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Digital entrepreneurial marketing bricolage: shaping technology in practice

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Abstract

Purpose - Digital marketing adoption rates remain low in SMEs, with digital transformation being a concern for governments globally. This study reports on the human-technology interaction process using digital entrepreneurial marketing bricolage and a sociomateriality lens to examine more deeply organisational interaction between marketers and digital marketing tools in these firms.

Design/methodology/approach - A qualitative case study and purposive sampling approach is deployed, using seven SMEs in the same UK region. A bricolage and sociomateriality framework and template analysis are used to identify digital marketing strategies and challenges, levels of digital marketing bricolage and assessing the value for each firm.

Findings - Firms practice different levels of digital entrepreneurial marketing bricolage depending on the interactions of the marketers with digital marketing tools. Those marketers in firms who had higher levels of interaction between the human and the technological provided greater long term strategic value for the SME.

Originality/value - This is the first study to apply a sociomateriality lens to bricolage in a SME digital marketing context and allows us to view the way in which employees interact with digital marketing technology and create value. There is scarce empirical data in this area despite numerous calls in the developing field of entrepreneurship and digitalisation in small and growing firms.

Keywords Digital marketing, Digital entrepreneurial marketing, Bricolage, Sociomateriality, SMEs, Digital entrepreneurship.

Paper type Research paper

Introduction

Post pandemic, there is a 'technology expertise' imperative for SMEs wishing to remain competitive in an increasingly digitized environment. This is complicated by the plethora of digital marketing technologies available to entrepreneurial marketers to increase consumer engagement online and drive more sophisticated digitalized marketing operations. It makes new demands of entrepreneurs who are required to employ marketers able to deploy marketing technologies rapidly to engage more ably with rapidly shifting consumer markets. This calls for the entrepreneurs' greater understanding of implementation of digital entrepreneurial marketing (DEM) (Yang *et al*., 2023), and the need to develop a DEM strategy in the SME that requires both digital marketing competencies and entrepreneurial marketing competencies.

A critical point has been reached with global governments' concern to resolve the issue of digital transformation in SMEs (OECD, 2021) and specifically with SMEs' use of digital tools to enhance streamlined performance and operational readiness (U.S Small Business Administration Office of Advocacy, 2023). This report highlights that even those reporting no barriers are still failing to adopt digital tools.

This study addresses this shortfall of knowledge, by examining digital marketing activities and how strategies are designed reflective of the SMEs' resourced constrained operations. To understand how SMEs may improve on their digital marketing technology adoption, the authors examine the interactions and activities between marketer(s) and digital technologies. Recently, bricolage has proved useful in digital entrepreneurship, technology adoption and opportunity seeking studies (Bowen and Morris, 2023) and in entrepreneurship studies, but much less in technology (Senyard *et al*., 2014; Welter *et al*., 2016) and digital business models (Garud and Karnøe, 2003; Ghezzi, 2019). There are few studies using bricolage to study innovation through adapting technology means, and not at all within a DEM context.

To extrapolate 'how' DEM bricolage is practised between the marketer and their digital tools, the authors found Orlikowski's (2007) sociomateriality most applicable. Sociomateriality is recommended for studies in digital entrepreneurship (Nambisan, 2017), and also underpins the 'technology-in-practice' approach (Morgan-Thomas, 2016), which suggests that SMEs are required to adapt technology as is necessary for the firm due to their idiosyncratic nature. Both bricolage and sociomateriality can provide a conceptual framework exploring how the entrepreneurial digital marketer (individual or team) dynamics between the 'social' human and the 'digital' technological interact.

Encompassing two theoretical lenses, bricolage and sociomateriality, this study is guided by the following research question: "*How can SMEs enact bricolage and implement technology in practice to create value through digital entrepreneurial marketing?*"

This study addresses knowledge gaps in several areas. The authors contribute to the nascent literature on DEM (Hong *et al*., 2023; Yang *et al*., 2023) which lacks in-depth studies of 'how' DEM is practised within the firm. The literature focuses on specific types of digital marketing, in particular social media, at the expense of studying digital marketing more holistically (Setkute and Dibb, 2022), while the digital entrepreneurship literature generally has a broader focus on large organisations (Nambisan, 2017). Until now there has been little focus on SMEs and achieving closer connection with markets and customers through DEM actions. Finally, this is the first time that the concept of sociomateriality has been used to gain a deeper understanding of bricolage. By turning to these theories, the authors are responding to Nambisan's (2017, p.103) demand for "novel theorizing of how entrepreneurial opportunities are formed and enacted in an increasingly digital world".

From a practice perspective, the authors posit that firms failing to embed DEM practices risk market failure and will lack customer engagement. The study findings inform the profound lag in digital transformation in SMEs (OECD, 2021; Wei and Pardo, 2022). This study contributes to DEM, aligning academic research with industry practice, driven by technological advances. The availability of 'low-code' or 'no-code' applications (e.g., Glide www.glideapps.com, Airtable www.airtable.com, and Webflow https://webflow.com) and platforms (e.g., Microsoft Power Apps) resonates with the interactive nature of entrepreneurial marketing in SMEs (Jones and Rowley, 2011). These technologies enable firms to 'compose' (Brinker, 2023) a martech stack that facilitates more agile and customer intensive marketing (Chaffey and Ellis-Chadwick, 2019).

The structure of the paper is as follows: firstly, the authors review the DEM literature and explain the conceptual framework consisting of bricolage and sociomateriality. Then the methodology is presented, followed by a discussion of the findings. The authors conclude by outlining the theoretical contributions, implications for policymakers and practitioners, study limitations, and further research avenues.

Digital Entrepreneurial Marketing

Established theories focus on digital entrepreneurship (Kraus *et al*., 2019; Nambisan, 2017), SME digital marketing studies (Alford and Page, 2015, 2018; Fillis *et al*., 2003; Giotopoulos *et al*., 2017; Harrigan *et al*., 2012; Jones *et al*., 2014; Raymond *et al*., 2005; Simmons *et al*.,

2008; Wolcott *et al*., 2008), SME digitalisation (Eller *et al*., 2020), and digital transformation in entrepreneurship (Schiuma *et al*., 2022; Troise *et al*., 2022a; 2022b). In a recent special issue in this journal on new technologies and entrepreneurship (Troise *et al*., 2022a) one paper has a specific focus on marketing (Vrontis and Basile, 2022), while several studies relate to DEM. Troise *et al*. (2022b) notes that social media usage in small firms can assist new market entry by finding alternative uses for existing products, and sourcing new ideas through online communities. Vrontis and Basile (2022, p. 1233) found that social media provides cost effective access to international markets with fewer skills needed compared to other forms of international marketing. The literature does not describe processes that can enable the entrepreneurial use of digital marketing.

Hong *et al*.'s study (2023) of e-commerce companies in China extends the concept of entrepreneurial marketing orientation in the digital context. Citing frameworks from studies by Jones and Rowley (2011), Morrish and Jones (2020), and Alqahtani and Uslay's (2020) definition of entrepreneurial marketing, they propose a framework consisting of innovation orientation, customer orientation, in-depth data collection, and resource leveraging. They provide further detail as to how entrepreneurial marketing can be enabled in an online environment highlighting data-driven entrepreneurial marketing as a recurring theme.

Hong *et al*. (2023) interviewed not only the founder of the firm but also employees within the firm that have a more direct remit for digital marketing. These team-based perspectives, such as that adopted by Jones *et al*. (2013), are not typically present in studies of SME digital marketing. Given the requirement for entrepreneurs to employ digital marketers within a growth focussed firm, who typically have a hands-on involvement with digital marketing, this is a notable methodological shortcoming that needs to be addressed. The study by Corvello *et al*. (2022) of how technology impacts the work of the entrepreneur is of interest, not least because of their referencing of Orlikowski (2010). However, their study focuses solely on the entrepreneur.

Yang *et al*. (2023, p.8) provide a definition of DEM in an international context as: "the process of digital product co-creation and innovative digital opportunity creation that utilizes creative low-cost digital marketing and social media customer relationships across foreign markets". Their paper focuses on the reciprocal relationship between internationalization outcomes and the entrepreneur's social ties, with social media as being the enabler. Similar to the study by Hong *et al*. (2023), the emphasis is on factors largely external to the firm, whereas the authors of this study are interested in the detailed internal behaviours and activities that enable the firm to enact DEM.

The following section provides a conceptual framework for this study, allowing for explanatory findings to be presented and extrapolating in greater depth as to 'why' some firms are more successful at DEM than others (according to the value created). To do this, the authors examine the entrepreneurial digital marketer (individual or team) dynamics between the 'social' human interaction and the 'digital' marketing technology.

Conceptual Framework

Bricolage

Bricolage refers to "making do with the materials at hand" (Levi-Strauss, 1966; Miner *et al*., 2001, p. 314). Baker and Nelson (2005) in their study of entrepreneurial bricolage refer to Penrose's (1959) assertion that a business's resource environment is not as constraining as it might appear. Penrose argues that a business's resources are not limited to physical objects and people; rather they can be viewed as a bundle of possible services, which can be configured to take advantage of opportunities and address challenges. During their study of resource-constrained businesses, Baker and Nelson (2005, p. 330) observe that some "were able to create something from nothing by exploiting physical, social, or institutional inputs that other firms rejected or ignored". Two questions emerge from Baker and Nelson's study (2005, p. 33): How can SMEs, by practising bricolage, "wrest valuable resource combinations from what appear to be highly constrained environments"? And why are certain SMEs able to "discover and elicit different services and combinations of services from similar objective resources"? The authors proffer that there is still much to understand about bricolage activities and outcomes. While bricolage is attributed to SMEs being able to punch above their weight, it has been referred to as a "functional black box" (Senyard *et al*., 2014, p. 224) with relatively little detail on the processes that lead to value being created through bricolage.

When considering technology-related bricolage, 'materials at hand' are usually considered to be information technology hardware and software artefacts, although Ferneley and Bell (2006) also reference network bricolage and the tech savvy bricoleur as additional materials. While the SME bricolage literature emphasises the pivotal role of the owner, little attention is paid to employees adopting technology bricolage. Ferneley and Bell (2006, p. 234) discuss new enabling technologies that allow the bricoleur to make adaptations. Citing Kapor (1996), they echo the essence of bricolage viewed from a sociomateriality perspective: "What is design? It's where you stand with a foot in two worlds - the world of technology and the world of people and purposes - and you try to bring the two together". Their study finalises by noting the importance of creating an organisational culture conducive to bricolage, including

access to technology, owner-manager support, knowledge acquisition, trust and space to experiment. This confirms studies that found that SMEs require 'testing and learning' in their digital entrepreneurial marketing strategies (Alford and Jones, 2020).

Sociomateriality

A broader research agenda for digital entrepreneurship has been set out, acknowledging that sociomateriality allows researchers to recognise the inextricable connectedness of the social and material and how entrepreneurial opportunities can be created through the interactions between them (Nambisan, 2017). The constructs of sociomateriality challenge the separation of technology and firm practice (Alford and Clarke, 2009; Feldman and Orlikowski, 2011; Morgan-Thomas, 2016; Myllymäki, 2021; Orlikowski and Scott, 2016). The observation by Morgan-Thomas (2016, p. 1128) that technologies "are rarely used in the manner intended by their creators and users shape their enactment in practice, that is, digital technologies 'unfold' in practice", mirrors Orlikowski's earlier assertion that technologies are "not largely exogenous, homogeneous, predictable, and stable, performing as intended and designed across time and place" (2007, p. 1437). Sociomateriality rejects a deterministic discourse which has "largely assumed a world of technologies and organizations that are relatively stable, singular, and separable" (Orlikowski and Scott, 2008, p. 873). Rather than static objects, Orlikowski (2007, p. 1438) encourages us to consider the material in terms of "performed relations" resulting from a "recursive intertwining" of the material and social, resulting in the dynamic creation of opportunities. These arguments are prescient, given the growing proliferation of new technologies which can enable SMEs to 'shape' their martech stack in conjunction with innovative DEM processes and practice.

Bricolage and sociomateriality concepts and definitions

Table 1 presents this study's conceptual framework, comprising of definitions of bricolage and sociomateriality, together with associated processes and concepts.

TABLE 1 HERE

While there are notable overlaps between the three bricolage constructs, there are also marked differences. For example, 'making do' with the resources at hand can encapsulate a mindset that 'refuses to enact limitations.' However, the extant literature highlights test and learn, experimentation, and trial and error, as hallmarks of a 'refusal to enact limitations' which is

somewhat separate from 'making do' with resources at hand (Baker and Nelson, 2005; Wu *et al*., 2017). These aspects are particularly relevant for DEM which provides opportunities for the marketer to test and learn in ways that non-digital marketing does not. Similarly, while both 'making do' and a 'refusal to enact limitations' can underpin elements that facilitate 'combining resources to enact an idiosyncratic resource environment', this third bricolage construct involves the creation of a unique resource environment for the firm, either by design or serendipitously. As noted above, when designing the conceptual framework, the authors found that the sociomateriality constructs overlapped with bricolage concepts with their emphasis on adaptability, the malleability of technologies, repurposing of resources, innovation through combining technical and social resources, and the concept of 'unfolding' in and through practice (Di Domenico *et al*., 2010; Garud and Giuliani, 2013; Leonardi, 2011; Morgan-Thomas, 2016; Orlikowski, 2007; Senyard *et al*., 2014).

Methodology

The authors undertook research with seven SMEs in the UK (Table 2) that took place as part of a European Commission Erasmus+ funded research project, investigating digital marketing adoption and practice in SMEs operating in tourism-related sectors in the UK, Denmark, and Portugal. In choosing the cases, the authors collaborated closely with the regional destination marketing organisation (DMO), a lead partner in the project. As a membership-based organisation responsible for promoting the region and supporting tourism-related businesses, the DMO had a comprehensive database of tourism-related SMEs.

TABLE 2 HERE

UK cases were selected to provide evidence of how DEM bricolage was practised in the firm (within case analysis) and why certain firms were able to more effectively enact DEM bricolage than others (between case analysis) (Perry, 1998), in a manner which marks them out as outlier firms (van Burg *et al*., 2022). Purposive sampling procedures were followed (Shaw, 1999), using this SME selection criterion: 1) offering services which are intangible and rely on digital marketing to engage with customers and sell perishable inventory (e.g., hotel rooms, restaurant bookings, festival tickets, museum visits, events); 2) being active across digital marketing channels and platforms; 3) employing at least one person whose sole or principal role was to carry out digital marketing.

The heterogenous sample was selected based on theoretical replication (Yin, 1994), producing contrary results for reasons associated with the ability to practice bricolage and achieve a better dynamic between the social and material, through technology in practice. This would enable us to better understand the reasons why certain firms are able to more fully leverage their existing resources to achieve superior value through DEM bricolage. The size of the sample is in keeping with Eisenhardt's (1989) suggested range of between four and ten cases.

A range of data sources were drawn upon to assemble the case studies, triangulate the findings and ensure content validity (Carson *et al*., 2001): 1) in-depth, in-person, interviews (on average 90 minutes) at the firm's premises; 2) the use of 'thick descriptions' (Table 2) (Henry *et al*., 2015); 3) technology profiling tools Wappalyzer (https://www.wappalyzer.com) and BuiltWith (https://builtwith.com) were used to obtain an understanding of the firm's martech stack. This had additional advantages, namely allowing the interviewer to discuss technologies installed, aiding the specificity of the research interview, and opening more direct lines of inquiry, also revealing that some firms in the sample had installed an application but had not deployed it; 4) the interviewer observed customer engagement by each firm on their social profiles and through email marketing; 5) the interviewer and the lead author of this paper (lead investigator on the Erasmus+ project) used the two outlier firms as exemplars in the project's dissemination activities, including a seminar attended by SMEs that were part of the DMO network.

Thematic Coding and Application of the Framework

The authors chose template analysis to code and analyse the data (Figure 1).

FIGURE 1 HERE

Template analysis, "encourages the analyst to develop themes more extensively where the richest data (in relation to the research question) are found" (Brooks *et al*., 2015, p. 203). The *a priori* inclusion of concepts are justified within template analysis where it helps to find data most related to the research question, recognising that elements of deduction can be used in inductive business research (Brooks *et al*., 2015; Saunders *et al*., 2015). There were two coding phases (Figure 1): the first involved recording the instances of bricolage in the firms. Two recursive cycles of coding were undertaken, using the conceptual framework. In addition, the authors created a node for 'value creation' to identify how the SMEs articulated the value that

accrued from bricolage. Recognising that the notion of value has the potential to be ambiguous, this study uses a self-determined measure based on digital marketer perceptions and the authors' understanding of value created.

In the second coding phase, the authors created a coding structure, consisting of sociomateriality concepts (Table 1) and applied it to the bricolage dataset to understand the activities and processes taking place at the intersection between the social and material. The authors were particularly interested to examine firms that practiced DEM bricolage more ably and to understand the behaviours that occurred, applying the principles of sociomateriality to enhance this understanding.

The coding of the data over two phases included NVivo software with clerical coding, cycling recursively between the empirical data and the concepts from the framework in Table 1. By use of systematic thematic open coding and analysis through a process of abduction, using the conceptual framework and coded data evidence, the authors identified outlier firms (Van Burg *et al*., 2022).

Findings

The authors first present their bricolage analysis according to the three bricolage constructs and analyse the value that accrued (see 'supplementary summary of findings' table). This value is compared to the goals that were articulated by the digital marketers who were interviewed and checked against the level of bricolage practised. While the table indicates that all firms practised DEM bricolage, the authors are particularly interested to understand higher levels of DEM bricolage and how firms are able to configure a unique resource environment.

To assist in that understanding, and as per the conceptual framework, DEM bricolage is analysed through the lens of sociomateriality to identify and better understand the processes and principles that enable it to take place.

Levels of Digital Entrepreneurial Marketing Bricolage

Level 1: Making Do

All firms in the sample provided evidence of 'making do', with the most common activity being the ability to leverage customers and/or employees as advocates on digital platforms, extending online reach, and building an engaged consumer community. In Firms 1, 3, and 6, this was in part to overcome restrictions of a change in social media algorithms, reducing customer reach for firms.

> *Especially the last couple of years…organic reach doesn't really exist. We've got about 56,000 on Facebook, and with an organic post, you probably reach about a couple of thousand if you're lucky, unless you start putting money into it, which a lot of times is just a waste of time* (Firm 3 interview, participant A).

Participant B, Firm 3, referred to the week-to-week unpredictability of the algorithms, whereby a post performing well one week would poorly perform the following week. This captures the sense of powerlessness faced by marketers in using digital platforms. However, by engaging employees and customers as a digital marketing resource, some firms found they could redress this imbalance. This is illustrative of moving from simply 'making do' to a stance of 'refusal to enact limitations'.

The digital marketer interviewed in Firm 6, a museum, provided evidence as to how they leveraged the firm's social media following to extend 'organic' (non-paid) reach. This included building connections with influential brand advocates such as video game streamers and historians related to the military theme of the attraction.

> *'So, it's…building up those relationships,… they use some of our stuff [refers to digital content] and we use their influence. So, it's, yeah, it works well. It's a good relationship to have'.* (Firm 6 marketer)

The digital marketer in Firm 2, an event management company, also 'makes do' by digitising, editing and uploading high-quality video footage to create valuable digital marketing content. This is posted across a range of channels including the website and social media, thereby utilising a largely discarded resource for new purposes. They dedicated time creating a plan for video capturing the essence of their customer value proposition. This requires a clear understanding what the proposition is, how it is captured by video, and how it will tell the right story to the customer (all social processes).

> *I did quite a lot of market research into what we wanted from it and how we could show all the different things that we do. So, I think…we came up with the idea of the video. We have a lot of video footage anyway that previously wasn't really used to its potential'.* (Firm 2 marketer).

Firm 2 also extended an internal resource by using a team member to create a 'day in the life of an employee' company blog. The result provides digital story-telling content, the authenticity of which resonates with their online followers, leading to increased views, comments, and shares on social media. This blogging platform enables the digital marketer to assess the levels of consumer engagement with different types of content.

During the interview with Firm 1, the interviewer observed student interns from the local university which the digital marketer uses as a valuable resource, largely untapped by other firms in the area.

Level 2: Refusing to Enact Limitations

To varying degrees, all the firms in this study refused to enact limitations. Firms 2, 6, and 7, draw on resources: influencers, customers, and employees, to create digital content that can extend their organic reach and visibility on Google Search (Search Engine Optimisation), thereby reducing their dependency on social media algorithms, although still having to adhere to Google's algorithms. In Firms 4 and 5, a mix of culture and organisational challenges inhibit the ability of the digital marketers in these firms to practice DEM bricolage. In the case of Firm 5, the hotel group, there is a missed opportunity to create a digital ecosystem incorporating the individual hotel properties.

The two digital marketers at Firm 3 took a more proactive approach by adapting Pollen, a peer-to-peer brand ambassador platform, to promote their festival to a Gen Z and millennial audience. Brand ambassadors are incentivised to sell tickets on the platform, a strategy which reduces dependency on the social media platforms. In addition, Firm 3 collaborates with local businesses in the region, undertaking joint marketing and rewarding those businesses for sales made, effectively extending its digital resource base (Troise *et al*., 2022a).

Similarly, Firm 1 enacted an overt policy of extracting knowledge from the digital agencies it contracted and embedding that knowledge in house, thereby acquiring expertise and reducing the reliance in the longer term on agencies

Level 3: Combining Resources to Enact an Idiosyncratic Resource Environment

The following extract captures the agility deploying expertise in digital marketing by Firm 3 and their culture of experimentation with technologies.

> *Elementor has been really useful in the fact that you can build new pages without having to have extensive coding knowledge, so we don't need a developer in. So,*

> *we've been able to be a bit lighter on our feet when it comes to getting pages up and running or amending pages because it's just like a drag and drop thing with limited coding, so that's been quite useful.* (Firm 3 interview participant A)

The following extract demonstrates the challenges of dealing with limitations in a high-pressure environment with limited time and staff resources, while configuring digital marketing through testing and learning.

> *We're very needy. Because we're very – well, how can I say it? (Laughter) We're very demanding because we're constantly changing and evolving. Our website doesn't get launched and then stays the same with a few updates. It's constantly changing and evolving throughout the year, much to my chagrin.* (Firm 3 interview participant B)

The constant evolution of Firm 3's website is driven by an inherent focus on the user experience, particularly on mobile devices given their largely millennial target audience. Through in-house deployment of a range of marketing applications, including Google Analytics, WooCommerce, WordPress, HotJar, and Mobile Roadie, Firm 3 marketers identified several problems related to poor engagement with the website by users on their smartphones. Solving these problems by improving the navigation and content on the site, resulting in increased conversions and bookings. A similar, integrated, deployment of internal resources, including martech tools, technical knowledge, and a team dynamic, formed a fundamental part of Firm 3's customer relationship management (CRM) strategy.

> *[Names the CRM vendor], it can do anything you want but you have to pay for it to be developed, whereas Hubspot I built myself and is doing a better job than we had last year because it [the replaced off-the-shelf CRM solution] never quite worked. So, the sales team are loving that, and that gives them information about – not necessarily Eventbrite because it's more the team side of things, but it gives them information from Mailchimp and vice versa, so from HubSpot to Mailchimp.'* (Firm 3 interview participant B)

The marketer in Firm 1 was also developing a CRM strategy through a loyalty programme, to provide more online personalised communication and in-person service throughout the customer journey, before, during, and after the hotel or restaurant experience.

> *'You do the whole work in the background so that you can provide that unexpected experience for the customer that they were not necessarily looking for, expecting, that they get something out of the ordinary that shows that you really know about them, and deliver that personal experience.*' (Marketer Firm 1)

The 'work in the background' included overcoming the problem of a disparate collection of marketing technologies, each providing customer data, but with a lack of integration, preventing a joined-up, 360-degree, view of the customer journey. After *"lengthy debate within the team"* Mailchimp was chosen as the gateway to build the single customer view, primarily because Mailchimp is open to integration with other applications. This process of building an integrated view of the customer is also accompanied by leveraging the relationship with the technology vendor (the only firm in this study's sample that did so).

> *He's [head of Firm 1 loyalty program] been working with ResDiary literally on a one-to-one picking up the phone, sending them our updates, and they have now integrated that into our backend of our ResDiary, so if somebody books who is a (loyalty club) member it comes up in there, so we know that they are, and it also has their (loyalty club) number on there, so that's a new thing, that's in the last 9 months I would say, that's a cool thing.* (Firm 1 marketer).

Recognising the importance of developing digital marketing knowledge in the team, the digital marketer in Firm 1 had a policy of sharing the information and expertise that was provided by a digital marketing agency, contracted to work on specific digital marketing components, to the point where their services were no longer needed. This not only reduced costs but ensured that knowledge was embedded internally, helping to build an idiosyncratic digital marketing resource. This was the only firm in the sample to deliberately absorb this knowledge into the firm by skilling-up digital marketing employees.

Sociomateriality analysis

To better understand how the firms in this study enact DEM bricolage, the authors applied a sociomateriality template to the findings to answer the research question. While all the firms in the study were considered, as the authors were keen to understand DEM bricolage as it is practised at different levels, more focus was nevertheless placed on the reporting of DEM bricolage in Firms 1 and 3 as they have demonstrated an ability to configure a unique DEM resource environment and accrue more strategic value.

The level of social-material entanglement is most pronounced in Firms 1 and 3 which, as discussed above, exhibited the strongest disposition to enact a bespoke DEM environment, resulting in the creation of advanced CRM, a user-centred website with increased conversion, and ongoing digital knowledge creation. The interviewer witnessed this entanglement and immersion in DEM first hand when interviewing the digital marketer at Firm 1, demonstrating the social (marketing insights) and the material (logging into different applications).

> *As he shows me different dashboards and accounts on his laptops, he both mentions and it becomes obvious that their digital marketing insights, despite their wishes, are in different places online – [interviewee] furiously changes in between different tabs and files, logs onto different accounts (Google, Facebook) to show me the analytics, and opens three different excel files where the data is complied.*

As an SME with limited resources, Firm 1 must configure its digital marketing technical environment.

> *Clicking back and forth, he repeatedly emphasizes that they would love to have one dashboard, one database with all their customer data, but while such solutions exist, they cannot afford them, i.e., they are too expensive for what they as an SME would get out of it.* (Observation made during interview with Firm 1).

In Firm 3 the entanglement of marketing processes (in this case knowledge and skills acquisition) and technology is succinctly captured in this extract:

> *And go on a few crash courses on Google Analytics, 'cos if that's your strategy is pointing people to your website, you need to know what is working, and the same*

> *with all of the other platforms that we've mentioned [these include Pollen, Hubspot, and WordPress].* (Firm 3 marketer B)

Firms 1 and 3 marketers described the fast-paced nature of global markets and digital marketing change, including descriptions of employee (socio) entanglement with rapid changes in digital marketing technologies.

> *"My biggest surprise would be how quickly things can change…. You've got to constantly be knowing what's happening and what the trends are, know what's working, not just globally and who's doing well, but what's working for you… new markets will appear through new avenues, new mediums, yeah, so you've just got to be always ready. I didn't realise it would be so fast paced, but I suppose that comes with digital."* (Firm 3 marketer B).

The entanglement of the social and material, therefore, requires entrepreneurs to employ marketers with an entrepreneurial mindset and who are technically proficient, and there is a particularly clear sense in Firms 1 and 3 that constant knowledge acquisition is an imperative.

Shaping the enactment of technologies in practice is most evident in Firms 1 and 3 whose digital marketers are the most adept at configuring idiosyncratic DEM resource environments. Their practice most clearly illustrates Orlikowski's (2007, p. 1437) contention that technologies are not "exogenous, homogeneous, predictable, and stable, performing as intended and designed across time and place". Rather than technology *unfolding* in practice (Leonardi, 2011), digital marketers in Firms 1 and 3 are proactively *shaping* it in practice (Morgan-Thomas, 2016). This is most evident in Firm 1 where the digital marketers configured Mailchimp to act as a CRM system integrated with other applications to capture customer profiles and behaviour. The main reason Mailchimp was chosen was because the digital marketer knew of its integration capabilities. Having this knowledge is representative of the recursive test and learn processes outlined above, "trying out solutions, observing, and dealing with the results" (Baker and Nelson, 2005, p. 334).

Similarly, the digital marketers in Firm 3 shaped the martech stack to support the development and measurement of the website and to enact a CRM strategy. With reference to the sociomateriality construct included in Table 1 (Orlikowski, 1992, p. 421), the shaping of technology-in-practice is enabled by the technical components (e.g., integration capabilities), the organisational context in which the technology is developed (e.g., recursive processes of

test and learn, focus on the customer experience journey), and the empowerment to enact an innovative digital marketing environment (interest and support of the owner evident in Firm 3). Rather than waiting for the 'right' solution to come along, the digital marketers in Firms 1 and 3 proactively seek new opportunities and new digital tools and test them in line with their marketing goals.

Orlikowski (2007, p. 1437) refers to "the recursive intertwining of humans and technology-in-practice", informing this study's analysis of how DEM bricolage goes through a recursion process, and the value that this process creates for the firm. This study uses the example of how the digital marketers acquired knowledge about digital marketing and digital technologies, and how they applied that knowledge to implement DEM. Given the constantly evolving technology landscape, this is an important activity for any SME firm.

Firms 1 and 3 have a longer-term vision for composing their martech stack to support a strategic focus on the customer's experience journey and touch points. This ultimately enables them to create an idiosyncratic DEM resource environment, comprising a bespoke martech stack, which underlines their position as DEM bricolage outliers in this study.

In Firms 1 and 3, the process of recursive intertwining is embedded, creating an iterative process of test and learn. In both firms, an initial (social) step involves building a clear vision of the customer's journey before, during, and after the purchase/experience. In a second (material) step, the digital marketers access digital analytics provided by martech applications, offering intelligence on customer engagement at certain touch points, providing insight to the customer journey. For example, the digital marketers in Firm 3, by using several applications, identified poor levels of user engagement with the website homepage on a mobile device. While that data told them *what* was happening, they had to make marketing hypotheses, using their marketing expertise, as to *why* that was happening. They tested the hypotheses by instigating marketing actions, for example, decluttering the website homepage. These hypotheses were then tested using the data obtained via using the technology (material step).

This recursive intertwining is accompanied by maintaining "intimate familiarity with the tools" (Baker *et al*., 2003, p. 271), whereby staff updated their knowledge of digital marketing technologies. Within Firm 1 there is a clear policy of internalising the technical knowledge transferred by digital marketing agencies and to extracting technical knowledge from martech vendors. Similarly, the digital marketers in Firm 3 have a clear policy of developing technical knowledge internally. They reached the decision that learning how to configure the Hubspot platform internally to provide a CRM solution was preferable to buying a solution off the shelf.

> *"So, for [name of CRM vendor redacted], for example, we paid quite a lot of money to have somebody come in and build us a product, and it never did exactly what we wanted it to do. It just seems that we know our product so well, it's hard to convey that to somebody else without losing something in translation. So, teaching yourself to do their job is easier than teaching them what our festival does."* (Firm 3 interview participant B)

This decision to acquire and share knowledge helps the firm to maintain the proximity of marketing and technology as discussed above. A marketing technology vendor "*coming in and building a product*" (Firm 3 interview participant B) threatens that proximity. Orlikowski (1992, p. 421) provided an early warning about this, cautioning that "the greater the temporal and spatial distance between the construction of a technology and its application, the greater the likelihood that the technology will be interpreted and used with little flexibility." As our analysis of Firms 1 and 3 demonstrate, their ability to simultaneously develop, test and learn technology applications provided them with the flexibility that entrepreneurial marketing is predicated on. In this regard, there is a blurring of the lines between social and material to the extent that they become indistinguishable; for the digital marketers in Firms 1 and 3, materiality is "constitutive of everyday life" (Orlikowski, 2007, p. 1435).

With Firms 1 and 3 as exemplars in this study, it is instructive to use them as a benchmark when analysing the other firms. The authors start with Firms 2, 6 and 7 which are the next tier down from Firms 1 and 3 from the perspective of the value that they create through the enactment of DEM bricolage. This value largely derives from their engagement online with followers on social media and through innovative digital content marketing. This undoubtedly helps them to reduce their reliance on paid advertising on the search and social media platforms. Firms 6 and 7 also exhibit social-material entanglement, for example through their enthusiasm for measuring the metrics of digital campaigns (Firm 6), encouraging employees to create online content that will resonate with followers (Firm 7), and repurposing video content for online dissemination (Firm 2). However, the ability to create longer term strategic value is restricted by their inability to configure a unique DEM resource environment. The team culture, while evident to an extent, does not extend into the digital realm in the way that it does in Firms 1 and 3, as evidenced by the way in which teams in those firms explore, push and test the boundaries by leveraging technology in practice. The sense of technology unfolding in practice, as seen in Firms 1 and 3, was less evident in Firms 2, 6, and 7, thereby providing less scope for experimentation and agility.

In Firms 4 and 5 there were comparatively low levels of DEM bricolage. While individually the digital marketers in these two firms possessed digital marketing skills and were familiar with relevant technologies, for example email marketing and how to measure marketing effectiveness, the culture and practice of both organisations was characterised by a lack of entanglement of the social and material. While there was an organisational structure (for example, the digital marketer in Firm 5 centrally responsible for the digital marketing across the whole hotel group), there was a lack of a digital team culture where digital marketing knowledge could be reciprocally shared and disseminated. Although resources were available (e.g., a volunteer network, email database, knowledge of digital marketing, and eight unique hotels), the inability to connect and configure the social and material elements of these resources resulted in less value derived from DEM.

Discussion

The SMEs the authors selected for competency in digital marketing still had considerable differences in firm interaction with digital tools. Value creation occurs when digital marketing bricoleurs utilise the whole digital marketing toolbox and not only social media (McLaughlin *et al*., 2022; Vrontis and Basile, 2021; Yang *et al*., 2023). A sociomateriality lens to study DEM bricolage elucidates what occurs in the "black box" (Senyard *et al*., 2014, p. 224) of bricolage. At the highest level, marketers (Firms 1 and 3) created an idiosyncratic DEM resource environment affording them short-term (e.g., increased website conversions) and long-term strategic value (e.g., building a 360-degree view of customer relationships). Both firms are characterised by digital marketers proactive in shaping technology in practice and whose affinity with, and knowledge of, technology result in the productive entanglement of the social and material.

Sociomateriality in this context combines entrepreneurial marketing behaviours: proactive digital technology adaptation-in-practice, consistent acquisition of technical knowledge, rapid deployment by testing and learning, co-creation with customers, creating effective teams, resource leveraging, and initiating a firm culture characterised by a constitutive entanglement of the social and material. The authors observe DEM bricolage as proactive behaviour driven by entrepreneurial digital marketers.

Notably, technology-in-practice is what firms do, as opposed to the technologies they have, confirming Feldman and Orlikowskis' (2011, p. 1243) view, "strategy as practice is oriented to what actors do, as opposed to something that organizations have". In contrast to extant literature with its emphasis on external factors (Hong *et al*., 2023; Yang *et al*., 2023),

and technological capability as an output of entrepreneurial marketing (Sun and Lee, 2022), this study, at an intrafirm level, demonstrates that technologies are "malleable" (Feldman and Orlikowski, 2011, p. 1246), highly intertwined with marketing processes, and can be configured to enact DEM environments idiosyncratic to the SME.

Conclusions

Theoretical contributions

The main contribution of this study is to identify the processes, actions, drivers, and strategy that enable SME digital marketers to enact DEM bricolage. While the authors acknowledge the pivotal role of the entrepreneur (Corvello *et al*., 2022; Nambisan, 2017; Troise *et al*., 2022a), this study focuses on digital marketers, intrinsic to the digital transformation of SMEs. While the bricolage literature is replete with empirical studies of 'what' and 'where' bricolage is practiced, there is significantly less insight as to 'how' it is enacted. This understanding of 'how' DEM bricolage is practised is informed by sociomateriality, helping to answer the unresolved question, "*How can SMEs enact bricolage and implement technology in practice to create value through digital entrepreneurial marketing?*"

The authors have responded to calls for improved understanding of the "primary factors and entrepreneurial behaviours in the current digital scenario" (Troise *et al*., 2022a, p. 1130) and for further empirical research in this area (Orlikowski, 1992), noting that SMEs are overlooked in earlier conceptualisations. This study corroborates Morgan-Thomas's (2016) proposition that technologies are shaped in practice, furthering our understanding of 'how' they are shaped. It also informs DEM theory (Hong *et al*., 2023; Yang *et al*., 2023) and how SMEs can deploy digital tools to enhance DEM bricolage opportunities, increasing entrepreneurial marketing opportunity and orientation (Jones and Rowley, 2011). The intertwining of the social and the digital increases proximity between the entrepreneurial marketer and the technology.

Implications for policy and practice

Based on this study's findings, DEM policies should support entrepreneurs in intertwining the social (the team, knowledge, purpose, passion for experimenting with technology) and material (applications, platforms, channels, data, integration) in a process of "mutual constitution" (Feldman and Orlikowski, 2011, p. 1242). They should be cognisant that enacting higher levels of DEM bricolage requires an organisational team-based approach. How SMEs orientate to keep pace with radical changes in technology and DEM methods is always going to be a challenge for smaller businesses. However, the authors assert that without the embedding of

digital technologies within a firm's operations, there is likely to be systemic failure as observed by Eiriz *et al*. (2019), Nguyen *et al*. (2015), and Peltier *et al*. (2012).

Limitations and future research

This was a focused in-depth study with a sample taken from a specific geographic region. The authors recommend that the conceptual framework (Table 1) and template analysis (Figure 1) are deployed in other studies in different countries and industry sectors to encourage wider organisational studies of DEM, digital adoption and digital bricolage. This study highlights the role played by the digital entrepreneurial marketer in SMEs, however further research is needed to understand how this role may influence behaviours in the incumbent firm. This study's conceptual framework comprising bricolage typology and sociomateriality could be tested in SME digital transformation studies and larger quantitative studies.

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Table 1. Conceptual framework: Bricolage and sociomateriality processes, concepts, and definitions.

Bricolage		
Making do	"This process involves three main approaches to resource acquisition and construction: (1) creating something from nothing, (2) using discarded resources for new purposes; and (3) using hidden or untapped local resources that other organizations fail to recognize, value, or use adequately".	Di Domenico et al. (2010, p. 689)
	"Trying out solutions, observing, and dealing with the results".	Baker and Nelson (2005, p. 334)
Combining resources to enact an idiosyncratic resource environment	"Bricolage is an engine driving the enactment of resource environments that are idiosyncratic to the firm".	(Baker and Nelson, 2005, p. 356)
	Importance of creating an organisational culture conducive to bricolage, including access to technology, owner-manager support, knowledge acquisition, and trust and space to experiment.	Ferneley and Bell (2006)
	"Meandering, and path dependent trajectory dominated not by clear vision and careful a priori planning but by serendipitous combinations of existing programs, pasted-up solutions, and failed components put to unexpected uses."	Baker and Nelson (2005, p. 335)
Sociomateriality		
Constitutive entanglement	"There is no social that is not also material, and no material that is not also social".	Orlikowski (2007, p. 1437)

of the social and material	"How opportunities emerge in and through "interactions between actors and artifacts that become entangled with one another".	Garud and Giuliani (2013, p. 159)
Shaping the enactment of technologies in practice	Technologies "are rarely used in the manner intended by their creators and users shape their enactment in practice, that is, digital technologies 'unfold' in practice".	Leonardi (2011), cited by Morgan-Thomas (2016, p. 1128)
Recursive intertwining	"The recursive intertwining of humans and technology-in-practice", which leads to "performed relations" at the intersection between the material and the social.	Orlikowski (2007, p. 1437)

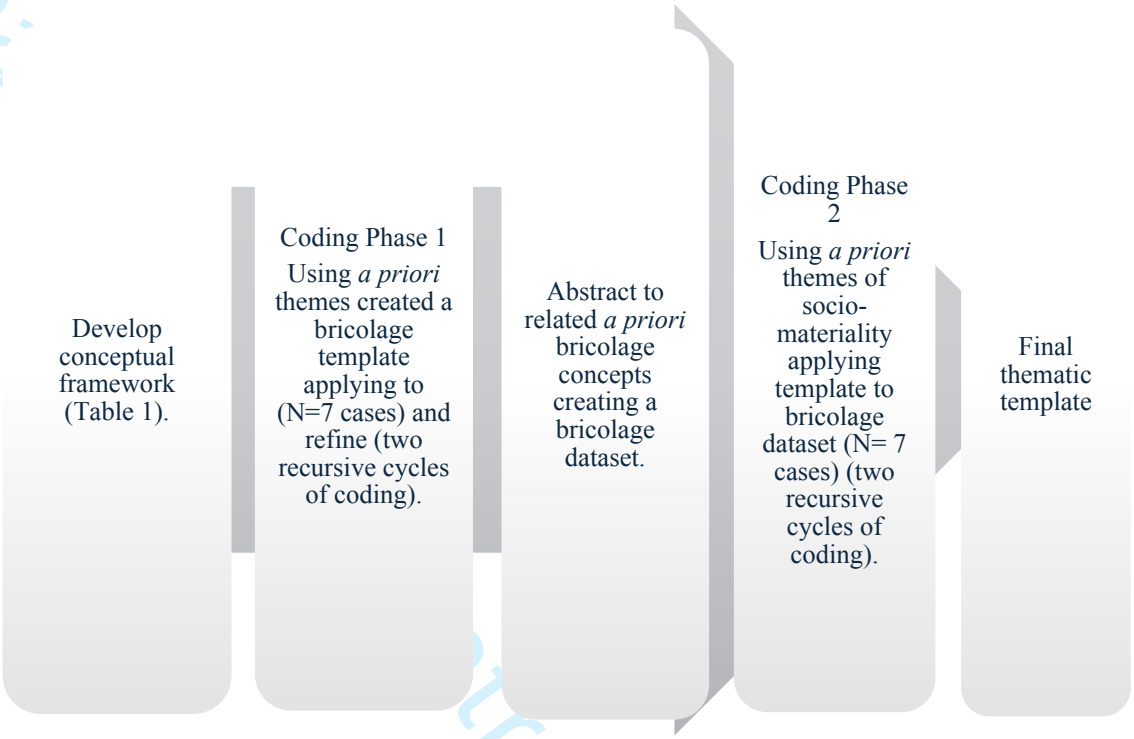
Table 2. Firm activities and interviewer observations.

Firm	*No. staff/ownership**	*Marketing resource*	*Interviewer observations*
1.	51-200	• Hospitality firm • Digital marketing manager (interviewee) • Head of loyalty programme • Three university interns	The interviewee checks a mind map on his tablet of what he wants to talk about. He gets his laptop to show me online tools.
2.	11-50	• Events company • One marketing employee (interviewee) • External website designer	The interviewee is passionate about the creativity of social media - less the technical side.
3.	2-10	• Sports and music festival • Two digital marketers (interviewees) • External agency	Employees are young and sit together. The interviewees are passionate about what they do, talking about technologies.
4.	50 (plus 200 Volunteers)	• Visitor attraction • One part-time digital marketing employee (interviewee)	We sit in the small kitchen, and it is obvious that the attraction has limited funds. The interviewee appears frustrated because her hands are tied

			without direct access to the website.
5.	201-500	• Independent hotel group (8 hotels) • Digital marketing employee in central office (interviewee) • Each hotel has its own marketing staff.	The interviewee is passionate about what she does but is not interested in technology, seeing it as a means to reach her goals.
6.	51-200	• Museum • Digital marketing executive (interviewee) • Digital marketing assistant • Marketing manager • Assistant marketing manager • Content marketing executive • Two graphic designers • A photographer • Filmmaker	Interviewee talks with passion, more in terms of opportunities than restrictions. She is interested in analytics - this drives her.
7.	11-50	• Independent hotel • Marketing manager (interviewee).	Four people sit in the far corner from us who turn out to be the events team. They wear virtual reality googles - their idea so that people can see what the room would look like for a wedding.

* The broad range of employees indicates the seasonality of these businesses, with temporary staff employed in peak season.

Figure 1: Template analysis



Supplementary summary of findings table

Firm	Digital marketing goals and challenges	DEM bricolage			Value accrued
		Making do	**Refusal to enact limitations**	**Combine resources to enact DEM idiosyncratic resource environment**	
1	• Goals*:* to build a 360-degree view of the customer to personalise the experience. • Challenges*:* a lack of technology integration, and technology vendor pricing making it prohibitively expensive for SME firms to buy an off-the-shelf solution.	• Resolving to use an existing suite of applications rather than buying an off-the-shelf CRM. • Utilising interns from local university.	• Optimising features included in existing technology vendor package. • Martech integration through 1) APIs (Application Programming Interface) 2) third-party API connectors, Zapier and IFTTT (If This Then That). 3) Manual loading of data using Excel. • Ongoing technical knowledge acquisition.	• Reconfiguring Mailchimp to act as a CRM platform. • Applications are integrated with Mailchimp, including Shopify (e-commerce), Stripe (online payments), TripAdvisor (customer reviews), and Little Hotelier (reservations). • Leveraging relationship with digital agencies to bring digital knowledge in house.	• High strategic value. • A Martech stack closely integrated with DEM processes. • A significantly more joined-up view of customer behaviour, enabling firm to customise experience, throughout customer journey. • A customer loyalty programme supported by DEM activities.

2	• Goals: to create digital content that communicates the personality of the firm. • Challenges: none specifically referred to by the interviewee.	• Digitizing untapped resources (video, images, and client case studies). • Utilising employees as digital storytellers – creating a 'day-in-the-life' blog. • Ability to assess engagement with the blog.	• Using employee social media accounts for social media marketing to mitigate the limitations imposed by social media algorithms.	• Using social media platforms and engagement from followers on social media to configure a content-rich digital marketing resource.	• Low to medium value • Creating low-cost digital assets and rich digital content which extends the firm's organic (i.e., non-paid) reach on search engines in the longer term.
3	• Goals: to raise awareness and drive 'traffic' to the website for online sales. • To reduce reliance on restrictive social media algorithms by communicating through different channels. • Challenges: none specifically referred to by the interviewee.	• Customers as ambassadors, including the use of micro-influencers. • Making do with current martech. Not investing in expensive bespoke solutions.	• Use of a peer-to-peer referral platform. • Reducing firm reliance on social media platforms and restrictive algorithms. • Configuring CRM software to tailor to bespoke needs. • Ongoing technical knowledge acquisition.	• Integration of applications with WordPress website: Monster Insights (WordPress analytics plugin), WooCommerce (e-commerce plugin) to manage team entry, Elementor (page builder) and HotJar (user click behaviour), and TubePress (hosting YouTube videos).	• High strategic value • Creating a user-centric website. • Enhancing the customer experience throughout the customer journey. • Autonomy in building web pages. • Improving website conversion, leading to increased bookings.

				• Iterative process of test and learn.	• Building digital knowledge within the team.
4	• Goals: to build a more integrated view of the customer. • Challenges: goal setting is controlled by the parent organisation with little scope for input from the digital marketer.	• Using email newsletters to build an engaged community to gather customer feedback. • An effective volunteer network that can be leveraged to create social media content.	• This is limited by the lack of intrapreneurship and autonomy afforded to the digital marketers.	• Missed opportunities to combine resources (e.g., community, email newsletter, volunteers) to enact a unique DEM mix.	• Low value • Building an email subscriber base and extending reach on social media at comparatively low cost.
5	• Goals: to provide digital marketing support to eight hotels in the group. • Challenges: a fragmented hotel group with a lack of integration of digital marketing technologies.	• Using data analytics to make the use case for digital marketing.	• Limitations occur due to lack of integration across the hotel group and lack of intrapreneurship and firm culture that does not support digital marketing development.	• There is a missed opportunity to configure a resource environment that leverages the resources of the 8 hotels in the group.	• Low value – limited by lack of collaboration and intrapreneurship. • Slowly building 'use case' for digital marketing within the company.
6	• Goals: to build organic (non-paid) reach on social media and search platforms.	• Leveraging existing customers and social media followers as ambassadors.	• Countering limitations imposed by social media algorithms through co-creating content with high	• Limited digital configuration, but creating a resource environment centred around the unique	• Medium value created. • Building a social media following and

	• Challenges: limitations imposed by social media algorithms which limit the reach of social media posts.	• Using micro-influencers related to the theme of the attraction.	profile social media accounts.	brand of the firm that includes high profile social media accounts.	extending organic reach by engaging with online influencers.
7	• Goals: to build brand awareness online and identify opportunities to create engaging digital content. • Challenges: none specifically referred to by the interviewee.	• Leveraging employees as a resource to create digital stories online and capture in-hotel events for online dissemination and PR.	• Creating a strong sustainability-themed brand that raises the profile, creates a unique selling proposition, and a stronger digital footprint.	• Limited digital configuration but extending resource base beyond its means by creating a strong brand story.	• Medium value created. • Growing a social media following. • Strong brand generating back links to the website, boosting search engine ranking.