

Web 2.0 and micro-businesses: an exploratory investigation

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Abstract

Purpose: The paper reports from an exploratory study into how small businesses use Web 2.0 information and communication technologies (ICT) to work collaboratively with other small businesses. The study had two aims: to investigate the benefits available from the use of Web 2.0 in small business collaborations, and to characterize the different types of such online collaborations.

Design/methodology/approach: The research uses a qualitative case study methodology based on semi-structured interviews with the owner-managers of twelve UK-based small companies in the business services sector, who are early adopters of Web 2.0 technologies.

Findings: Benefits from the use of Web 2.0 are categorised as lifestyle benefits, internal operational efficiency, enhanced capability, external communications and enhanced service offerings. A 2x2 framework is developed to categorise small business collaborations using the dimensions of the basis for inter-organizational collaboration (control vs. cooperation) and the level of Web 2.0 ICT use (simple vs. sophisticated).

Research limitations/implications: A small number of firms of similar size, sector and location were studied, which limits generalisability. Nonetheless, the results offer a pointer to the likely future use of Web 2.0 tools by other small businesses.

Practical implications: The research provides evidence of the attraction and potential of Web 2.0 for collaborations between small businesses.

Originality/value: The paper is one of the first to report on use of Web 2.0 ICT in collaborative working between small businesses. It will be of interest to those seeking a better understanding of the potential of Web 2.0 in the small business community.

Keywords: Small business networks, Web 2.0, information and communications technology, collaboration.

Introduction

Web 2.0 is the term coined by O'Reilly (2005), which has come to be used to describe a wide range of Internet-based information and communication technology (ICT) applications. Web 2.0 encompasses a heterogeneity of applications including social networking sites, wikis, blogs, podcasts, instant messaging, discussion forums, audio and video conferencing, group diaries and address books, hosted virtual offices, collaborative whiteboards and presentation systems. Management consultants McKinsey highlight how businesses around the globe are now starting to make extensive use of Web 2.0 'both within and outside their walls – to forge closer links with customers and suppliers and to engage employees more successfully' (Bughin *et al.*, 2008). Large businesses are likely to have the necessary resources and expertise to enable them to successfully adopt the Web 2.0 tools necessary to work more collaboratively. However, many small businesses also operate collaboratively, working closely with other small businesses, seeking complementary resources and expertise, in order to overcome their individual paucities of resources and expertise (Szarka, 1990; DTI, 2000). Such collaborations have long been a feature of many small business communities (Birley *et al.*, 1991; Curran *et al.*, 1994). Indeed, Brown and Locket (2004) have criticised much of the small business literature for neglecting the fact that small firms often tend to be part of formal

or informal networks. Network-based collaboration is a particular characteristic of some industries (e.g. construction, film production and the performing arts). Such ventures typically occur in tightly-knit industries, often in a specific geographic location, where potential participants are well-known to each other. However, the ICTs of Web 2.0 potentially offer all firms the means of overcoming the limitations of distance. Online communication offers the prospect of replacing physical proximity with virtual interaction and even intimacy as evidenced by the popularity of websites such as Facebook and LinkedIn. Many of the tools of Web 2.0 are cheap to acquire and operate and require little technical expertise. There is increasing anecdotal evidence that some small businesses have become early adopters of Web 2.0 and are developing new approaches to collaborative working with the aim of improving their ability to serve their customers. However, to date this emerging phenomenon has been little studied.

This paper reports findings from an exploratory study into how small businesses that are early adopters of Web 2.0 are using its tools to work collaboratively with other small businesses.

The aims of the research are twofold:

- a. To investigate and better understand the benefits that small businesses can gain from the use of the emerging tools of Web 2.0 for networking.
- b. To characterize and catalogue the different types of online collaborations operating between small businesses.

In pursuit of these aims the owner-managers of twelve small businesses who have been making extensive use of Web 2.0 to collaborate with other small businesses were interviewed. These companies might more accurately be described as micro-businesses as they employ less than ten employees (EU, 2003). The interviews were used as the basis for the case studies reported in this paper. The paper is structured as follows. This introduction is followed by a review of relevant literature, undertaken in order to identify those issues most germane to an investigation into use of ICT in small business collaborative working. These issues are used as the focus of the empirical research. Details of the research methodology used for the investigation are outlined. The findings from each of the twelve case studies are reported and discussed. Finally, conclusions are drawn, the limitations of the research considered and recommendations made for future research.

Literature

Web 2.0 can be seen as a qualitative shift away from the static 'Web 1.0', coming closer to Berners-Lee's original intentions for what he now calls 'the semantic web' (Ankolekar *et al.*, 2008). Web 2.0 offers the potential for massively increased interactivity that can facilitate a high degree of 'communication, cooperation, collaboration and connection' between users (Cook, 2008). Realising the benefits available from Web 2.0 requires businesses to qualitatively scale up their collaboration activities both internally and externally. Technically, at least, this should be easily done through use of some of the many inexpensive Web 2.0 tools that are available. These can facilitate collaborative working both within business organizations (Raman, 2006; Wagner, 2006), between business organizations (Salam *et al.*, 2008) and as a means of getting closer to suppliers and customers (Helms *et al.*, 2008).

However, the term 'Web 2.0' is not without its detractors. From a purely technical perspective, the term can be seen as misleading (Anderson, 2007) given its implied dichotomy between earlier and later forms of underpinning Web ICT, prompting Millard and Ross (2006) to question whether Web 2.0 is 'hypertext by any other name'. Others such as Constantinides and Fountain (2007) argue that there is little clarity as to the exact nature of

Web 2.0 and still no generally accepted definition of the term. Nevertheless this does not stop them offering their own definition: '*Web 2.0 is a collection of open-source, interactive and user controlled online applications expanding the experiences, knowledge and market power of the users as participants in business and social processes. Web 2.0 applications support the creation of informal users' networks facilitating the flow of ideas and knowledge by allowing the efficient generation, dissemination, sharing and editing/refining of informational content*' (Constantinides and Fountain, 2007: 232-233)

Small businesses are vital to the economy of any country, as they are usually a significant source of employment, growth and innovation (OECD, 2004; European Commission, 2002). Micro-businesses comprise the overwhelming majority of small businesses, with, for example, over 83% of the UK's 1,238,000 private sector enterprises with employees falling into this category in 2008 (BIS, 2009). However, by their nature, small businesses, and especially micro-businesses, are characterized by a paucity of resources and expertise (Street and Cameron, 2007; Wymer and Regan, 2005; Poon and Swatman, 1999; Quayle, 2004; Levy and Powell, 2003; Simpson and Docherty, 2004; Fillis *et al.*, 2004), which can make it difficult for them to compete and establish any kind of competitive advantage. There has been increasing interest in inter-organizational collaborations of all kinds in recent years (e.g. Nalebuff and Brandenburger, 1996; Khanna *et al.*, 1998; Doz and Hamel, 1998). In particular, working collaboratively with other small businesses has been shown to be a way of overcoming many of the disadvantages inherent in small businesses (Dubini and Aldrich, 1991; Gomes-Casseres, 1997; Miller *et al.*, 2007; Adebajo and Michaelides, 2010).

Despite its emerging potential, the use of Web 2.0 to facilitate collaboration in the small business sector seems to have been little researched. Indeed, more generally the implications of Web 2.0 for small businesses have been under researched (Stocker *et al.*, 2007). Matlay and Westhead (2005) offer a rare example with their study into what they term 'virtual teams' within the European Tourism and Hospitality Industry (Schegg *et al.* (2008) have also studied the use of Web 2.0 in the same sector.) Whilst the impact of ICT on teamworking has been extensively researched (e.g. Lurey and Raisinghani, 2001), this has been largely within the context of large organizations. Within the small business sector, research has been mainly confined to the issue of ICT adoption, particularly the identification of the factors that support or inhibit successful adoption (Parker and Castleman, 2007). More recently researchers have called for further research into the potential use of Web 2.0 technologies within small businesses not only because of the inherent capacity within these technologies for social and business networking but also because of the specific relational habits of small firms that tend to rely significantly on intimate personal contacts (Bettiol *et al.*, 2008).

Web 2.0 benefits for small businesses

Web 2.0, with its social, technological and business dimensions (Stocker *et al.*, 2007), seems to offer a number of benefits to small businesses. It can facilitate much looser and more flexible forms of collaboration and communication between networks of small businesses. Dittrich *et al.* (2007) have pointed to the use of inter-organizational networks as a means of enhancing organizational capabilities. Although much of the work on inter-organizational relationships has been focussed on large firms, there is a growing research literature on small business collaborations (Hanna and Walsh, 2008; Bagella and Becchetti, 2002; Dhillon *et al.*, 2009). Such networks can also provide small businesses with a broader resource-base to innovate and compete in an increasingly competitive global environment (Lindermann *et al.*, 2009). The relatively intuitive nature of Web 2.0 also means that users and customers are

more likely to actively participate in the value creating activities that occur in a more open firm environment (Nakki and Antikainen, 2008).

Web 2.0 has the potential for small businesses to mutually organise and share collective business intelligence whether it be customer or supplier based (Hoegg *et al.*, 2006, Sigala and Marinidis, 2009). More colloquially, as quoted in Birkinshaw and Crainer (2009, p.21), Web 2.0 has the potential for leveraging the power of the network to business ends. Importantly for small businesses, Web 2.0 offers the prospect of not having to be geographically co-located in order to gain the benefits available from being part of a network (Ritchie and Brindley, 2000, 2005). This should offer the prospect of a network being able to be more efficient by reducing the costs of communication and coordination and more effective by being able to respond faster and with greater flexibility. Web 2.0 also seems to offer the prospective of replacing geographic co-location by mimicking real world intimacy in a virtual domain. It offers the opportunity for firms to collaborate in a much more cost-effective and engaging “open, trusting, service-based online society” as opposed to an often expensive, “closed, data-rich, application-driven Internet society” (Adebanjo and Michaelides, 2010, p.240). Web 2.0 tools and technologies offer interactive and more bottom-up, participatory methods of collaboration compared to previous waves of technology such as customer relationship management or even enterprise applications that were complex and costly (Chui *et al.*, 2009). These characteristics of Web 2.0 may be most appealing to cost-conscious small firms that rely on personal interactions and relationships in conducting business. Web 2.0 then presents unique opportunities for small firms to identify other firms for collaboration by acting as suppliers or customers more quickly and accurately than by using conventional approaches (Adebanjo and Michaelides, 2010).

Hinchcliffe (2010)’s discussion offers a useful summary of the potential benefits available from Web 2.0. He distinguishes four ways in which Web 2.0 might be used to create business value, namely cost-reduction, transformation, growth and innovation. This suggests a possible categorisation for the benefits available from Web 2.0:

1. *Improved internal operational efficiency:* Web 2.0 offers the ability to drive down operating costs and improve productivity, both individually and collectively.
2. *Enhanced capabilities:* Web 2.0 helps transform existing ways of working through its ability to enable workers to connect with sources of knowledge and expertise both inside and outside of traditional organisational boundaries.
3. *More effective external communications:* Web 2.0 facilitates growth through its ability to improve communication with customers, existing and potential, enabling their requirements to be better understood and with supplier, collaborators and peers enabling those requirements to be better addressed.
4. *Customized service offerings:* Web 2.0 supports innovation through its ability to enable businesses to rapidly offer new services tailored to meet the specific needs of customers.

Whilst these four benefits may be available to businesses of any size, it is important to remember that small businesses have very different characteristics than their large counterparts. As Welsh and White (1981: 18) put it ‘A small business is not a little big business’, sentiments which are echoed by Quayle (2004) and McGregor and Vrazalic (2005). In particular, the ambition of the owner-manager is central to the functioning of most small businesses (Ritchie and Brindley, 2005). Many small businesses are ‘lifestyle businesses’, being based on a business model in which owner-managers value their independence and freedom. Working within a community of equals is likely to be much

more appealing than supplying the needs of large impersonal and invariably highly demanding large organizations that often seek to control many aspects of their suppliers' activities (Arend, 2006; Harris and Rae, 2009). As such, operating in small business networks is likely to be particularly attractive for many owner-managers (Kingsley and Malecki, 2004). Consequently, for small business owners, especially micro-businesses, a fifth benefit of the use of Web 2.0 may also be lifestyle considerations of work/life balance.

Online small business collaborations

The extent to which a small business can gain the benefits available from Web 2.0 seems likely to depend on both the types of technology it chooses to deploy and how it seeks to utilise that technology.

Choice of technology: simple vs. sophisticated

As Chua *et al.* (2009) notes, Web 2.0 encompasses a range of different technologies and applications. As such, small businesses need to make a choice about the level of sophistication of the technology that they wish to adopt, and decisions taken across the small business sector in this respect are not likely to be homogenous. The owner-manager is thus particularly influential in technology adoption decisions in small businesses (Ching and Ellis, 2004, Lindermann *et al.*, 2009). There are many small businesses that do possess a significant level of expertise, and not only those that operate in high technology sectors such as web developers, software development, and other computer-related industries. Although as Santos *et al.* (2008) point out, small businesses often lack the expertise to create a structured approach to adoption decisions creating a barrier to Web 2.0 investment.

Some applications are fairly basic, generic and simple to operate (e.g. networking and blogging). Web 2.0 tools can also be overlaid on existing technology infrastructure (Chui *et al.*, 2009) and their relatively simple nature means that owner-managers can quickly learn to engage with them. Web 2.0 provides a flexible, user-friendly and less intimidating forum for collaborative learning among users and/or networks of firms (Attwell; Hamburg *et al.*, 2007). In this sense, e-learning strategies that use Web 2.0 to deliver content might also be more appealing to a small business audience who are often unable to take time off to develop information technology capabilities via face-to-face training sessions (Wang, 2009). Web 2.0 tools also offer small firms and their networks a user friendly digital environment for sharing information and expertise in a way that emphasises informal, personal connections and non-standardised procedures as opposed to more conventional knowledge management systems that are often more rigid as well as more expensive to implement and maintain (Bibikas *et al.*, 2008; Nunes *et al.*, 2006).

However, other applications can be highly sophisticated, particularly when they are proprietary and designed for a specific business purpose (e.g. those associated with ERP systems). In such cases, they can require high levels of ICT expertise to operate and maintain. Owner-managers are sometimes depicted as technological laggards who possess little expertise or aptitude in the use of the latest ICT (Hussin *et al.*, 2002) but in terms of Web 2.0 investment, De Saulles' (2008) survey found that new media and Internet small businesses, especially B2B businesses, made more active use of Web technologies compared to other sectors in the South East of England. These issues of technological choice and expertise within the business will be examined in depth within our case studies.

Utilisation of technology: control vs. collaboration

Organizational theorists argue that the basis of collaboration between firms lies between the two extremes of markets and hierarchies (Thorelli, 1986; Ouchi, 1980). Whilst hierarchies tend to operate on the basis of intra-organizational control, markets are more reliant on inter-organizational co-operation. Thus, it might be expected that the operation of inter-organizational networks could similarly operate somewhere on a continuum between the extremes of control and co-operation. Inter-organizational networks can provide economic (Jarillo, 1988) and social (Granovetter, 1982) benefits. As such, public policy makers have sought to facilitate and support the establishment of small business networks through the use of 'network brokers' (Pyke, 1994). However, small businesses themselves seem to prefer to self-organise (Hanna and Walsh, 2008). Based on co-operation and consensus between members and relying on loyalty, reciprocity and trust (Thompson, 2003), inter-organizational networks offer an alternative to the use of either hierarchies or markets (Williamson, 1975), although Mudambi *et al.*'s (2004) study of small engineering businesses in the UK determined that most did not attempt to initiate co-operative relationships. Web 2.0 tools have the potential to facilitate increases in both the efficiency and effectiveness of collaborations within networks of small firms and their partners and customers (Mannonen and Runonen, 2008). However, so far it is unclear how the use of Web 2.0 influences the nature of this type of network and our empirical research will investigate this issue in more depth.

In summary, the use of Web 2.0 in small businesses is an under researched area. In particular, there is a need to investigate the nature of any benefits available to small businesses from the use of Web 2.0. There is also a need to investigate the ICT choices made by small businesses that collaborate using Web 2.0 and the basis of the collaborating mechanisms used within such networks. Micro-businesses, as a group within the small business community, have a potential for high growth and may become significant sources of employment. They seem to have the potential to gain significantly from the adoption of Web 2.0 technology. Some micro-businesses display a tendency to behave as 'early adopters' (Davis, 1989) of new technologies. Studying how such companies learn to use the new technologies associated with Web 2.0 can provide valuable insights into their likely future importance (Robertson *et al.*, 2007).

Research Methodology

The research uses a qualitative case study methodology. This seemed appropriate given its aim of exploring the application of a new technology. Initial studies such as this, are perhaps unavoidably exploratory and descriptive in nature. As Christensen and Sundahl (2001: 1) note, at the earliest stages of research 'the best that researchers can do is to observe phenomena, and to carefully describe and record what they see'. By case study we mean 'an empirical investigation of a particular contemporary phenomenon within its real-life context' (Robson, 1993: 5). As Meredith *et al.* (1989) point out, the case study method is particularly good for descriptive or exploratory research. Where there is a paucity of empirical research and existing theory seems inadequate, case studies can offer a route to theory building (Eisenhardt, 1989; Meredith, 1998).

The companies studied were all small businesses known by the researchers to be early adopters of Web 2.0 technologies for collaborative working. This group of companies were not intended to be a sample in any statistical sense, nor were they intended to be 'typical' of

UK small businesses in some way. This would be an entirely impractical task using case study research, for as Martin and Matlay (2001) point out, the small business sector is inherently diverse. The purpose of case study selection here is to hold a lens to our emerging framework rather than population sampling (Eisenhardt, 1989). As Yin (1994: 10) notes, qualitative research relies on logical inference whereby ‘case studies are generalizable to theoretical propositions and not populations’.

The principal means of data collection was through semi-structured face-to-face interviews of owner-managers, supplemented by data from company websites and other documentation. The interviewers used open-ended questions within a standardised protocol to allow for comparisons between the case studies. This gave the researchers the freedom to explore interesting avenues for investigation as they emerge whilst preserving data collection reliability (Miles and Huberman, 1994).

Interviewees were asked to provide information about:

- The nature of their business (its size, history, products, markets, etc)
- Their use of ICT, especially Web 2.0 tools
- How they collaborate with others to win business and deliver to customers
- How they use ICT to win business and deliver their services to customers
- The benefits of collaborative working
- Any problems they experience with collaborative working

The owner-manager was interviewed as he or she will almost certainly be the person with the most influence in technology adoption decisions in a small business (Levy and Powell, 2005).

Case study findings

In total, twelve firms were studied. All were business services providers, including various forms of management consultancy, online recruitment, media production, corporate events, business networking and a charity supporting community-based projects. A brief summary of the findings from each of the cases is now provided. (NB: Some companies, denoted by (*), wished to remain anonymous. In these cases, pseudonyms have been used and some details disguised.)

Wisework is a management consultancy specialising in introducing flexible working into organizations. The make-up of its project teams depends on the nature of the work being undertaken. The company believes its use of Web 2.0 ICT enables the company to improve its operating efficiency and minimise overheads, whilst at the same time enabling the company to tailor its service offerings to the requirements of individual clients, by bringing together the most suitable consultants for each project. Wisework’s directors are enthusiastic about the flexible working that their use of Web 2.0 tools provides for them as it offers them the autonomy and freedom that enables them to pursue their other interests and realize other sources of income. It enables them to be “physically and mentally distributed”.

Synergy Global is a management consultancy specialising in organizational change. It operates a highly flexible business model based on virtual team working. Synergy staffs its projects from a pool of consultants who can all offer high levels of flexibility in terms of time and place. This not only minimizes overhead costs, but enables the company to better cope with the “feast or famine” nature of consultancy. Synergy selects the Project Leader and team of consultants from amongst its associates that are most appropriate for any given

project. In so doing it can assemble a project team with all the capabilities necessary to meet the specific needs for each client. All the consultants used on a project must be approved by Synergy's CEO who continues to take a close interest in the progress of the project. The company argues that the success of any virtual team relies on a high level of trust between its members.

Penny on Trust is a charity whose aim is to persuade consumers to add one penny to every purchase they make for donation to good causes, which are delivered through local voluntary sector agencies. Online working, meeting and working in "virtual rather than physical space" reduces operating costs and improves efficiency. Virtual working also offers a high degree of flexibility, enabling the charity to call upon volunteers who have the most appropriate expertise for each stage of a particular project. The company is replacing existing openware with a proprietary system (a scaled down version of SAP) to improve its online working. This will enable project networks of up to 40 consultants to access the same files via an extranet using laptops with standardised hardware. This will also be used to manage the management of project funds. Penny on Trust promotes its campaign using its pilot projects as exemplar stories in documentary webinars on blogging and social network sites.

The Imaginist Consortium comprises three independent consultants, who each operate their own quite separate consultancies, but come together from time to time to work on joint projects. Their individual participation in any particular project varies depending upon their availabilities and the nature of the project; similarly for project leadership. Additional consultants are brought into projects, acting as associates, to provide any additional skills and resources that might be necessary for any project. They specialise in projects that introduce new technology into organizations. Imaginist believes their business model enables the company to reduce operating costs and speed delivery. It also provides them with the flexibility needed to deliver operational and lifestyle benefits. Their use of online working is pervasive, enabling them to communicate effectively with clients and within project teams. Bidding for projects also typically takes place online. However, Internet ICT supplements rather than replaces face-to-face meetings. Also, most new business comes from a mixture of word of mouth and informal face-to-face networking.

Nu-siti Productions* provides media production and consultancy services. For each project it collaborates with a number of other technology partner companies in order to offer its clients the most appropriate solution to their needs, rather than pushing one particular technology. In its projects it is always open with its clients about use of other collaborators. Its operations are underpinned by custom-built ICT tools, which improve its operational efficiency and external communications. These include virtual live meeting and an online booking form. However, it uses online tools to supplement rather than replace its face-to-face interactions with clients, which it feels are still essential to building long lasting relationships.

Amnis is a management consultancy and training company specialising mainly in the healthcare sector. It has a very flexible business model. Its consultants, often supplemented by associates, operate under the Amnis banner when leading projects. However, they may also work as part of the team of another consultancy if that is leading a project. Amnis wants to be seen as an easy-to-work-with partner, and so has a philosophy of being willing to share intellectual property. This it believes will help attract future business. Amnis uses ICT at a relatively low level of sophistication. It has no centralised IT system and its business systems are on CD. Communications tend to be via email. Its website, which is managed by the company's ISP (Internet Service Provider), is used mostly to promote the business. Amnis'

owner-manager is a very active online networker and blogger. He uses online media extensively to promote the business. Amnis also uses web site adwords, telesales and direct mailings to advertise the business. Thus, the major benefit the company gains from Web 2.0 is in terms of its external communications.

Lavita* is a management consultancy specialising in the media industry. It draws on a number of associates as collaborators when required. Although it runs projects under the Lavita label it also collaborates extensively with Cambera*, a much larger (ca. 60 people) consultancy specialising in business analysis. Such collaborative projects are co-branded and have been operating successfully and continuously for a number of years. The two consultancies have complementary areas of expertise and tasks are shared out between their respective consultants according to need and availability. Internet ICT underpins their collaborations, enabling Lavita to enhance its capabilities in a cost effective manner in order to meet the needs of its clients. Many of the joint projects are won and carried out entirely virtually, with no face-to-face contact, emphasising the importance of Web 2.0 in communications between the two consultancies and their clients.

Ki Work (pronounced 'Key Work') is an online business that operates a website that acts as a marketplace to bring together businesses looking for tele-workers, and tele-workers looking for projects to work on. The site offers a series of specialist categories of online business functions (e.g. web developers, business consultants, copywriters, etc), each of which is managed by a 'Category Leader' who 'leases' their category for a fee. Posting to the site is free, but Category Leaders earn a small fee from appointing 'Experts' (i.e. specialist workers), who get greater status, visibility and credibility within the marketplace. The site provides a sophisticated search facility to enable organizations to identify most suitable workers. Ki Work's own software development is outsourced, using entirely on-line communications. Ki Work's business model relies on Web 2.0 tools to enable it to offer a customized service cost effectively and to communicate more successfully with its users. Its goal is to become a billion dollar business serving the needs of the estimated 100+ million online workers worldwide. Ki Work recruits through links to social networking sites (Facebook, LinkedIn and Twitter). To date there have been over 5,000 installations of the Ki Work application on Facebook alone.

Laudatum Events* promotes and markets business events to the small business community. Its business model relies on its use of affiliates (currently amounting to several hundred) who promote the events for a share of the profits. This model is based on a proprietary web-tool that supports affiliate marketing and the booking of events. Use of affiliates enables Laudatum Events to enhance its capabilities and operate in a very efficient manner. They provide all the information the affiliates need to promote the events, including downloadable email copy for the affiliates to forward to addresses on their databases and perhaps downloadable material for those who miss the events. Operationally, they also rely heavily on Web 2.0 tools (Skype, Facebook and Ecademy) for their communications. Laudatum Events promote themselves to prospective affiliates through both word of mouth and blogging. Their hope is that affiliates will have their own affiliates, who will then be on their system. Their aim is to be the Amazon of business events with international speakers and world wide events.

The Tax Advice Network is a web-based business that acts as broker for small accountancy firms seeking specialist tax advisers for their clients. Suitably qualified tax specialists post their details to the website, which has a search facility to enable the accountants to locate

advisers with the required expertise (Inheritance Tax, tax investigations, customs duties, employment status, VAT, etc.). The tax advisers pay an annual membership fee and a commission based on the value of the work generated through the site. Once registered on the site, the accountants receive a weekly email newsletter written by members of the Tax Advice Network with updates about tax related issues. There are also facilities for users to provide feedback and ratings on the advisers and their work. The site also includes discussion forums for the tax specialists to exchange views about tax and business issues. Operating as an online business frees up the owner-manager's time for him to indulge his passion for promotional work; he is a regular speaker at conferences and seminars. He also offers consultancy, mentoring, coaching and training services to accountants. He makes extensive use of Web 2.0 to promote the Tax Advice Network online, making regular contributions (articles and blogs) to relevant business sites. The tax experts are mostly recruited online from referrals on Ecademy, the business networking website.

Clearview Networking* is a web-based business networking service. It promotes, publicises and supports organizations that offer hospitality and facilitated networking events to the small businesses community. Such organizations include networking organizations, local authorities, universities, the media and Chambers of Commerce in local areas. Clearview Networking operates as a network for other networks. It does this by making information on forthcoming events available through its website and various business publications, or through subscription to its newsletter. The Clearview Networking platform uses proprietary software to enable it to operate cost effectively. The website creates an environment to support and encourage networking. Although Clearview Networking itself relies heavily on online communications, most of the networking it facilitates takes place off-line (typically in the ratio of 25% online to 75% offline). Clearview Networking provides a national networking environment in the UK supported locally through its local leaders, many of whom are recruited from Ecademy. The business is now expanding globally.

TCN* is an online network of independent consultants, trainers and coaches in the UK. It is one of many specialist networks hosted on a commercial business networking website. Individuals must subscribe to gain access to the main website, but there is no additional fee to join TCN. TCN generates income via the charges made for attending the events it organizes. TCN has around 500 members, about 150 of whom could be termed as active. When originally set up, TCN went through a phase of very rapid growth, facilitated by its operators. However, it is now mostly self-perpetuating and requires much less effort from them. The level of efficiency provided by its online operation now enables the members to spend more of their time pursuing their other business interests. Most of TCN's members are 'one-man-brands', most of whom are not looking to grow their businesses. TCN acts as a self-help group with questions and answers posted by members. It is increasingly used to facilitate business collaborations, with for example, one member posting to ask for others to join them in a pitch for business. TCN also organizes face-to-face events with keynote speakers. TCN relies on the standard hardware and web tools provided by its host website as the basis for its own communications.

Table 1 provides a summary of some of the key features of the case companies, including their business sector, size (numbers of employees), the type of Internet tools used, their work orientation (i.e. their business model or *modus operandi*), their information systems orientation (i.e. whether their preference is for generic or proprietary ICT) and the business networks they use both online and off-line.

[take in Table 1 about here]

Discussion

In this section case study findings are considered by first identifying the key benefits from Web 2.0 for each of the case companies. The discussion is structured by using Hinchcliffe (2010)'s list of four major Web 2.0 benefits, with 'lifestyle benefits' added as a fifth element. The online collaborations undertaken by each of the 12 case companies are then categorised in relation to their choice of technology (*simple vs. sophisticated*) and their utilisation of technology (*control vs. collaboration*).

Identifying Web 2.0 benefits

The data was interrogated to assess the extent to which the five categories of benefits available from Web 2.0 were evidenced in the case companies. Taking each category in turn:

1. *Improved internal operational efficiency* – Whilst none of the case companies seem to compete solely on the basis of price, none could afford to ignore the issue of operating costs. All of the case companies except one emphasised the ability of Web tools to reduce operating costs and improve internal operational efficiency by lowering overheads and freeing-up owner-managers' time. In some cases, Web 2.0 enabled a company to make use of external resources (primarily people) at a much lower cost than it could otherwise achieve if reliant on more traditional business methods. This seemed particularly important to Wisework, Synergy Global, Penny on Trust, Imaginist, Nu-siti Productions, and Lavita. By contrast, Amnis seemed to have little concern about seeking the efficiency benefits available from the use of Internet ICTs in its operations.
2. *Enhanced capability* – Many of the cases demonstrate the importance placed by the companies on business networking websites and other online for sourcing of suppliers and collaborators, either directly or indirectly (e.g. Ki Work, Tax Advice Network, Clearview Networking). Networking through Web 2.0 in this way helps them identify and access sources of external expertise, which provides them with the capabilities necessary to undertake certain work; capabilities that they would almost certainly not possess, or not possess in sufficient quantity, if they had to rely on internal resources. Once identified, managing this expertise through Web 2.0 tools offers a flexible, effective and low cost way of enhancing organizational capability without recourse to increasing the number of direct employees. The business models of Synergy Global, Lavita and Laudatum Events provide good examples of this. Although it should be noted that in terms of our case studies, only a minority (5) were actively engaged in using Web 2.0 to enhance their existing capability. This suggests that embedding capability is a much harder strategic task for our companies than promoting operational efficiency.
3. *More effective external communications* – Most of the case companies seem to recognise the importance of promoting their businesses through Web 2.0 tools in order to secure work and attract suitable collaborators and suppliers. In this way, Web 2.0 tools enable them to communicate with customers, supplier, collaborators and peers, effectively and at low cost. They particularly seem to make good use of business networking websites (e.g. Ecademy, LinkedIn), blogging and webinars (e.g. Penny on Trust, Amnis, Tax Advice Network, Laudatum Events). Membership of these networks also provides sources of advice and support to hard-pressed owner-managers from their peers. However, it is

worth noting the value that even some of the most enthusiastic adopters of Web 2.0 still attach to face-to-face interaction, as evidenced by their commitment to face-to-face as well as virtual communications and networking (e.g. Imaginist, Nu-siti Productions, TCN).

4. *Customized service offering* – The enhanced communications offered by Web 2.0 (as discussed above) enables the case companies to provide customized services to meet the specific needs of customers. The companies can get much closer to their customers in a virtual sense, without the need for physical proximity. This enables them to better understand their needs and tailor their offerings accordingly. In terms of our case studies, half of the companies appeared to be using Web 2.0 to offer a customised service. Examples of this are offered by Imaginist, Lavita and Ki Works. The enhanced capabilities available through the use of Web 2.0 (as discussed above) provides the increased flexibility and speed of response necessary for them to deliver these tailored offerings (e.g. Wisework and Synergy Global).
5. *Lifestyle benefits* – Web 2.0 offers a number of important lifestyle benefits to many of the owner-managers of the case companies. In particular, it offers the ability to conduct many aspects of day-to-day business at a distance, reducing the need to travel for meetings (with customers, co-workers, collaborators, etc). It also enables many routine activities previously conducted in the office to be done in the online environment. This frees up valuable time with little apparent detriment to the operation of the business. In some cases, owner-managers are able to pursue other businesses and interests, which is another major lifestyle benefit. This is particularly important in the cases of Wisework, Imaginist, and TCN. Web 2.0 especially enables small business owner-managers to maintain close relationships with a wide circle of business contacts. Tax Advice Network is a good example of this. However, it should be noted that amongst our case studies (admittedly non representative), only a minority reported lifestyle benefits arising from Web 2.0.

A summary of most important benefits realized by each of the case companies is shown in Table 2. As can be seen in the Table, most of the reported benefits from Web 2.0 are heavily focused on the operational outcomes of improved efficiency and enhanced external communications. Far fewer benefits are reported that might be considered more strategic in nature (developing capability and service differentiation). This suggests that many of the benefits accruing from Web 2.0, even by early adopters of the technology, have yet to be realised. In one sense then, the adoption of Web 2.0 is typical of ICT adoption by small firms in being heavily focused on efficiency (Levy et al., 2001).

Both efficiency and communication can be cast more broadly as essentially improving the flow of information within and extant to the firm. Efficiency here, as the case analysis suggests, is not so much directed at reducing or eliminating workforce but rather at facilitating information flow at reduced cost. Thus for example, Lavita's emphasis upon virtual collaboration avoids the physical cost involved in face to face collaboration with Oxera. Similarly, the Tax Advice Network's virtual presence is a far less costly mechanism than the alternative of a physical clearing house. As Bharadwaj and Soni (2007) found in a more widespread survey, improving information flows was cited by almost 80% of their small business respondents as the primary reason for adopting new technology. However, improving information flows says nothing about the way in which information is distributed within and between firms. This is discussed in the next section.

[take in Table 2 about here]

Categorising online collaborations: A two dimensional framework

Analysis of the case study data suggests that a two dimensional framework based on the research reviewed earlier in this paper could be used to characterize the different ways in which small business networks make use of Web 2.0.

The first dimension is one related to the basis on which the inter-organizational collaboration is conducted. The networks studied in this research fall into two broad categories, namely those that operate on the basis of *control* and those that operate on the basis of *cooperation*. Some of the networks operate on the basis of control by a single small business that lies at the centre of the network. These companies control the functioning of the network, which operates under their brand name. Examples of this include Synergy Global, Ki Work, Laudatum Events, Tax Advice Network and Clearview Networking. Other networks operate more on the basis of cooperation between the various participants, with no central player dominating the networks. Here, to take up Adebajo and Michaelides's (2010) point, there was no identifiable 'intermediary organisation' playing a leading role in the development of the network. Examples of this include Wisework, Penny on Trust, Imaginist, Amnis, Nu-siti Productions, Lavita and TCN.

The second dimension is that of the business's approach to ICT. In order to make best use of the available networking ICT, small businesses are likely to be faced with a fundamental choice. They could opt to use Web 2.0 tools that are *simple* or alternatively choose tools that are *sophisticated*. Simple Web 2.0 tools are generic and readily available at either very low or even no cost from a large variety of sources. They include applications for online communication (such as Outlook for emails), audio and video conferencing (such as Skype and Megameetings) and shared work spaces (such as Basecamp). Simple ICTs are more suited to networks where information management is not critical to the success of the business. Simple ICTs will be favoured where the business needs the flexibility to tailor its offering to the requirements of different customers. More sophisticated Web 2.0 tools will encompass proprietary software that is typically produced or adapted for the specific user's need. Increased levels of functionality and customization are invariably accompanied with a much higher price tag. Penny on Trust, Nu-siti Productions, Ki Work, Laudatum Events, Tax Advice Network and Clearview Networking provide examples of the use of sophisticated Web 2.0 tools. On the other hand Wisework, Synergy Global, Imaginist, Amnis, Lavita and TCN all operate in networks using simple tools. More sophisticated ICTs are likely to be required where information management provides the fundamental underpinnings of the business. They are also likely to be favoured where the business provides a focussed service offering to its customers.

Use of these two dimensions enables a simple 2 x 2 matrix to be constructed, in which each of the case organizations can be located (see Figure 1).

[take in figure 1]

This suggests four types of small business network, corresponding to each of the four quadrants of the matrix:

- *Open networkers*

These are characterized by their use of simple Web 2.0 applications, which they see as the means to enacting their preferred approach to online collaboration, namely that of cooperation with like-minded small businesses. They are likely to be flexible in their approach to networking, being prepared to adapt whatever role is required in order to enable the network to meet the needs of its current customer. They are likely to be innovative in their use of ICT, being more than willing to experiment with new applications in order to improve the functioning of the network. As they place less emphasis on the primacy of ICT, they are also likely to value off-line contacts with their collaborators as much those that take place online. Wisework, Imaginist, Amnis, Lavita and TCN fall into this category.

- *Hub-controllers*

These are characterized by a business model that requires them to control their network. Their use of ICT is primarily to reinforce their role within the network. As such they are unlikely to be technology leaders, eschewing experimentation and innovation. Rather they are likely to prefer to use tried and trusted ICT solutions rather than leading edge applications. Synergy Global is the sole example of this type.

- *Techno-controllers*

These are characterized by an ICT-based business model requiring close control of the network. These are typically web-based businesses, often cybermediaries that bring together service providers and users. Information management is mission-critical to these businesses. Their ICT systems are both critical to their business success and provide them with the level of control necessary to exploit the information on which their business depends. Ki Work, Laudatum Events, Tax Advice Network and Clearview Networking are in this category.

- *Techno-collaborators*

These are also characterized by their use of sophisticated ICT, as it is fundamental to their business success. However, unlike techno-controllers, these businesses use ICT as the means of improving their collaboration with their network partners, rather than seeking to control them. These businesses rely on the co-operation of their network partners for their success. Web 2.0 ICT provides the means of reinforcing this. Penny on Trust and Nu-siti Productions fall into this category.

Conclusions

The main findings from the research are twofold. Firstly, the research provided confirmatory evidence for the benefits available from the use of Web 2.0 in collaborations in small business collaborations suggested in the literature. The five types of benefit identified were categorised as internal operational efficiency, enhanced capability, external communications, enhanced service offerings and lifestyle benefits. Secondly, the research demonstrated that it is possible to categorise different types of small business online collaborations using the dimensions of the basis for inter-organizational collaboration (control vs. cooperation) and the level of Web 2.0 ICT use (simple vs. sophisticated). This enabled a 2x2 framework to be developed that can be used to categorise four different types of small business networks to be characterised. This analysis emphasizes that Web 2.0 can be used in different ways and for different purposes.

This paper makes a contribution to the literature in that it is one of the first to report on the use of Web 2.0 ICT in collaborative working between small businesses. The use of ICT in

small businesses is a neglected area of study within both the ICT research community and also within the small business research community. The research reported in this paper provides evidence of the attraction and potential of Web 2.0 for collaborations between small businesses. As such, it offers a pointer to the likely future use of Web 2.0 tools by other small businesses. The development of the 2x2 framework offers a step towards providing a better understanding of the different potential uses of Web 2.0 for small business collaboration. The paper will be of interest to those seeking a better understanding of the potential of Web 2.0 in the small business community, both in the academic and practitioner communities.

This research has a number of limitations. Firstly, it is based on data collected from only twelve case studies. As well as their limited number, all the case companies operate in similar industries (business services) and are based in a single country (UK). Also, all could be classified more specifically as micro-businesses, as they have less than 10 direct employees. The situation is, however, somewhat clouded by the use of other forms of 'employment' including part-time, associate status and volunteers. Therefore, any attempt to generalize the findings can only be done so with extreme caution.

Future research is required to verify the findings of this study not only within the category of small business represented by the case companies, but in other industries and countries and in larger-sized small businesses. This might provide a useful way of further validating the framework or adding additional dimensions to it. The use of a quantitative methodology, probably involving a large-scale survey, is likely to be appropriate in this regard, as it would enable researchers to test some of the emergent issues from this research using statistical techniques. Furthermore, future research could examine if the intuitive nature of Web 2.0 tools has made it easier for small firms to engage with and to adopt ICT more generally in their business operations. However, like any form of ICT, the technologies associated with Web 2.0 are subject to rapid change. This will make it very difficult for any future study to control for their impact over time.

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<i>Basis of collaboration</i>	<p><u>Hub-controllers</u></p> <p>Synergy Global</p>	<p><u>Techno-controllers</u></p> <p>Ki Work</p> <p>Laudatum Events</p> <p>The Tax Advice Network</p> <p>Clearview Networking</p>
	<p><u>Open networkers</u></p> <p>Wisework</p> <p>The Imaginist Consortium</p> <p>Amnis</p> <p>Lavita</p> <p>TCN</p>	<p><u>Techno-collaborators</u></p> <p>Penny on Trust</p> <p>Nu-siti Productions</p>
	Simple	Sophisticated
	<i>Web 2.0 tools used in the network</i>	

Figure 1: Small business Web 2.0 network types

Name	Sector	Size (employees)	Work orientation	ICT orientation	Internet tools	Online networks	Offline networks
Wisework	Management Consultancy	4	Virtual teams of in-house consultants supplemented by associates as required	Generic	Skype Oovoo Megameetings MS Office Live	Ecademy Plaxo LinkedIn Blogging	Professional association, Networking clubs Associates
Synergy Global	Management Consultancy	2 40+ associate consultants	Project teams of associates operate under the Synergy Global brand, supplemented by partner organizations as required	Generic	Intranet (for communication and file sharing)	Online networking by individual associates	
Penny on Trust	Charity	3 full time 30+ volunteers	Virtual teams of consultants and volunteers	Proprietary	Huddle (collaboration, project management and document sharing) Intranet	Pilot projects used for promotion via webumentaries on blogs and social networks.	
Imaginist	Management consultancy	3	Virtual teams. Other associates brought in for specific expertise as required	Generic	Basecamp (for document sharing and brainstorming) Skype	Ecademy LinkedIn	Networking events Word of mouth recommendations
Nu-siti Productions	Media production and consultancy	8	In-house team supplemented by freelance specialists (producers, cameramen, sound engineers, etc) and technology partner organizations as required	Proprietary	Skype Custom-built tools for online booking and web meetings MS Exchange	Ecademy	

Amnis	Management consultancy & training	6	Teams of in-house consultants supplemented by associates as required	Generic	Email Adwords	Online networks Blogging E-newsletters	Professional associations Own events
Lavita	Management consultancy	2	Virtual teams. Associates used as required. Jointly branded projects with a larger (60 people) consultancy	Generic	Skype GoogleDocs LinkedIn	Various online networks Blogging	
KiWork	Online recruitment marketplace	4	Network of specialists organized into 500 categories. Each category is leased by a Leader who earns fees for successful operation	Proprietary	Web platform with search facilities, feedback, ratings, discussion forums, etc Facebook application for recruitment	Facebook LinkedIn Twitter	Own events
Laudatum Events	Marketing and management of corporate events	8 + 1 full time webmaster	600+ affiliate marketing partners Strategic partners operating in 24 countries	Proprietary	Web platform to support affiliate marketing and the booking of events. Skype	Facebook Ecademy Blogging	Face-to-face networking
The Tax Advice Network	Online broker matching tax specialists to small accountants	2	A broker matching tax experts to small accountancy firms seeking specialist advice. Outsources most operational work	Proprietary	Web platform with search facilities, feedback, ratings, discussion forums, etc	AccountingWeb LinkedIn Ecademy Blogging	Face-to-face networking

Clearview Networking	Online business network	2	Operates as a network for other networks 14 part-time local leaders in UK (another 6 to be recruited), all having their own businesses	Proprietary	Website with proprietary software	Ecademy	Face-to-face networking
TCN	Online business network	2	A loose consortium of people with similar interest. 500 members (150 active)	Generic	Hosted on a commercial business networking website	Ecademy	Face-to-face networking

Table 1: Summary of key features of the case companies

	<i>Internal operational efficiency</i>	<i>Enhanced capability</i>	<i>External communications</i>	<i>Customized service offering</i>	<i>Lifestyle benefits</i>
Wisework	✓			✓	✓
Synergy Global	✓	✓		✓	
Penny on Trust	✓	✓	✓	✓	
Imaginist	✓	✓	✓	✓	✓
Nu-siti Productions	✓		✓		
Amnis			✓		
Lavita	✓	✓	✓	✓	
Ki Work	✓		✓	✓	
Laudatum Events	✓	✓	✓		
Tax Advice Network	✓		✓		✓
Clearview Networking	✓		✓		
TCN	✓		✓		✓

Table 2: Benefits from Web 2.0