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A Taxonomy of SME E-Commerce Platforms Derived from a Market-Level Analysis

Christopher P. Holland, and Manuela Gutiérrez-Leefmans

ABSTRACT: Small and medium-size enterprises (SMEs) constitute a large and important sector of the U.S. and U.K. economies and e-commerce platforms have evolved that are designed specifically to help small business owners and entrepreneurs. Despite the popularity and importance of these digital platforms, there is a paucity of research in this area. This article contributes to theory by being the first study to map out the competitive landscape of SME e-commerce platforms in two markets using a theoretical framework and analysis that is based on business model and strategic group theories. In total, 144 platforms were analyzed using an online panel data methodology, which identified 32 leading SME e-commerce platforms in the UK and United States. These leading platforms were analyzed at the market level using cluster analysis based on strategic group theory and website content analysis. A taxonomy is proposed based on theoretical constructs derived from business model theory: value proposition, Web 2.0 sophistication, and revenue model. Five distinctive strategic groups are identified: information laggards, basic networking, advanced networking, advanced networking mature, and social media markets. The study further outlines managerial implications for SMEs, SME e-commerce platform providers, and external sponsors of the platforms—predominantly government organizations and banks.

KEY WORDS AND PHRASES: business model theory, cluster analysis, e-commerce platforms, SME, strategic group theory, taxonomy, Web 2.0.

The United States has approximately 28 million small and medium-size enterprises (SMEs) and they represent 99.7 percent of employer firms [33, 115], which makes it the world's largest community of SMEs. The United Kingdom (UK) is also a leading SME economy together with France, Germany, Italy, and Sweden [127]. The UK has approximately 5.2 million SMEs [113]. SMEs form an important sector of the economy because of their role in encouraging economic growth and innovation. An important problem facing SMEs is their need for information and advice on a range of business topics including how to set up a company, deal with legal issues, carry out sales and marketing successfully, and use technology effectively. Various digital platforms have emerged in both countries that provide business information, and also support information and knowledge exchange between SMEs. These platforms are important because they can potentially stimulate the formation of new businesses and improve the probability of survival and success of

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SMEs [31, 137]. Both the United States and the UK are highly advanced countries in terms of technology infrastructure and Internet access is 87.4 percent in the United States and 91.6 percent in the UK [127].

Web 2.0 technology and social media are integral features of these SME digital platforms. There are three main streams of research into Web 2.0 and social media. The first and largest area of research is on consumer-focused use of social media applications, for example, Facebook, Twitter, and Weibo [38, 77], including consumer-to-consumer (C2C) and business-to-consumer (B2C) interactions via social media. This includes research on SME adoption and use of social media, which focuses on SME-to-consumer contexts [62, 101]. The second area is the use of social media within large organizations [84], which are often referred to as Enterprise 2.0 platforms. It is clear that the implementation of Web 2.0 in global companies has significant implications for organizational design and the functioning of organizations; see, for example, CISCO's Enterprise 2.0 strategy [108]. A third research area is the use of Web 2.0 and social media designed specifically for use among SMEs [86], which is the focus of this study, and referred to as "SME e-commerce platforms." The purpose of SME e-commerce platforms in this last research stream is to enable SMEs to share information that is of direct relevance to small business owners and entrepreneurs, and to facilitate networking and sales between SMEs. Based on the definition of e-commerce as the sharing of business information, maintaining of business relationships, and conducting of business transactions by digital means over telecommunications networks [143], the authors term these social media systems as "SME e-commerce platforms" and define them as:

The use of Web 2.0 technologies and social media designed specifically to support SMEs in the formation, development, and management of commercial and social relationships with each other, with their economic partners, and with their SME customers for the purposes of information dissemination and sharing, knowledge creation, networking, and sales.

SME e-commerce platforms are different from social media platforms such as Facebook and eBay, because SME e-commerce platforms are designed specifically for SME owners, managers, and entrepreneurs. Although both SMEs and consumers use Facebook and eBay, the SMEs use these types of consumer-focused platforms principally for promotional and sales purposes.

The high number and technical variety of SME e-commerce platforms that exist in countries such as the United States and UK make them an interesting and commercially important phenomenon to study. Research on platform industry architectures stresses the importance of market analysis because competition is an important element of business model success [58, 59]. Previous empirical research on business model competition [15] has generally considered a small number of competitors. This is particularly true of research on SME e-commerce platforms, which analyze three [40] and two platforms [74]. A market-level analysis, by contrast, involves analyzing a large number of competitors in a single national market, which is an innovative way of evaluating e-commerce platforms and their business models. A market-level analysis is useful

because it gives academics and managers an overview of a new and quickly changing set of competitors, whose size distribution and strategic positioning are largely unknown. In this study, hundreds of competing SME e-commerce platforms in two separate markets (the United States and the UK) are analyzed using a synthesis of large-scale online panel data and detailed evaluation of individual websites.

Prima facie there is a paucity of market-level studies of e-commerce platforms. Strategic group theory is an important method of analyzing competition in order to understand the nature and structure of the competitive landscape in a market [44, 70, 102]. To apply strategic group theory, the e-commerce platforms are conceptualized as competing business models. The combination of strategic group theory and business model analysis of individual platforms is therefore an interesting and relevant approach to improving our understanding of the phenomenon of SME e-commerce platforms.

This article investigates two research questions:

1. How can business model and strategic group theories be applied to market-level analyses of the competitive landscape of competing SME e-commerce platforms?
2. What is a taxonomic model of SME e-commerce platforms based on strategic groups of platforms with similar business model characteristics?

Literature Review

Electronic Markets and Interorganizational Systems

Digital platforms began as electronic marketplaces [20], such as Covisint, which is a B2B marketplace in the automotive industry, and eBay, which is primarily intended to be a consumer-focused marketplace enabling C2C and B2C transactions, although it also supports B2B transactions. These marketplaces matched buyers and sellers, facilitated the exchange of information, goods, services, and payments associated with market transactions, and provided an institutional infrastructure [9]. The literature on electronic markets is diverse and has covered the adoption, governance, design, success, and economic impact of the marketplace [83, 96, 123]. Recent studies have also started to use different theoretical approaches such as a strategic capability approach to investigate performance [136].

Electronic markets can remove many of the competitive advantages of larger companies and provide opportunities for smaller enterprises [137] with cost-effective means to explore new markets, improve communications, and identify suppliers. Previous research related to small companies has looked at the benefits and barriers of SME participation in electronic markets [122], explored factors that affect buyer-supplier relationships of SMEs in marketplaces [68], and analyzed the adoption and failure of electronic markets by SMEs [124]. In a study of regional

electronic marketplaces (REMs) used to promote the adoption of e-commerce by SMEs [41], it was found that the significant factors affecting the success of government-supported SME-REMs were: SME-owner innovativeness, REM ownership structure, and governance that engenders trust and builds critical mass. In an analysis of failure of nonperforming B2B exchanges aimed at all sizes of companies, the importance of innovation and governance was also identified [29]. Other research found that the number of studies on electronic marketplaces and SMEs is very limited and that most of this literature focuses on transactions and efficiency rather than information sharing, knowledge sharing, and community development [135], which are all important features of SME e-commerce platforms. Examples of recent studies that look specifically at SMEs and electronic marketplaces are the design of electronic markets for competitive advantage [109] and the use of SMEs as service providers [27].

The interorganizational system (IOS) literature also addresses information exchange among SMEs. The examination of knowledge acquisition within SMEs through engagement in an online network found that trust in online communities is demand-led [74]. That is, this study revealed that an online learning network or community developed better when SMEs could engage on their own terms with their information providers in an active communication process, rather than being passive recipients of information. A “digital enterprise community” enabled by one or more intermediaries to form an e-cluster was an important result [14, 74], and this research predicted that the formation of such communities was likely in the SME sector. Among the reasons for belonging to a community was that a community is neither a hierarchical nor a market form, and combines elements of competition with cooperation [53]. It therefore makes the networking facilitated by the community an attractive proposition to SMEs.

The need for information exchange is common because knowledge is distributed across many organizations, and firms recognize an increasing requirement to collaborate with other firms [137]. The authors of research on new forms of collaborations between SMEs [14] refer to “an e-business application, promoted by a trusted third party, which engages a significant number of SMEs by addressing an important shared business concern within an aggregation.” The work of Brown and Lockett [14, 75] is relevant because it highlights the digital divide between large companies and SMEs, which is evident in the widely differing rates of e-business adoption. A very important contribution of Lockett and Brown’s work is the consideration of these communities as a new type of IOS and a new business model. That is, they identify and view nascent digital platforms for SMEs as business models [14]. The importance of cross-industry innovation and knowledge-sharing among SMEs for economic sustainability via regional electronic marketplaces has also been identified in other studies [40, 41]. The crucial development since the early research into this area [74, 122, 137] is the rapid development of Web 2.0 technology and social media.

SME E-Commerce Platforms and Web 2.0 Technology

Web 2.0 is the ideological and technological foundation that introduced the concepts of interactivity and user-generated content (UGC) [65]. Web 2.0 technologies include blogs, discussion forums, social bookmarks, wikis, media sharing, reviews, and social networking [84, 134]. Social media web-sites employ web-based technologies to create highly interactive platforms via which individuals and communities share, co-create, discuss, and modify UGC [66]. The social aspect of these platforms has also changed the way in which organizations communicate. E-commerce platforms specifically designed only for SMEs, such as those discussed in the previous section, can include social media tools that combine elements of information and knowledge sharing, community development, networking, and sales activities.

Research on Web 2.0 can be grouped into three streams: (1) consumer-focused platforms such as Facebook, eBay, and Weibo; (2) Enterprise 2.0, which is typically the use of Web 2.0 by large organizations; and (3) the relatively underresearched area of SME e-commerce platforms. A brief overview of each stream is provided next to justify the focus of this study on the third stream.

The first stream comprises the largest amount of research and is the use of Web 2.0 for social networking [18, 65, 78]. Research on the use of social media by SMEs that focuses on consumer-focused platforms has addressed SME performance [39], social media competency [13], adoption [34], and innovation [73].

The second stream comprises a growing body of research, but is not as extensive as the first stream—for example, the business use of such technology to support the functioning of an enterprise [69] and use of the term “Enterprise 2.0” to refer to the use of platforms within organizations [23, 84]. Enterprise 2.0 has typically been used to describe the use of Web 2.0 and social media within large organizations although there have been some recent studies on the use of Web 2.0 to support internal business processes in small companies [85]. Enterprise 2.0 systems, in common with earlier enterprise resource planning (ERP) systems, are now starting to extend into the supply chain. A study of the adoption of enterprise social networking [131] analyzed six generic categories of applications: information dissemination, communication, collaboration and innovation, knowledge management, management activities and problem solving, and training and learning. In addition, there are open organizational platforms, which extend to include other actors within the value chain of the organization [5].

The third stream of Web 2.0 research is the emergence of platforms that are specifically designed and targeted at SME users. These SME social media platforms are different from consumer-focused social media (e.g., Facebook, eBay) and Enterprise 2.0, because SME social media platforms provide information content and advice specifically designed for small companies and offer functionality that helps SMEs network with other SMEs. Studies concerned with the use of Web 2.0 applications among SMEs have stressed

information sharing and collaboration as part of their models [86]. However, research on specialized SME platforms that use a combination of Web 2.0 applications is scarce, an example being the study of a single platform that used multiple Web 2.0 applications [106]. This means there is a lack of research examining multiple SME e-commerce platforms (where each platform may include one or more Web 2.0 applications) to understand the value they offer to SME users.

The limited research in this area suggests that the value proposition of an SME e-commerce platform is based on the usefulness of its information, and also the networking and sales functionality of its social media. Such platforms can be viewed as a business model [14] and this is a logical way to conceptualize SME e-commerce platforms incorporating social media, where the purpose is to understand them as a holistic system of interrelated activities that encompass value proposition and the use of new social media technology. We review business model theory, including the role of Web 2.0 and social media to develop the theoretical framework.

Theoretical Framework

Business Model Theory for Conceptualizing SME E-Commerce Platforms

A business model can be defined as the rationale or logic of how an organization creates, delivers, and captures value, and incorporates different facets of an organization's activities [98]. The business model concept in the information systems (IS) literature has also been concerned with the adoption and strategic use of technology [142]. The seminal work of Lockett and Brown [75] recognized the importance of technology intermediaries when creating e-commerce business models as part of what they defined as an "e-trust platform." The research by these authors emphasized the importance of a business model's technology sophistication and innovation, and its value proposition and value creation potential. The importance of technology in the value proposition of a business model is clearly recognized [74, 130]. Other research proposed a taxonomy of business models using value generation and network cooperation as dimensions [141], which resulted in four types of models: communicator, transaction facilitator, value chain coordinator, and collaboration enabler. It can be seen that business model classifications have moved from a transaction-based view to those more focused on grouping business models according to the nature of collaboration.

Using these ideas, the theoretical framework for studying SME e-commerce platforms as business models is defined by three high-level constructs: (1) the nature of the value proposition [74, 130]; (2) the degree of Web 2.0 sophistication [13, 65]; and (3) the business strategy [49, 98]. Table 1 and the sections below summarize the relevant literature to support the theoretical framework by providing a definition of each individual construct.

Table 1. Theoretical Framework Elements

Value proposition	<p>Purpose of the SME e-commerce platform in terms of how SMEs will use the system. Defined as a product or service [33], value offering [1, 45], or value proposition [21, 99]. It can be:</p> <ul style="list-style-type: none"> • Information repositories and databases [138] • Networking opportunities to share ideas and potentially create new knowledge [57, 67] • Sales systems such as electronic markets and trading systems [8, 105]
Web 2.0 sophistication	<p>Advanced or complex use of Web 2.0 technology in the website. Considered as the platform for social media by allowing the exchange of user-generated content (UGC) [65]. It refers to:</p> <ul style="list-style-type: none"> • User-generated content: presence of UGC, content made publicly available through Internet created outside of professional practices [134] and UGC intensity, such as low or high number of comments in blog or forum • Interactivity: presence of clickable images and interactive tools such as polls and web chats, adapted from [46] presence of Web 2.0 technologies, such as blog, forum, social bookmarks, media sharing, social networking, and reviews [6, 10, 85, 87, 111], and Web 2.0 intensity measured by the number of Web 2.0 technologies • Additional technology: search technology, database technology, matching technology, mobile responsive design, use of social media such as Facebook, Twitter
Business strategy	<p>Defined as the business mission and basis for differentiation [48]. It means performing different activities from rivals or performing similar activities in different ways [104]. It refers to:</p> <ul style="list-style-type: none"> • Product-market scope [49]. Focused: addressed to a specific industry or broad, directed to any SME. • Revenue model [5] Advertising/sponsorship, subscription, sales, transaction fee, and affiliate
Strategic groups	<p>Cluster or groups of firms, where each group consists of firms following similar strategies in terms of the key dimension variables [44]. Useful to study intergroup mobility as entry barriers to insulate not only firms from new entrants to the industry but also firms moving from another strategic group [50]. They allow the study of firms in a competitive context. Strategic groups on this research are based on:</p> <ul style="list-style-type: none"> • Value proposition • Web 2.0 technology sophistication • Revenue model maturity, taking advertising as a common initial revenue model, other revenue models and their combinations inform the level of maturity

Value Proposition

From a customer perspective, the most important element of the business model is the value proposition [75]. That is, what is the purpose of the website for its users? Value proposition is defined as the benefits customers can expect from products and services [99]. It has also been defined as a product or service [33] or a value offering [1, 45, 120]. The value proposition construct therefore defines the purpose of the SME e-commerce platform in terms of why or for what purposes SMEs will use the system.

There is a greater need for information integration in SMEs than in large companies because SMEs lack the financial resources and business resilience of large enterprises [11]. The volume of information exchanged through social networks is increasing [3], and social networks are a natural area for SMEs to focus their efforts to improve their information sharing and dissemination. Previous research suggests that acquaintances different from those in one's own organization can provide access to new knowledge and ideas and extend the potential range of information available [57, 76, 81, 110]. Therefore, both the information available and the ability to network constitute an interesting offer for SMEs looking to use a social media platform. In addition, the role of online market facilitator is important, where sales transactions can be managed within an agreed governance structure that exploits technology to make the processes efficient.

Three separate categories of value proposition are proposed: information (only); information and networking; and information, networking, and sales. Table 2 outlines the different characteristics that define these categories of value propositions of SME e-commerce platforms. The importance of these three types of value proposition is emphasized by long-established websites such as AMEX Open Forum. This platform originated as an *information (only)* website, and then evolved in its use of technology and networking functionalities to include *information and networking*. The platform then further evolved to include sales functionality. It is likely that SME members also evolved along with the platform [94]. New members of an advanced

Table 2. Value Propositions of SME E-Commerce Platforms.

Value proposition	Characteristics of website
Information	There is content on a range of topical issues that are important to SMEs, including marketing, legal issues, strategy, finance, and use of technology. In addition, there is advice to help entrepreneurs and SMEs survive and grow in the form of articles, blogs, and videos. RSS feeds provide updates on information, and registered users may receive a regular newsletter and access more personalized content. The value proposition also includes templates for legal issues, rental agreements, sales contracts, and negotiations with banks for loan agreements. There may also be databases with the contact details of other SME companies and potential advisers such as accountants, banks, and lawyers. Links to other useful websites for SMEs and advertisements for professional services may also be offered.
Information and networking	In addition to content, networking can take place through comments in blogs where SME users start interacting. For websites with a social network, the networking between SMEs is very clear as users can interact with each other and share information and knowledge through a discussion forum. Websites with a discussion forum facilitate SME networking through threads in specialized forums. Some websites may also include a funding platform within the website that helps SMEs to secure loans from financial institutions. Ratings and reviews are also common features of networking functionality.
Information, networking, and sales	In addition to content and networking functionalities, a sales functionality allows SME users to conduct transactions within the platform from placing an order to delivering a product or service. This includes shopping carts, payment technology, and order tracking.

platform do not necessarily have to use all of its functionality immediately and can instead choose to access the information content before using the platform's more sophisticated technology once they have gained experience and confidence in using the platform [13, 94].

Sophistication of Web 2.0 Technology

Basic networking and discussion forums create the basis for more sophisticated use of Web 2.0 and social media, and then social e-commerce [95] can be added to the functionality of the website. A key variable to assess a platform is therefore the degree of Web 2.0 technology sophistication—because it provides insights into the scale of technology, investment may be an indicator of the relationship between technology and usage, value proposition, and revenue models.

Technology sophistication is important to understand because it is related to firm performance [103]. The measurement of technology sophistication may therefore indicate the impact of Web 2.0 technology on online success. Technology sophistication can also influence organizational structure [25]. It is therefore relevant to the study of SME e-commerce platforms' business models. For example, networking functionalities attract and retain users and this audience can generate more revenue streams. Debates on the creation of value from technology [30] focus on information technology (IT) investment and returns, and on the value derived from platforms such as ERP systems [107]. However, in a network economy value is derived from plentitude, just as a fax machine's value increases as fax machines become ubiquitous [119], which generates a network effect. Network effects are related to the increase in a product's economic utility due to the increase in the number of network users [117]. The more sophisticated a website's Web 2.0 technology, the more SME users are attracted to the website. This generates network effects and continues to attract more users due to the number of users already on the platform.

Web 2.0 sophistication is therefore a key construct for business models. Literature on business models has considered technology as a "resource" element [1, 82, 125]. However, a more specific focus on technology is important for the study of digital platforms. An important contribution is made by referring to a business model that takes into account the capabilities of Web 2.0 such as collective intelligence, network effects, user-generated content, and the possibility of self-improving systems to study the web information services industry [17].

From previous work it is known that the technology and applications available are important for technology sophistication [71]. Criteria for IT sophistication have usually been related to hardware, software, and applications, which create interactivity on the website [109, 121]. Early research on the Internet usually referred to features that enabled communication such as e-mails. However, the interactive element was not emphasized until Web 2.0 technology was deployed. The interactivity of the platform is important as it is related to customer satisfaction [140] and keeps users attracted to the platform. Following these approaches, interactivity can be defined as the

collection of different Web 2.0 applications and functionality offered by SME e-commerce platforms. It is also important to consider separately the importance of user-generated content, which is an important feature of SME e-commerce platforms [17, 65]. The role and importance of UGC has been widely recognized [17, 55, 65, 134], and is defined as the presence of publicly available website content that is created by individuals [134]. By definition, discussion forums stimulate comments from users. In the case of blogs, even when a professional contributor writes the blog, this may stimulate interest and generate further content from users.

As well as interactivity technology and UGC, there are what can be termed “additional technology” features such as search and database technology, which make the website easier to use [4], and the external use of social media technology. In an SME e-commerce platform, database technology refers to technology that stores data such as contact details and SME location or enables easy searching of particular topics. Matching technology refers to technology that associates users in a platform according to the information they provide. This includes collaboration platforms such as brokers and auctions [79]. For example, a funding platform in an SME platform would match an entrepreneur with the investor interested in the business idea. Search technology is an important part of the information value proposition because it is an information-seeking system that makes it possible to conduct keyword queries [28]. These can be considered mainly Web 1.0 technologies. However, the relevance of such basic technology is justifiable if one considers that a website may have low UGC intensity but still have many visitors due to the significant content provided by the platform. Therefore, the objective of considering such technologies is to provide a more integrated framework that informs us of technology sophistication ranging from very basic websites to the most advanced ones.

Social media technology has been used mainly for customer interaction in the sales, marketing, and support channels [64] and in a business model context, it is an important element of Web 2.0 technology. The presence of the website in major social media applications such as Facebook and Twitter is therefore important and is counted as additional technology because it is external to the platform—that is, it is not technology that the platform has incorporated itself such as its own discussion forum. Mobile responsive design is also included because it informs us of the overall sophistication of the platform. It is an advanced feature that is only present in a small number of sophisticated websites. Users are accessing websites with mobile devices in the UK and the United States and mobile usage accounts for more time spent on the Internet than desktops [139]. SMEs are particularly interested in using mobile technology because of their need to be agile and responsive to competitive pressures and customer needs [80].

Business Strategy

Strategy has been defined broadly as a sequence of decisions that exhibit a consistency over time [88] and also as a business mission and basis for differentiation [48, 49] by performing activities different from those of rivals

or performing similar activities in different ways to achieve competitive advantage [104]. In an SME e-commerce platform context, important areas for differentiation are product-market scope, the range of different revenue models used, partnerships, and customer acquisition and retention strategies.

The product-market scope is part of the core strategy as defined by Hamel and Prahalad [49] and it refers to the both the product and the sector the product is aimed toward. SME e-commerce platforms are generally designed for all types of small businesses and entrepreneurs, regardless of sector, because all SMEs face a similar set of general business problems. However, the literature on segmentation implies that an important strategy could be to focus on a single SME-related market sector such as the building industry, service businesses, or property management and renting.

Revenue models have been an important element of the business model literature since its origin [61, 97, 98, 130]. A revenue model describes how a firm earns revenue, generates profits, and produces a superior return on invested capital [69]. There are five different e-commerce revenue models: advertising, subscription, sales, transaction fee, and affiliate [69]. Companies that are funded by large partners such as banks in exchange for advertising space are classified as advertising revenue. This revenue model framework is similar to other frameworks of revenue models, including advertising, sales of syndicated content, subscription or rental of services, direct product or service sales, and commission-based sales [16]. The relevance of information content to generate revenue is highlighted in both of these definitions.

Partnerships are founded in order to create alliances, optimize the business model, or reduce risks, and are vital to a firm's survival. Earlier business model theory refers to a network of partners [97] or to alliances and partnerships as part of a value chain or net [89, 100, 132]. The business model has also been viewed as a representation of the underlying core logic and strategic choices for creating and capturing value within a value network [116]. The business model concept has also been described as an architecture of a firm and its network of partners for creating, marketing, and delivering value and relationship capital to one or several segments of customers in order to generate profitable and sustainable revenue streams [33]. Strategic partners are defined as the key partners in a value network [98]. This literature suggests that partnerships are an important part of a company's strategy. Research has also emphasized the role of partnerships in business model change, because changing the value chain position through the value network with employees, suppliers, and customers, in addition to capability/assets configuration, can lead to enterprise model innovation [42]. A platform may find that through existing or new partnerships, new value propositions can be developed and new sources of revenue can be generated.

Customer acquisition and retention strategies are particularly important for SME social media platforms because the platform's ability to attract and retain SMEs has a direct influence on its overall ability to grow and generate sales via the platform. It has been argued that customer acquisition and retention are not independent processes because the development of customer-focused strategies based only on an analysis of existing customers imposes the assumption that the customer-acquisition process does not

influence the customer-retention process [128]. For example, a Facebook campaign may be directed toward acquiring new customers, but it also reinforces the brand and may encourage existing customers to remain with the platform. Customer acquisition and retention strategies may include e-services that firms use to develop relationships with customers, provide customized communication, and thereby increase their likelihood of continuing the relationship with the firm [114]. Other authors refer to customer acquisition and retention in a more general way [89], for example, where operational activities could facilitate an increase in sales. Another interesting observation was that it is important to continue developing new value propositions in order to maintain the interest and loyalty of existing customers [98].

Market-Level Analysis of SME E-Commerce Platforms Using Strategic Group Theory

Although the importance of different units of analysis in business model research has been recognized in the literature, further work needs to be encouraged both at the firm and economy levels using the business model lens [133]. Most empirical research on business models has considered individual companies [61], and this is also true for the analysis of individual e-commerce platforms [96, 130]. Although previous research has considered more than one platform [40, 75], these have been limited to only a very small number of platforms. There is thus a need for theory-building work and empirical research that goes beyond case studies of single organizations and individual or small groups of platforms that adopts a market unit of analysis [32], which is much more comprehensive and includes *all* the platforms within a particular market. A proposed theoretical framework of business models that considers different units of analysis [52] is relevant here because it recognizes that competition is an important aspect of research at the market level of analysis. The importance of market analysis of platform industry architectures has also been stressed in other studies [59]. The theoretical framework for market-level analysis is outlined below.

Strategic groups come from the idea that an industry or market level can be viewed as clusters or groups of firms, where each group consists of firms following similar strategies in terms of key dimension variables [102]. The term was developed by focusing on strategic differences among competitors at the market level and the formation of groups according to asymmetry or homogeneity of operations within the same business [56]. Firms within a strategic group resemble one another closely, and are therefore likely to respond in the same way to disturbances, to recognize their mutual dependence quite closely, and to be able to anticipate each other's reactions accurately [102]. There are also important strategy implications for intergroup differences. For example, this theory has been successfully used to study intergroup mobility as an entry barrier that both insulates firms from new entrants to the industry and insulates firms in a strategic group from entry by members of another group [102].

Strategic group analysis has been criticized because of conflicting results. For example, some studies reported significant performance differences between groups [24] while others did not [12]. It was argued that performance differences between strategic groups existed because firms within one strategic group created mobility barriers for firms belonging to other strategic groups, which made imitation of strategy difficult [2]. An evaluation of the benefits and limitations of strategic group analysis concluded that strategic group research continues to offer a valuable way to classify firms by their strategy and to provide a robust theoretical taxonomy as a way to make sense of and to map industry dynamics over time [70]. This makes it particularly suitable for the strategic analysis and taxonomy development of the market of SME e-commerce platforms. Following Feigenbaum and Thomas [37], strategic groups also act as reference points for predictions of future strategies and for deriving industry group structures successfully. Strategic group analysis can therefore be used to identify strategically similar competitors and map the competitive landscape by identifying patterns and trends in the market [44]. These strategy concepts are applied directly to the analysis of the strategy dimensions of value proposition, degree of Web 2.0 technology sophistication, and business strategy, which are described in the research model.

Research Model

The theoretical framework for this research is based on the literature review of business model theory and related literature on electronic marketplaces and IOSs. The resulting research model shown in [Figure 1](#) comprises the following constructs: (1) the nature of the value proposition; (2) the degree of Web 2.0 technology sophistication; and (3) the business strategy.

Consistent with earlier approaches [82], the research model shows the interaction between the constructs in order to make the business model work. For example, a platform with high Web 2.0 sophistication can attract more visitors, which makes the platform more attractive because the numbers of networking opportunities and potential sales to other SMEs increase. In turn, the increase in the number of SME users may also increase the user-generated content in the platform and can increase the value proposition of the platform. These constructs are used to inform the strategic group theory, which is used to analyze and map the SME e-commerce platforms into a meaningful competitive landscape. In terms of the business strategy construct, the elements of revenue model and product-market scope are useful because they indicate the clear relationship between unique visitors and sources of revenue and give insights into the market focus of the platforms. Although the researchers recognize the importance of the value creation process [59, 98, 142], the internal processes and mechanisms that create value for stakeholders are beyond the scope of this study. Instead, a market-level view was taken of all the competitors along with a detailed evaluation of the strategic characteristics of the largest websites in terms of value

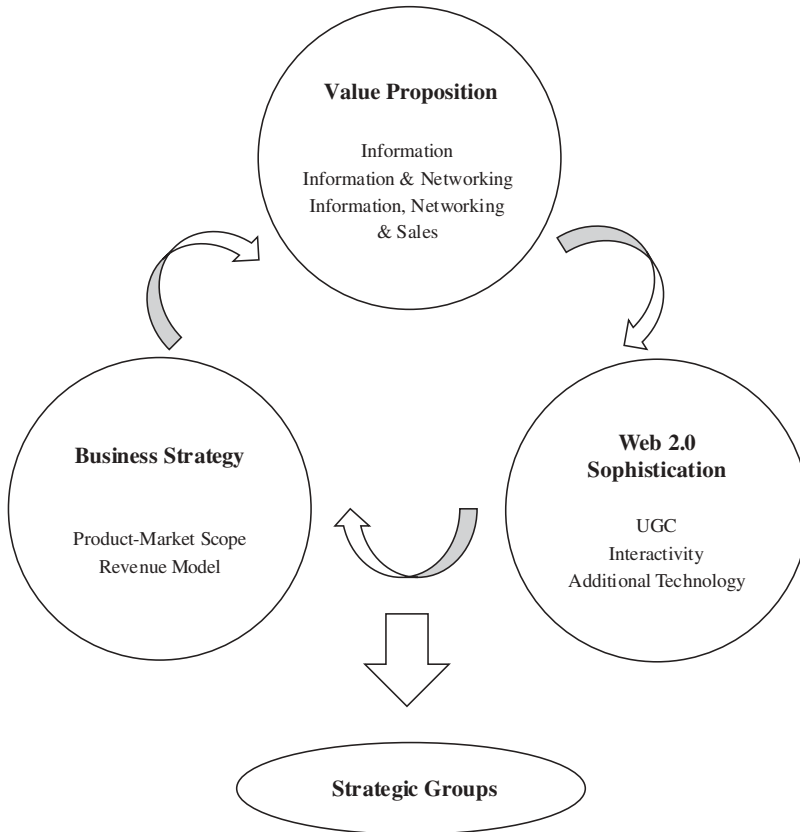


Figure 1. Research Model

proposition, Web 2.0 sophistication, product-market scope, and revenue streams, which can be inferred from content analysis of the websites.

Methodology

The authors worked closely with one of the major UK banks that developed a social media platform for its own SME customers in order to support and nurture the development and growth of start-ups and existing SMEs. The process of identifying relevant platforms was an iterative one, in which the authors combined internal knowledge and research from the bank with extensive online search. Websites were selected by doing a comprehensive search to locate platforms offering information, advice, and tools for new and/or established SMEs. Words such as advice, adviser, SME, entrepreneur, start-up, and network were used in the process. This resulted in a total of 144 websites, 76 of which originated in the UK and 68 from the United States. This procedure was followed until a data saturation point was reached [43]. This approach has been used in similar studies of large

numbers of websites [19]. Based on our theoretical framework, in particular the value proposition construct, those platforms that did not offer SME-focused information, networking capabilities, or sales were discarded. The websites that were excluded from the study were funding platforms, government websites with general content, and websites that sold only software packages for small businesses. The government websites that are included in the study are those with in-depth information content in areas such as legal, regulatory advice, taxes, fund-raising, and setting up a company (that is, these are specialized websites designed specifically to offer information and advice to SMEs and entrepreneurs), which falls within the remit of the sample, even if its use of Web 2.0 was very rudimentary.

This procedure allowed the analysis and evaluation of a large number of platforms that are different from consumer ones. The size of the SME e-commerce platform was measured by using online panel data from comScore, a commercial provider of online digital intelligence. This data set enabled the researchers to gain an objective measurement of website size based on the number of unique visitors to each platform. The analysis and interpretation of these data is a powerful analytical approach because it provides detailed insights into the scale of the platforms and the calculation of SME e-commerce platform online penetration. It also enabled the researchers to give an overview of the competitive landscape, and to focus their attention on the content analysis and business model evaluation of the largest platforms. The detailed mechanisms of how online panel data work are described below.

Online Panel Data

Online panel data consist of large numbers of users who are members of an organized panel that is tracked electronically over time. Online panel data from comScore are a type of “big data” that provide insights into how customers use the Internet—for example, the number of unique visitors to individual websites (i.e., the number of distinct individuals requesting pages from the website during a month) and search patterns such as visiting across multiple websites. In this case, the measure used refers to entrepreneurs or SME owners, as they are the ones interested in the value propositions of SME platforms. ComScore is an industry leading company in the provision of online marketing intelligence [92]. It has a panel of approximately 2 million users and global coverage, which facilitates the study of large samples [16]. ComScore does not rely on cookies, instead monitoring the actual behavior of each computer in the sample with knowledge of the location of the machine [22]. This gives comScore the strength to offer an accurate and unbiased measurement of the size of the website’s audience.

Online panel data are based on actual behavior and the size of the commercial online panel used means that it is a very reliable measure of actual usage of websites, rather than stated usage from a survey. The pioneering use of panel data for marketing purposes was initiated to research “conditional trend analysis” to examine consumer buying behavior of different products [19]. Modern panels of Internet users have been successfully

used in studies on search behavior [60] and to measure the breadth of the search process by the online consideration set [54]. The use of online panel data in e-commerce research is clearly in its infancy based on the paucity of published research. The relevance of online panel data to e-commerce and digital marketing means that the potential for future research is significant.

Company size, in this case e-commerce platform size, constitutes the a priori criterion used to define strategic groups [102]. In online markets, size is defined by the number of unique visitors. An examination of the full range of SME e-commerce platforms using online panel data reveals patterns of usage and contributes to our understanding of the size of each website measured by the number of users, from which the share of online visitors is calculated. The sample can then be filtered by size to identify the most successful platforms in attracting visitors. Note that although it is not certain that every user is an SME user, it is reasonable to assume that most of the users are SME owners, managers, and entrepreneurs, because the platform selection process described earlier identified those specifically designed for SME owners, managers, and entrepreneurs. The other evidence to support this assumption is the detailed user-generated content from SMEs and the sales revenue models, where the products are only of interest to the SME community.

Based on the share of unique visitors, three categories were identified: significant (> 1 percent), negligible (0–1 percent), and zero (0 percent). The distribution is highly skewed and just a few platforms attract most of the visitors. It was clear that a high number of platforms have negligible or almost zero use. Therefore, only 25 percent of the websites were considered as significant and were the focus of the strategic group analysis. The detailed data for the strategic group analysis was taken from January 2012 until October 2014 and consists of 34 samples, each covering the use of the websites within a single month time period. The data are based on separate analyses of the U.S. and UK markets.

Web 2.0 Sophistication and Platform Content Analysis

To determine the Web 2.0 sophistication of the platforms, a categorization was done based on three Web 2.0 elements: user-generated content, interactivity, and additional technology. UGC refers to content made publicly available, created outside of professional practices [134]. A content analysis of the blog and forum sections from 2013 and 2014 resulted in a low, medium, or high amount of UGC in the website. Interactivity was assessed based on the presence of clickable images [26, 46], and interactive tools such as polls, web chats, and others such as tax calculations. The numbers of Web 2.0 technologies such as blogs, discussion forums, media sharing, wikis, reviews, and social networks per website were also measured. Additional technology refers to search, database, and matching technology within the website and the presence of the platform in major social media applications (i.e., Facebook, Twitter). Mobile responsive design is also part of this measure as it informs us of the sophistication of the website. The description of

the detailed measurement framework for Web 2.0 sophistication is given in Tables A1 and A2 and accompanying text in the online Appendix.

Cluster Analysis

The platforms were grouped using cluster analysis, according to Web 2.0 sophistication, value proposition, and revenue model maturity—these are the most important elements of the theoretical framework. The objective was to gain an overview of the market using the principal dimensions. Product-market scope is included in the results but was not useful as a clustering variable. Cluster analysis is a structure-discovering analytical method that has been employed to detect homogeneous strategic groups [129] and it provides a useful way to look at intergroup differences [118]. The structural asymmetries of competitors within industries of known rivalry characteristics can be replicated effectively using cluster analysis [63]. This type of analysis is therefore very useful for the study of market structures. A common way of clustering is the two-step cluster analysis [90]. This method first performs a hierarchical method to define the number of clusters and then uses the *k*-means procedure to form the clusters. The hierarchical cluster analysis is based on Euclidean distances, which allows hypotheses about the appropriate number of clusters. To validate the number of clusters several iterations can be made until one sees that there is a nonrandom tendency for groupings [91]. Once the candidate numbers of clusters are determined, a *k*-means cluster analysis searches for the best configuration of the groups placing similar observations together forming a cluster. Dendrograms, tree structures, are used to show the representation of the clusters and are the basis for the strategic groups.

As strategic groups are formed it is possible to integrate differences of the group member firms and their strategic choices into a set of patterns. The empirical nature of cluster and strategic group analysis is commonly associated with the generation of taxonomies [51, 63, 118]. While typologies are developed conceptually, a taxonomy begins empirically with the goal of classifying cases according to their measured similarity on observed variables [137]. That is, taxonomies are the result of inductive research [7].

Results

The SME E-Commerce Markets

ComScore tracks cross-visiting behavior across multiple websites. Therefore, if a user visits more than one of the SME e-commerce platforms, it is possible to calculate the number of unique visitors to the whole set of websites, without double or triple counting individual users who visit more than one platform. Table 3 shows the SME platform penetration in each market based on the total number of unique visitors to SME e-commerce platforms in each market.

Table 3. UK and U.S. Market Characteristics

Variable	United Kingdom	United States
Number of SMEs	5.2 M.	28.0 M.
SME users of social media platforms	1.0 M.	13.3 M.
SME social media platform penetration	19%	48%

Sources: Derived from comScore audience duplication report (2013), Business population estimates BIS, UK (2013), and SBA (2014).
Notes: M. means Million

It is based on the audience duplication report, which measures the total number of unique visitors for a set of websites within a specific time period, which in this study is one month. That is, it takes into account the fact that many SME users will visit two or more of the platforms in the data sample. The percentage of unique visitors as a proportion of SMEs within each market is then calculated by dividing the unduplicated unique visitors by the total number of SMEs in each market. This tells us the penetration of SME e-commerce platforms in the United States and UK, which is an important measure of overall usage within a market.

The overall size distribution of all of the UK SME e-commerce platforms is shown in Figure 2. The variation in unique visitors to individual websites for the 34 one-month samples was very low. For the purpose of measuring the online performance of each platform, the data were therefore averaged over the whole time period, which gave an average visitor count per month for each platform.

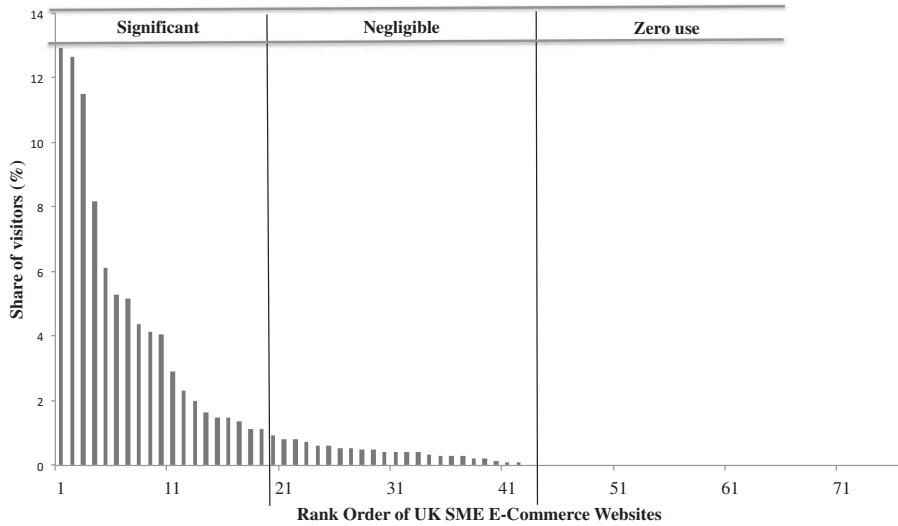


Figure 2. Rank Order Plot of 76 UK SME E-Commerce Platforms Measured by Share of Unique Visitors. Derived from key measures report from comScore (2012–2014)

There are three categories of websites: (1) significant websites that attract more than a 1 percent share of unique visitors; (2) negligible websites that attract some traffic but are relatively small; and (3) websites that attract very little or zero use. Detailed content analysis of the significant platforms evaluated the value proposition of each platform. The significant-size platforms in both markets are shown in detail in Figures 3 and 4. These companies are the focus of the business model and strategic group analyses.

Business Model Analysis

The combination of the measurements of value proposition, Web 2.0 sophistication, and revenue model yield important insights into the identification of strategic groups. The different value propositions were categorized into information only (score 1); information and networking (score 2); or information, networking, and sales (score 3), where categories 1, 2, and 3 correspond to each value proposition. In addition, all platforms were evaluated in terms of Web 2.0 sophistication. Table 4 shows the detailed results for all SME e-commerce platforms.

Almost all the websites adopt a broad-based scope—that is, they serve all types of SMEs. Only two websites have a focused strategy. The first is LandlordZone.co.uk, which is exclusively for landlords and property management agencies. Very successful, it is an example of how a focused strategy has enabled it to dominate a specific market segment. The second website is Onstartups.com, which is directed specifically at technology start-ups.

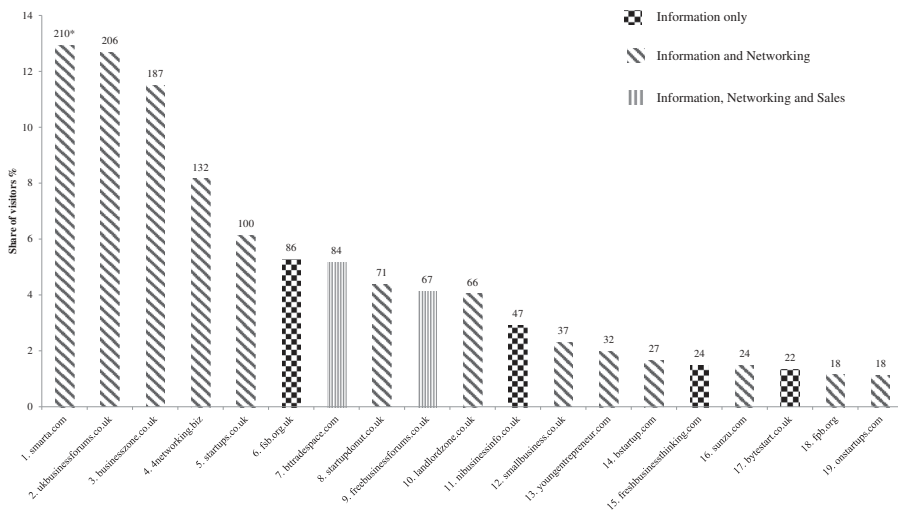


Figure 3. Size Distribution of SME Platforms in the UK, *Derived from key measures report from comScore (2012–2014)

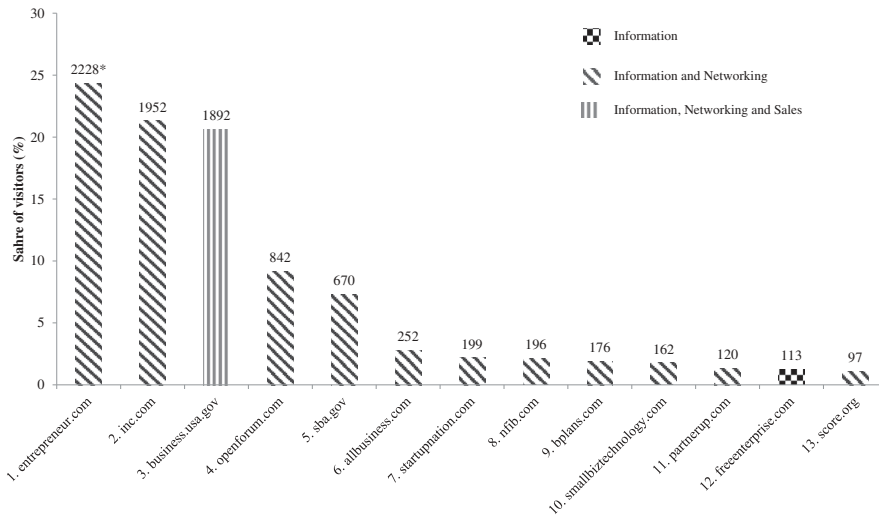


Figure 4. Size Distribution of SME Platforms in the United States* Derived from key measures report from comScore (2012–2014).

Almost all platforms use an advertising revenue model. There is also evidence of a subscription model but only on the smaller websites. A subscription only model appears to be dated and SME users are now more accustomed to free products or free trials that are supported by advertising revenue models [126]. Nine websites have a sales revenue model. That is, in addition to the electronic marketplaces that generate sales revenue from transaction fees, some platforms sell products directly to their SME customers. For example, Smarta.com sells a business tool for SMEs that is very successful, and Startups.co.uk facilitates fund-raising via crowd-funding, and charges a transaction fee for arranging loans for each new project. Both companies therefore have a sales revenue model in which transaction fees are considered part of a sales revenue model.

From the analysis it can be seen that advertising is a common revenue model for websites, regardless of value proposition and level of Web 2.0 sophistication. Some other patterns of revenue models are also worth noting. Companies with a high level of Web 2.0 sophistication also have more than one revenue model. The general pattern here is that platforms with a high degree of Web 2.0 sophistication appear to be good at using technology to manage content and communication, and are therefore able to exploit further sources of revenue. An evolutionary pattern seems a good explanation because most new websites start with an advertising revenue model and as they grow and attract more users, they are able to invest in technology and content. This in turn creates new sources of revenue such as subscriptions for privileged access to specialized content, and sales revenue that exploits a critical mass of visitors [47]. Further research, however, is required to look into the mechanisms of how revenue models change and business models evolve.

Websites with a subscription-only revenue model have a low degree of Web 2.0 sophistication. It is interesting to note that these organizations existed before they established a website, when a subscription model from members was used to fund their activities on behalf of a member group. This pre-website revenue model was carried over when these organizations moved online, whereby these companies exploited their existing database of members to create an immediate online user base. However, the findings suggest that they have failed to evolve and the emergence of new competitors that creatively exploit Web 2.0 technology and offer free content is threatening the online success of pre-website subscription organizations. This conclusion is supported by our results, which show that subscription-only websites are very small, despite having an initial advantage in the form of a preexisting customer database. However, these organizations may remain successful in their offline activities and further research is needed to uncover their strategic rationale and objectives.

For the strategic group analysis, the companies were grouped into three categories of revenue model maturity, based on the results shown in Table 4. These are low (score = 1), medium (score range 2–3), and high (score range 4–7).

Strategic Groups Based on Cluster Analysis

A two-step cluster analysis was performed based on Euclidean distances and standardized values [129]. After several iterations the results were found to be reliable and consistent. Figure 5 presents the dendrogram with the resulting strategic groups for the UK, which are mapped onto the taxonomy in Figure 6. The U.S. strategic group results are shown in Figures 7 and 8.

The taxonomy derived from the strategic group analysis in the UK is as follows:

SG 1—Information Laggards: There are four websites in this group and they attract 12 percent of all visitors. They now look old-fashioned, although they have some interactive features (e.g., clickable images, and presence on Facebook and other major consumer platforms). However, they have failed to make the transition to Web 2.0, or have simply elected to remain static websites that offer a basic information service only. Nibusinessinfo.co.uk is one of these websites and it offers a broad range of information to SMEs located in Northern Ireland.

SG 2—Basic Networking: This is a group that is making use of Web 2.0 to offer networking in addition to information, and attracts 16 percent of all visitors. Platforms in this group are characterized by a low to moderate sophistication in their use of Web 2.0. Businesszone.co.uk is part of this group. Although it has blogs and some interactive features, its use of Web 2.0 technology is limited. It works in partnership with UKbusinessforums, which is an advanced networking website. This partnership may explain the relatively low investment in Web 2.0 technology in its own website.

SG 3—Advanced Networking: Websites in this group have a value proposition similar to the Basic Networking group but are much more sophisticated

Table 4. Business Model for Leading SME E-Commerce Platforms.

Rank	SME E-commerce platform	Unique visitors (000)	Value proposition score	Business strategy			Web 2.0 sophistication score	
				Advertising	Revenue Model Subscription Sales	Revenue model score		Product-market scope
1	smarta.com	210	2	✓*	✓°	5	Broad-based	4
2	ukbusinessforums.co.uk	206	2	✓		1	Broad-based	5
3	businesszone.co.uk	187	2	✓		1	Broad-based	3
4	4networking.biz	132	2	✓		1	Broad-based	4
5	startups.co.uk	100	2	✓	✓°	5	Broad-based	4
6	fsb.org.uk	86	1		✓	2	Broad-based	1
7	bifradespace.com	84	3	✓	✓	7	Broad-based	5
8	startupdonut.co.uk	71	2	✓	✓°	5	Broad-based	3
9	freebusinessforums.co.uk	67	3	✓	✓	5	Broad-based	3
10	landlordzone.co.uk	66	2	✓	✓°	5	Broad-based	4
11	nibusinessinfo.co.uk	47	1	✓*		1	Focused	1
12	smallbusiness.co.uk	37	2	✓		1	Broad-based	3
13	youngentrepreneur.com	32	2	✓		1	Broad-based	3
14	bstartup.com	27	2	✓		1	Broad-based	3
15	freshbusinessthinking.com	24	1	✓		1	Broad-based	1
16	sunzu.com	24	2	✓	✓	4	Broad-based	4
17	bytestart.co.uk	22	1	✓		1	Broad-based	1
18	fpb.org	18	2		✓	2	Broad-based	2
19	onstartups.com	18	2	✓		1	Focused	5

(continues)

Table 4. Continued

Rank	SME E-commerce platform	Unique visitors (000)	Value proposition score	Business strategy			Web 2.0 sophistication score	
				Advertising	Revenue Model Subscription Sales	Revenue model score		Product-market scope
I	entrepreneur.com	2,228	2	✓		1	Broad-based	3
II	inc.com	1,952	2	✓	✓	4	Broad-based	3
III	business.usa.gov	1,892	3	✓*	✓	5	Broad-based	3
IV	openforum.com	842	2	✓*	✓°	5	Broad-based	5
V	sba.gov	670	2	✓*		1	Broad-based	4
VI	allbusiness.com	252	2	✓		1	Broad-based	3
VII	startuptnation.com	199	2	✓		1	Broad-based	4
VIII	nfib.com	196	2	✓		1	Broad-based	3
IX	bplans.com	176	2	✓	✓°	5	Broad-based	5
X	smallbiztechnology.com	162	2	✓		1	Focused	4
XI	partnerup.com	120	2	✓*		1	Broad-based	4
XII	freenterprise.com	113	1	✓*		1	Broad-based	2
XIII	score.org	97	2	✓*		1	Broad-based	3

Sources: ComScore 2012-2014, company websites, and personal analysis.

*Sponsored by government/nonprofit agency/group.

°Sell a product but have no marketplace.

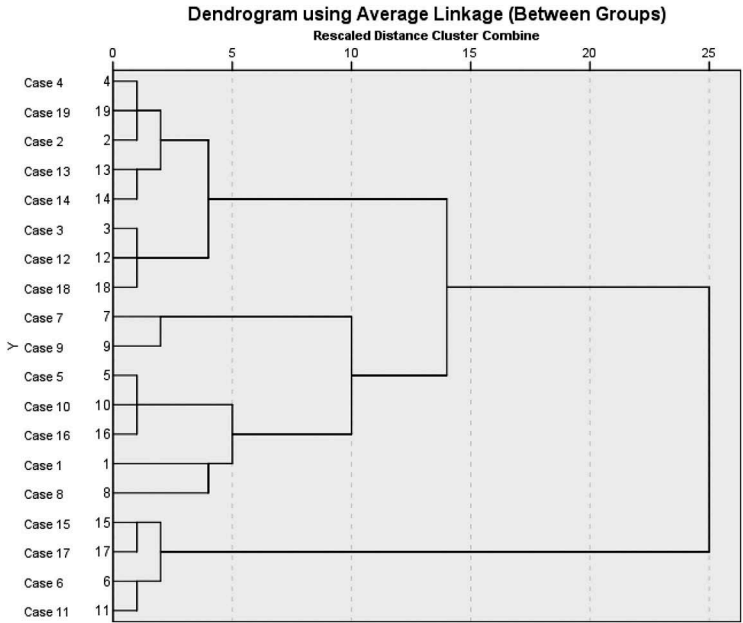


Figure 5. Cluster Analysis of SME E-Commerce Platforms in the United Kingdom

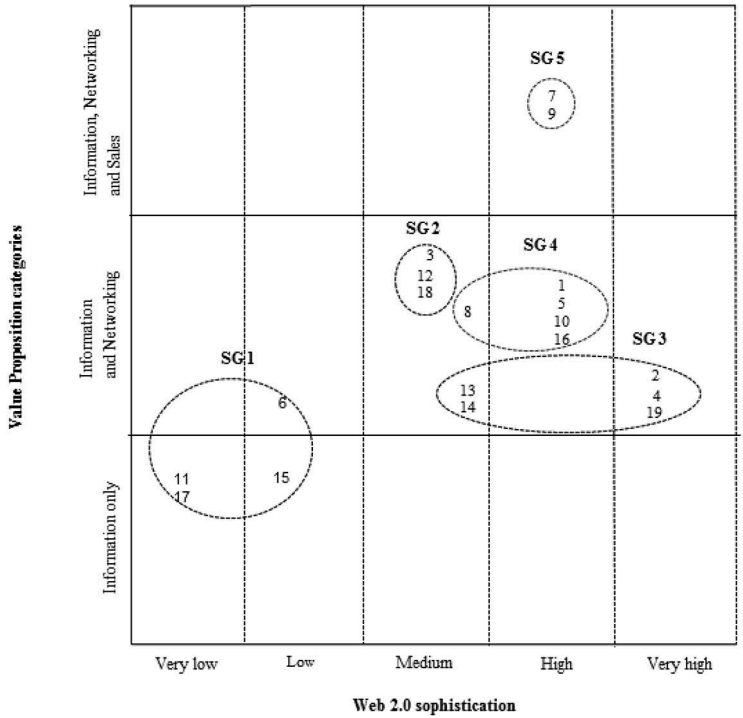


Figure 6. Identification of Strategic Groups of SME E-Commerce Platforms in the United Kingdom

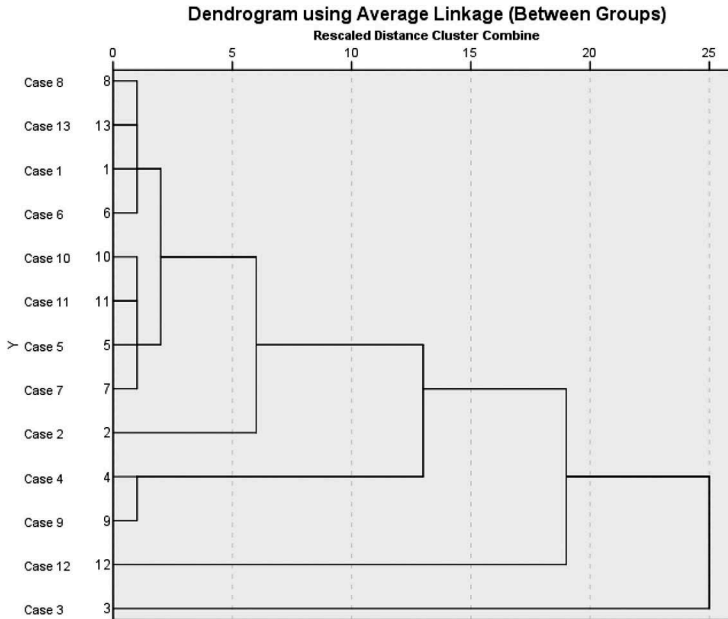


Figure 7. Cluster Analysis of SME E-Commerce Platforms in the United States

in their use of Web 2.0. UKbusinessforums is a good example of this group due to its sophisticated use of a variety of social media applications in its website. This group has five members and attracts 30 percent of all visitors.

SG 4—Advanced Networking Mature: this group is formed by platforms that have a high use of Web 2.0 technology, use a variety of revenue models, and attract 33 percent of all visitors. Among this group are Smarta, Startups, LandlordZone, and Sunzu. They generate sales from products, for example, business software and fee-based services such as expert advice. Sunzu offers a variety of products, is rich in services like web analytics, and works through a subscription scheme. The case of LandlordZone is a particularly interesting example because it is the only large website that pursues a focused product-market scope and it is very successful at generating revenue from paid advertising through its media pack, which combines online advertising and e-mail campaigns. StartupDonut is also part of this group and offers the “own version of the Donut” product, which is its major source of revenue.

SG 5—Social Media Markets: This group has a medium to very high level of Web 2.0 sophistication and the websites include electronic market functionality. An example is Freebusinessforums.co.uk, which has a small marketplace for its users. The smallest platform in this group is BTTradespace.co.uk, which was very sophisticated in its use of Web 2.0 technology. However, the website did not attract sufficient users and its sponsor, BT, closed it after the research data were captured.

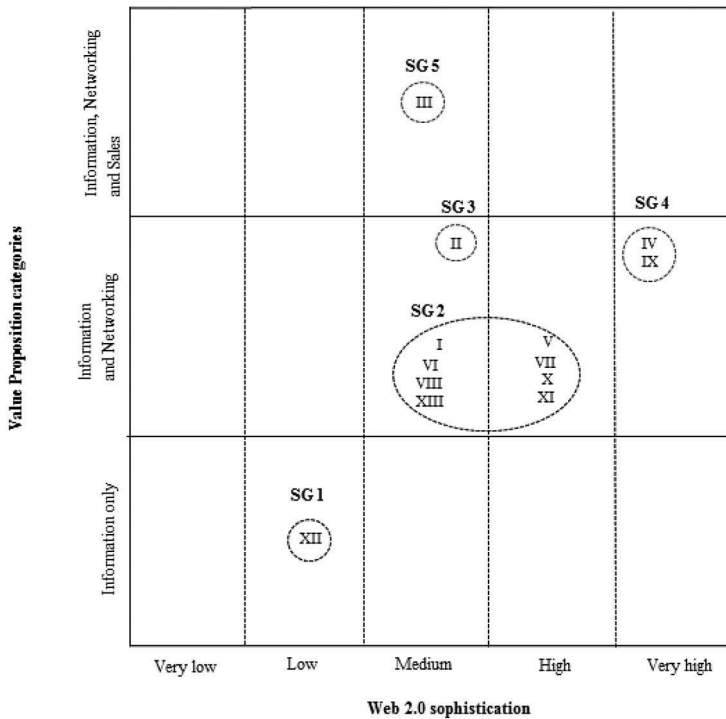


Figure 8. Identification of Strategic Groups of SME E-Commerce Platforms in the United States

In the United States and using the same taxonomy, the Basic Networking group (SG2) is the largest group in terms of the number of websites and attracts 44 percent of all visitors. Platforms like Entrepreneur.com already had an established customer base and a successful business model that transferred relatively easily to the Internet. The effectiveness of Entrepreneur.com's business model is threatened in the new environment, because there are more technologically advanced websites competing, could pose a significant threat to their future success. Together, the Advanced Networking (SG 3) and Advanced Networking Mature (SG4) account for 33 percent of visitors. SG4 includes platforms such as AMEX Openforum.com and Bplans.com, which sell products in addition to using an advertising revenue model.

Tables 5 and 6 summarize the different strategic groups for the UK and the United States.

A value proposition is considered "low" if a platform only offers information. The proposition is "medium" if it offers networking in addition to information. A high value proposition is one that enables sales within the platform besides offering content and networking functionalities. To simplify the analysis, Tables 5 and 6 refer to a low level of Web 2.0 sophistication as scores 1 and 2 from the Web 2.0 scale. A platform that scores 3 has a medium level of Web 2.0 sophistication. Platforms with scores of 4 and 5 have a high level of Web 2.0 sophistication.

Table 5. Strategic Groups of SME E-Commerce Platforms in the UK and Business Model Characteristics

Strategic group	Share of visitors	E-commerce SME platforms	Value proposition	Web 2.0 sophistication	Revenue model maturity
SG1	12%	6, 11, 15, 17	Low	Low	Low/Medium
SG2	16%	3, 12, 18	Medium	Medium	Low/Medium
SG3	30%	2, 4, 13, 14, 19	Medium	Medium/High	Low
SG4	33%	1, 5, 8, 10, 16	Medium	Medium/High	High
SG5	9%	7, 9	High	High	High

Sources: ComScore key measures report (2012-2014), company websites, and strategic group analysis.

Table 6. Strategic Groups of SME E-Commerce Platforms in the United States and Business Model Characteristics

Strategic group	Share of visitors	SME platforms	Value proposition	Web 2.0 sophistication	Revenue model maturity
SG1	1%	XII	Low	Low	Low
SG2	44%	I, V, VI, VII, VIII, X, XI, XIII	Medium	Medium/High	Low
SG3	22%	II	Medium	Medium	High
SG4	11%	IV, IX	Medium	High	High
SG5	21%	III	High	Medium	High

Source: ComScore key measures report (2012-2014), company websites, and strategic group analysis.

The strategic groups are broadly similar in the UK and the United States, and have slight differences in sources of revenue. Overall, the U. S. market is more mature than the UK market based on the robust measure of SME e-commerce platform penetration. Also, despite the UK platforms making slightly better use of Web 2.0, significantly more SME users in the United States have adopted SME platforms. The American tradition of entrepreneurship [112] could explain these results. It also implies that U.S. SMEs are smarter in terms of their use of technology than those in the UK.

It may be relevant here that in the United States, the government and nonprofit agencies sponsor many more platforms than in the UK. This investment into existing platforms may inhibit the formation of new platforms and innovation from new entrants. That is, there is not the same pressure to invest and evolve in a situation where the funding for the website is perceived to be secure. The importance of trust may explain the small number of electronic marketplaces found in both markets [75]. Some of the electronic markets may also have exited through acquisitions by larger marketplaces. The lack of sales functionality may also be attributed to a

lack of sales and marketing know-how, knowledge of regulatory processes, established distribution channels, lack of specific technology know-how, and experienced management [29].

Discussion and Conclusions

SME e-commerce platforms represent a distinctive research area that has been neglected in the academic literature, despite the area's importance to innovation and entrepreneurship and to the growth of the economy. Business model theory was an effective approach to conceptualize these platforms and made it possible to identify distinctive strategic groups of competitors based on the theoretical constructs of Web 2.0 sophistication, value proposition, and revenue model maturity. Five distinctive strategic groups were identified using cluster analysis techniques. The strategic groups provide an overview of the competitive landscape as well as the basis for further research propositions. The range and variety of SME e-commerce platforms indicate that the market for social media use by SMEs is in an earlier stage of development than the use of Web 2.0 technology in consumer markets. The number and variety of platforms are likely to decrease through a process of continuing rapid growth in the market, mergers, and acquisitions [29]. Network effects may also start to play a more prominent role: as an SME platform attracts more visitors, it is able to invest in better information content and make more effective use of social media through increased investment in Web 2.0 technology. This in turn will make it more attractive to new users and also retain existing SME customers [35], leading to a positive cycle of growth in which a small number of platforms will become more successful at the expense of smaller platforms.

Theoretical Contributions

The lack of market-level research into social media platforms meant that there was little empirical evidence of how useful business model and strategic group theories are in conceptualizing and modeling the competitive landscape. The main theoretical contributions were to conceptualize SME e-commerce platforms as business models and then to apply the ideas at the level of the market, and analyze the largest competitors using strategic group theory. This required a combination of innovations, in particular the development of measurement frameworks for Web 2.0, the use of online panel data to measure the size distribution of all competitors and the use of cluster analysis techniques to evaluate the business models. This is a first attempt to apply business model theory to all the major competitors within a market of social media platforms and then to use cluster analysis to identify strategic groups of platforms. This constitutes a novel and pragmatic approach that has generated a taxonomy of strategic groups, which has face validity to practicing managers and makes sense of what would otherwise be very difficult and complex online market data. The approach is in line with recent

ideas on taxonomy development that combine theoretical and empirical approaches [93]. The business model constructs helped to map the landscape of the SME e-commerce platform market and to highlight the relevance of Web 2.0 technology to the value proposition, revenue model, and performance of each SME e-commerce platform. The revenue model construct identified the importance of additional sources of revenue other than just advertising, which is in line with the idea that new revenue models are needed for survival as users become accustomed to free products and services [126].

Empirical Contribution

The mapping out of the competitive landscape using a combination of online panel data and content analysis provides indicative support for the validity and usefulness of the theoretical contributions. The empirical results are the first large-scale, market-level evaluations of SME e-commerce platform markets in the UK and United States. A total sample of 144 SME e-commerce platforms was taken, of which 32 platforms were studied in detail.

New Research Propositions

The lack of prior research on the nature of competition and strategic analysis of SME e-commerce platforms, particularly at the market level, together with the results from this study, lead to some possible propositions to stimulate future research. The propositions represent plausible future developments based on our findings.

Proposition 1. As platforms evolve and mature, the use of Web 2.0 becomes more sophisticated and the social networking and sales features of the SME e-commerce platforms become more important. When this happens the economic network effects will play a more prominent role in the evolution of the market landscape of SME e-commerce platforms [36]. This will be evidenced by fast growth in a small number of platforms to the detriment of those that fail to attract visitors. That is, the SME e-commerce platform market in a particular country will become more concentrated. A corollary of P1 is that an individual platform must have a critical mass of users, a high level of Web 2.0 sophistication, and comprehensive information content in order to take advantage of the expected network effects. This suggests that there is likely to be a series of mergers and acquisitions in an attempt to build critical mass as quickly as possible and also a high level of failure for those that fail to adapt.

Proposition 2. SME e-commerce platforms that are information laggards will be poorly placed to take advantage of network effects

because of the technical and competitive barriers to moving from an information laggard to a networking strategic group [2, 50]. Those information laggards with independent funding from trade bodies or government organizations will persist, but gradually become less important unless they become more proactive by either investing in Web 2.0 or merging with more advanced partners. That is, information laggard platforms can exploit their strong position in terms of their information content and large user base with partners that already have sophisticated Web 2.0 technology (e.g., advanced networking platforms).

Proposition 3. The strong position of AMEX's open forum platform, in the advanced networking mature strategic group in the United States, and the nascent interest from UK banks in SME e-commerce platforms suggest that large companies, which have a strong commercial interest in SME markets, may influence the development of SME e-commerce platform markets. This will be evident from the launch of SME e-commerce platforms that are sponsored by banks or technology companies. These platforms are likely to launch in the advanced networking strategic group because they will use advanced Web 2.0 to quickly attract SMEs and offer a range of commercial services. There may also be direct investment in existing successful platforms.

Proposition 4. The results show that the technology adopted by the platform is an important element that facilitates revenue model maturity. Those platforms with mature revenue models are all examples of platforms with relatively high unique visitors—that is, they are ranked among the top five in each market, with the exception of BTTradespace, which eventually closed. This suggests that the most successful companies that attract users with interesting and relevant content continue to develop and monetize their online users by selling additional products and services. A qualitative study is needed to test this proposition and provide more insights into the mechanisms of evolutionary changes in technology, revenue streams, and value proposition.

Managerial Implications

For SMEs, the results demonstrate that there is a wide range of SME e-commerce platforms and that these are better understood by viewing them in their strategic groups and by taking into account their size as an important measure of online success. For SME users, the size of an SME e-commerce platform determines the value of the networking and sales opportunities.

For the SME e-commerce platform owners, the analysis reveals the identification of strategic grouping of competitors. This is important because it gives them an overview of the competitive landscape and allows them to distinguish between significant and small or negligible competitors, and then to view the significant competitor in terms of its position within a specific strategic group. This allows them to focus their strategy on competing more effectively with competitors within the same strategic group, or to consider the potential benefits of transitioning to a new strategic group. Platform owners should also consider the importance of strategic group characteristics such as high Web 2.0 sophistication, large numbers of users, and mature revenue streams, and consider their potential to act as competitive barriers to new entrants, either to the market as a whole or from other strategic groups.

The results also demonstrate the impact and value of Web 2.0 sophistication on online success, and the importance of networking and sales functionality to attract and retain customers and to generate more revenue streams. For a bank with a large number of existing SME customers, there appears to be significant potential to exploit its SME customer database and combine it with a platform in order to encourage interaction between existing customers and also to attract new SME customers through information, networking, and sales offers. AMEX has demonstrated the success of this approach with its Openforum in the United States, and the UK banks are not as advanced. Government agencies can also increase awareness of these websites to SMEs and provide them with a map of the landscape so that SMEs can better select the most useful e-commerce platform(s) for their own particular requirements.

Limitations and Further Research

Further research opportunities might seek to explain the differences in online performance for websites within the same strategic groups due to other factors, in particular the nature and process of the value creation process itself [58, 59], and also user acquisition and retention strategies. Another important area is to understand the dynamics of growth and change, especially the transition from one strategic group to another one and the role of competitive barriers to impede this transition [50]. There is also the important question of why many SMEs are not making use of these very rich sources of information, networking, and sales opportunities. These research questions are likely to require more detailed case study research with the managers of individual platforms.

Further qualitative research could also look into network effects generated in the platform [36]. That is, if users are attracted by the technology provided then this increases the number of users in the platform, and the value of the platform therefore increases for the advertiser. This type of analysis could also look into the offline history of the websites in order to understand their revenue models better. Another important factor that is not explored in this study is the regulatory environment—for example, in government procurement—which may influence how these platforms are used and possibly explain some of the differences in online penetration between the UK and the U.S. markets.

A limitation of the research was that it was not possible to determine the strategic intent of the management teams of the platforms because this study was based on panel data and the content of the platforms. It would be necessary to use qualitative methods to uncover the detailed mechanisms and nature of the value creation process for individual platforms. Sampling was limited by the possibility of omitting a website. However, this was addressed by implementing a data saturation point assumption [43], which is an accepted and widely used statistical technique. The period of time studied was potentially a limitation in a fast developing market, but taking a long time period of three years mitigated this issue. Within the sample time period, the results are consistent, with relatively little variability of unique visitors, which lends confidence to the measurement of online size. Another sampling limitation was that the researchers could not be certain that all viewers of the SME platforms were SME users; for example, they could have been government users, individuals, or researchers. However, this is unlikely to be significant and, in any case, the error will apply equally to all websites in the sample. In addition, all the websites are designed to encourage entrepreneurship so individuals looking at content could be considered as “potential” SME business owners. The assumption is therefore that most of the visitors are entrepreneurs, SME owners, or individuals exploring new business ideas.

Conclusions

SME social media platforms are strategically important to the U.S. and UK economies because of their role in facilitating knowledge exchange, networking, and sales between SME and their economic partners. There is significant potential for increased usage of these platforms, particularly in the UK, and government policy should encourage their continued development and uptake, possibly in conjunction with banks and technology companies that have vested interests in the success and growth of new businesses. The novel use of online panel data combined with the detailed analysis and evaluation of individual platforms using business model theory made it possible to successfully apply strategic group theory in a new business context—that is, a very large number of competing platforms in the United States and UK. The results have salient theoretical and managerial implications, and the propositions are intended to stimulate further discussion and debate about the likely future direction of this topic. The propositions could also be used to guide the decision making of managers involved in the strategic development of SME social media platforms.

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SUPPLEMENTAL FILE

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