialize in CVEs, the richer more personal interaction and the value of the shopping assistant. All these issues were further explored in the interview stage.

7.2 Interviews

The responses from the interviews were useful but varied. On a small number of issues there was consensus, such as the unsatisfactory quality of the images and on the rest there were varying, often conflicting views. These conflicting views were often based on different motivations and expectations.

7.2.1 Results for Research Objective 1

A RA of CVEs to the 2D Internet for e-commerce may be the aspects of offline retail it includes that do not exist in the 2D Internet.
The first objective that was identified from the literature was significant because it proposed a RA of CVEs in the simplest form, offering a high-level category of RAs that could include many more specific RAs. Many participants' responses were on this objective and subcategories were identified. These were primarily enjoyment, which will be discussed in more detail in the following section of the findings; social shopping, a richer and more emotive 3D environment, 'face to face' and the shopping assistant, and to a lesser extent location. For the 'social shopping' and 'richer more emotive environment', there was extensive evidence. An example of the former is: '…you can actually view the products with other people, even if they are just virtual representations…' (male, 26) and 'I was thinking it could be more sociable, you can't really go with friends around Amazon' (female, 22). As the second quote illustrates the ability to go shopping with their friends was considered an advantage. This could be especially useful when those friends do not live near them and would therefore not be able to shop together offline.

In the case of the latter, which channel was most emotive, all participants considered the real life to be first, which is understandable, and most considered CVEs such as SL to be more emotive than 2D websites. One participant stated in response to the question about which is more emotive: 'Virtual worlds but only because the 2D websites have no emotion at all' (female, 22). One other participant was more enthusiastic: 'Yes it is more interactive, I guess, you control your avatar, you walk into the shop you walk around, you can fly if you get bored. I think it is more fun' (female, 19). Those that did not consider SL to be more emotive than the 2D web pointed to the shortcomings of its current implementation: 'SL last at the moment because it is slow sometimes' (male, 28), and '…occasionally you find someone in a SL shop interested in helping you but you don't get their full attention. They usually have instant messaging going on, maybe music streaming' (male, 60). Since the reasons given were about the current implementation and not the fundamental nature of a CVE it suggests that if these issues were overcome those participants may also agree with the rest.

That last quote leads on to the third RA of CVEs compared to 2D websites for retail identified: That of 'face to face'. The most prominent of those interactions in relation to retail was interacting with a shopping assistant in a CVE. In addition to the shopping assistant there were positive comments about the ability to communicate to the person that created the product being purchased 'face to face'. The first point to clarify is that what is meant by 'face to face' here is virtual face to virtual face. More importantly it means communicating to a real person, in real time. In other words, synchronous communication, possibly by voice and some, virtual, body language as opposed to the asynchronous forms mostly used on 2D website browsing, such as email. One participant said: 'SL can offer one on one contact with the seller where you would have to telephone someone in real life when shopping online, if you needed further information, one on one.' (male, 62). The same participant went further giving a reason why the one-to-one contact felt better: 'Second Life can bring intimacy to business relationships between companies and individuals who are physically maybe thousands of miles apart. By intimacy, I don't mean anything rude! Just as we are in the same 'room', now' (male, 62). Lastly two more RAs compared to 2D websites that were less prominent but useful nevertheless were location and the nature of navigating a 3D environment and the way it influences your experience of information. Regarding the benefits of location one participant's response was very enlightening: '…unless you pay a lot of money for a shop in a high traffic area you don't make much I guess… I think there are some places where people shop as they would in Real Life…They wander and browse and hopefully buy… Maybe because all the better stuff, the stuff you pay a lot for is in the places where you pay more to rent… Maybe because Second Life is so huge that these high traffic places are successful because people want all the good stuff in one area. It's easier; all the shops with the fashionable stuff are in one place. You get seen there, I guess that maters to some people' (female, 24). That quote emphatically shows that parallels between the real world and CVEs for retail. This is not just stylistic or visual but functional. Regarding the related point of navigating a 3D environment: 'I like pretty shops, well designed architecture, well laid out. I dislike shops that have no navigation' (female, 55) and 'All depending on the shop really, most of them are set out nicely so you can see the sections nicely, men and women etc., and prices…' (male, 24). These typical quotes illustrate how the layout is both pleasurable and functional.

7.2.2 Results for Research Objective 2

A RA of CVE retail compared to offline retail may be aspects of 2D e-commerce it includes that are not included in the offline retail environment.

The second objective that was identified from the literature, like the first, proposes a RA of CVEs in retail in the simplest way, offering a high-level category of RA. It is equally significant to the first but far simpler. The nature of the technology of CVEs operating on the Internet guarantees that they will contain some of the Internet's benefits compared to offline. It is therefore not controversial or likely to be disputed in any way since it is based directly on the functionality of the technology and not its implementation by a retailer. As we have seen when the issue in question results from an implementation of a technology the users' perceptions tend to vary. The data collected is

nevertheless useful as it illustrated this point with empirical evidence. Unsurprisingly there was ample data on this objective. Three related RAs found were convenience, speed, 24–7 availability and global reach. Characteristic responses were: 'You could meet your friends… if they are in a different country' (female, 19) and 'the fact your sat at home and able to check out other places of interest without dragging family from shop to the next, so peaceful' (male, 38). Another RA in relation to offline was the ability to access additional information such as reviews and profiles: 'I could read the profile of the vendor… you can't do that in real life!' (female, 22).

7.2.3 Results for Research Objective 3

Consumers may vary their intended usage of CVEs across the different stages of the purchase process because the significance of the dimensions of RA may vary across those stages.

Since this research was qualitative, in regard to the third objective the purpose was not to conclusively identify the most popular channel for each stage. The purpose was to investigate whether people vary their usage, whether there was an outright winner and importantly the explanations the participants gave for their beliefs. That is the strength of qualitative research and why it was chosen. If people prefer different channels for each stage this would be a strong indication of the benefit of retailers utilizing a multichannel approach. The third objective was illustrated by participants primarily in response to question eight which asked about the stages in the purchasing process.

Secondly, following on from that, the question asked the participants to map the stages of their purchasing process, as they understood it, onto the three retail channels in question. There was evidence that participants had an evaluation of each channel's advantages and disadvantages and chose the one they would use for a given task accordingly. They often did not have an outright favourite for all the stages. What could be considered surprising is that no participant chose the same channel for all stages.

This was shown firstly in individual responses. For example, 'online shopping is the best as you can really research the goods you buy' (male, 60), 'for browsing the 3D could be more fun' (female, 22), and 'for the purchase stage I prefer to go to the shop because you get what you buy instantly' (female, 22). Beyond the individual comments there were some aggregate patterns for each stage. Some considered SL to be good for payment: 'The payment in SL is probably the easiest; just two clicks, no filling in your card number and so on. It is slightly quicker and easier' (female, 26). Many considered SL as the best channel for after sales service: 'For after sales service, hm. If I wanted to return something I would like to send an email or a letter. If I wanted help to solve a problem, or help to show me how to use it then I would prefer something more direct like the phone or SL.' (female, 26). This quote illustrates how the ability to communicate with a real person, in real time 'face to face', which was identified as an RA in the first issue, plays a significant role here. The related point, of being able to contact the creator of the product directly was also stated as a benefit again: '… the fact that there's no hours waiting for customer support at a call centre, the ability to contact the creator directly.' (male, 26). Contacting the creator of the product directly is of course not a standard characteristic of retail in a CVE channel but a special case. In response to the questions about the purchasing stages some participants believed it depended on the type of product. This indicates the significance of the fourth objective which will be discussed now.

7.2.4 Results for Research Objective 4

Consumers' usage of CVEs may be different for simple and complex products. Regarding the fourth issue identified from the literature, most participants considered the two-dimensional websites and offline as best for simple products: 'If I knew what I wanted, so let's say the new Dan Brown book and I just had to buy it then the 2D Internet. 'It is the most practical' (male, 28). For complex products overall most participants considered the offline world as the best. Some considered two dimensional websites better because you can get more information in a shorter space of time: '… 2D, purely because of the increased amount of data that can be viewed in a reasonable amount of

time' (male, 26). The other reason given for preferring 2D was that they preferred to absorb information in text form: 'when you are using the 2D websites at the moment all the information comes up…' (female, 19). There is of course information in two-dimensional text in Second Life but there is usually some navigation involved before it can be consumed. Some participants championed the benefits of comparison websites: 'you can use comparison websites from independent people' (female, 21).

Those that considered CVEs to be better than two dimensional, believed this primarily because of the shopping assistant once again: 'SL can offer one on one contact with the seller where you would have to telephone someone in RL when shopping online, if you needed further information' (male, 62) and 'I do not know anything about laptops, so if there was someone there…' (female, 22).

7.2.5 Results for Research Objective 5

CVEs such as SL may have the RA of a higher degree of Institutional Trust compared to the 2D websites.

There were four types of responses. The most common was to group the two dimensional and three dimensional together because the underlying technology was the same: 'I don't think it would make a difference, because if you think about it logically it is just a different interface' (female, 22). There were some that trusted two dimensional websites, the most common reason being that it was more established: 'the two dimensional because it is tried and tested everyone knows it is safe, while as this is quite new, it does not have a reputation' (female, 21), and the ability to read feedback. There were some that preferred the CVEs sighting the payment system: 'the company you buy the products off don't see your bank details, so that would be fine' (female, 19). Some highlighted how SL the 'institution' influenced 'institutional trust' positively: '…I was very unsure when I first started purchasing on SL, now unless there is a problem that has been highlighted with the grid, I generally don't have a problem with SL…' (female, 22). What the participant was referring to here was that Linden Labs informs users about retailers that are not trustworthy. This illustrates how the fact that SL is owned by Linden Labs and has the potential to cultivate greater institutional trust. That logic was the reason why this issue was identified as an area to investigate. Despite the varying opinions about how trustworthy SL was for retail there was only one specific problem mentioned and that was specific to virtual products: 'In most cases on SL, what is sold is no transfer, so you cannot be refunded for anything. You cannot exchange anything etc.' (female, 21). Despite this being a valid concern this is inevitable at the moment.

7.2.6 Emergent Issues

The emergent themes identified one additional RA of CVEs for retail, that of enjoyment or fun: 'I suppose it is a little bit like a game so it is more enjoyable than just clicking on something like Amazon and buying something, without browsing or doing anything else' (female, 22). Research suggests [26], enjoyment is a factor in online purchases. Further research, [27, 28] identified enjoyment as a possible construct for consumer behaviour in CVEs. Along similar lines to that it has been suggested [29], that 'entertainment' can be enabled in retail by CVEs and further research [30], suggests retail in CVEs may be more experience orientated as opposed to either customer or product orientated. The second research [30], did not have empirical evidence to support this and encouraged that to be done in their conclusion. The constructs put forward by Kim and Forsythe [29] and Bourlakis et al. [30] are similar to that found by this research. This research found empirical evidence to support previous findings about the role of enjoyment in this context [27, 28, 31] and beyond that found evidence that enjoyment is a RA of CVEs compared to the other channels. The model used, as put forward by Choudhury and Karahanna [8] stated that for the purpose of assessing the RA of channels for retail:

Relative Advantage (RA) = Convenience + Trust + Efficacy of Information Those with an awareness of TAM would immediately identify that:

Convenience is similar to Perceived Ease of Use (PEOU) Efficacy of Information is similar to Perceived Usefulness (PU)

And since: TAM = PEOU + PU, Choudhury and Karahanna [8] could be rewritten as: RA = TAM + Trust. Many models of TAM include 'enjoyment' as a variable, Perceived Enjoyment, (PE). This is related to PEOU: 'PE has been theorised and empirically validated as either an antecedent or a consequence of PEOU', [32]. Hence 'enjoyment' is proposed as an addition to this model in this context:

Choudhury and Karahanna [8] model for assessing the RA of channels: RA = Convenience + Efficacy of Information + Trust

Similar and logically compatible with:

RA = TAM (PEOU (… + PE) + PU) + Trust (Institutional Trust)

Therefore, a potential model based on this research for assessing the RA of channels:

RA of retail channels = Convenience + Efficacy of Information + Enjoyment + Institutional Trust

8 Conclusion

The main contribution of this research was analysing five areas of RA that should be considered when comparing these three retail channels. The first objective was that the RA of CVEs to the two-dimensional Internet for retail were aspects of the offline world that it included. These are primarily enjoyment social shopping, a richer and more emotive three-dimensional environment, 'face to face' and the shopping assistant, and to a lesser extent location and navigation. The second objective was that the advantages of CVEs compared to the offline world for retail were aspects of the two-dimensional Internet that it included. These were found to be convenience, speed, twenty-four-seven availability and global reach, and additional information such as reviews and profiles. The third objective was that consumers would vary their use of CVEs across different stages of the purchase process because the RA would vary across each stage. Some considered SL to be good for payment after sales service. The fourth objective was that consumer's usage of CVEs may vary for simple and complex products. Most participants considered 2D websites and offline as the best for simple products. For complex products overall most participants considered the offline retail as the best. Some considered 2D websites better because you get more information and you can use comparison websites. Those that considered CVEs to be better than two dimensional, once again valued the

ability to negotiate with a real person such as the shop assistant which they found especially beneficial for complex products. Lastly the fifth objective is that CVEs such as SL may have a higher degree of institutional trust compared to the 2D websites. There were four types of responses. The first and most common were to group the two dimensional and three dimensional together because the underlying technology is the same. There were some that trusted the 2D websites more than CVEs the most common reason being that it was a more established technology. A second reason for this was because they valued the ability to provide feedback that many 2D websites offer. Those that preferred the three-dimensional retail of CVEs sighting the payment system and some highlighted how SL, the 'institution' influenced institutional trust positively.

The range of preferences in the retail channels in general, in relation to the purchasing stages and product complexity and the lack of outright 'winner' with complete RA indicate the value of a multichannel approach for retail. The value of a multichannel approach has been identified [5, 16, 34], but it is investigated and proved here for three reasons. Firstly, this research illustrates that CVEs have a position alongside the other channels. Secondly this research illustrates how simple and complex products influence the consumers' choice of channel. Hence it is useful to analyse the three channels separately for simple and complex products. Therefore, we propose six dimensions

should be investigated (three channels by two types of products). Thirdly this research gives some indications about what the nature of that position should be. A secondary contribution was the extension of the Choudhury and Karahanna [8] model: Relative Advantage of a retail channel = Information Efficacy + Convenience + Institutional Trust + Enjoyment.

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