A learning framework for the small business environment

Felicity Kelliher

School of Business, Waterford Institute of Technology, Waterford, Ireland, and

Joan Bernadette Henderson

School of Management and Economics, The Queen's University of Belfast, Belfast, UK

Abstract

Purpose – The aim of this article is to offer insight into the factors affecting individual and organisational learning in a small business; specifically the identification of the learning relationships that are unique to the small business environment.

Design/methodology/approach – The authors apply Crossan *et al.*'s (1997, 1999) *Organisational Learning Framework*. The proposed framework is supported by empirical evidence generated through a longitudinal case study carried out in a small business in the Republic of Ireland over a two-year period. A learning catalyst, in this case the implementation of a new information system (IS), offered an initial point from which to gauge subsequent learning within the studied case.

Findings – This framework acknowledges the learning impact of a small workforce, an owner-centred culture and a simple organisational structure, as well as the time and resource constraints specific to small businesses which affect the learning dynamic. The framework also takes account of the learning challenges brought about by external influences unique to a small business environment, such as enforced organisational change created by powerful business partners' commercial requirements.

Research limitations/implications – As this framework was developed based on a single case, similar research may be conducted on additional case studies to determine the learning dynamic in alternative settings and business environments.

Originality/value – This research presents some valuable insights into the ways in which organisational learning can be facilitated and impeded in the largely ignored small business environment.

Keywords Small enterprises, Organizational behaviour, Learning

Paper type Research paper

Introduction

Interest in organisational learning as a research topic has grown significantly in recent decades. In particular, several learning frameworks have been developed to illustrate the learning levels, relationships and processes within large organisations, and the ways in which organisational learning may be facilitated and impeded in this context (for example: Crossan *et al.*, 1997, 1999; Dover, 2003; Nonaka, 1994; Templeton *et al.*, 2002, among others). In this context, a framework can be defined as a basic conceptual structure organised around a theory (Crede, 2002). This paper contends that while the various literatures are revealing from a large company perspective, there is little research emphasis on organisational learning in a small business[1] environment (Ballantine *et al.*, 1998; Down, 1999; Johnson, 2002). In fact, there have been multiple calls for research in this milieu, specifically for investigations into individual and

collective learning within small firms (for example: Brown and Duguid, 1991; Crossan *et al.*, 1997, 1999; Johnson, 2002). Tsui-Auch (2003) fortifies this view by calling for a comprehensive framework to explicate the learning strategies of small firms. The authors address this gap through the application of Crossan *et al.*'s *Organisational Learning Framework* (Crossan *et al.*, 1997, 1999) to a small business context, followed by a critical review of the suitability and relevance of this learning framework in such an environment. Having established a theoretical basis for learning in small business, the researchers develop a comprehensive "small business learning framework", supported by empirical evidence generated through a longitudinal case study carried out in a small business in the Republic of Ireland over a two-year period. This framework acknowledges the impact of a small workforce, an owner-centred culture and a simple organisational structure on learning, as well as the time and resource constraints specific to small businesses which may alter the learning dynamic evident in larger organisations. The framework also takes account of the learning challenges brought about by external influences unique to a small business environment, such as enforced organisational change created by powerful business partners' commercial requirements. This research presents some valuable insights into the ways in which organisational learning can be facilitated and impeded in the largely ignored small business environment.

Literature review

Organisational learning is the process of change in individual and shared thought and action, which is affected by and embedded in the institutions of the organisation (Crossan *et al.*, 1997). Several writers (for example: Crossan *et al.*, 1997, 1999; Dover, 2003; Nonaka, 1994; Templeton *et al.*, 2002, among others) have developed learning frameworks to explain organisational learning from a large firm perspective, and each points to three learning levels (individual, group, organisation), which ultimately contribute to organisational learning in the modern business environment. Notably, researchers urge the facilitation of learning at each level of the organisation (Dover, 2003; Richter, 1998), and learning at all organisational levels is being cited as a critical dimension in a firm's success (Crossan *et al.*, 1997, 1999; Richter, 1998). In general, these frameworks assume that learning is emergent in nature, beginning with the individual's personal construct (Kelly, 1955; Wyer *et al.*, 2000) which in turn forms the basis for group learning and action, and eventually results in collective understanding within the organisation (Finger and Burgin Brand, 1999). The construct assumes "framed relationships" with the organisation's immediate environment. Emergent learning suggests an outward spiral from individual to environment, with sufficient time available to anchor learning and resultant behavioural changes at each level before the next level is addressed. It should be noted that while individual understanding will form the basis of group-level learning, some of this learning may remain inaccessible to the organisation as a whole (Figure 1)

This figure assumes a large organisation environment, with sufficient resources and industry power to facilitate emergent learning (Watkins and Marsick, 1992). However, the differences in organisational characteristics and approach to business problems render many of the theories derived from studies of large corporations inappropriate when applied to small firms (a view supported by: Dandridge, 1979, Welsh and White, 1981; Wyer *et al.*, 2000, among others). Specifically, it is widely

Figure 1.
Organisational learning
framework
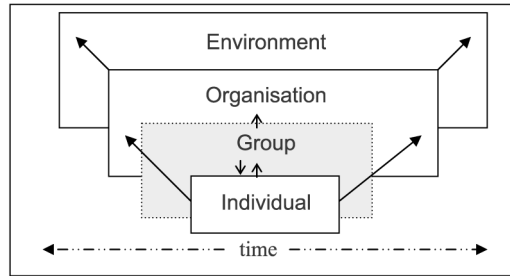
Source: Adapted from Crossan *et al*. (1997 & 1999)

accepted that small firms face "resource poverty", which forces them to operate under severe time, financial and expertise constraints (Hill and McGowen, 1999; Roper, 1999; Welsh and White, 1981). Thus, the small firm may not have sufficient resources to facilitate emergent learning in this setting. Learning new capabilities can therefore be quite problematic in the small firm environment (Pil and Holweg, 2003), as emphasis is often placed on immediately applicable learning (Chaston *et al.*, 1999; Lawless *et al.*, 2000) to the detriment of staff training and development (Keep, 1989; Storey and Cressy, 1995). Furthermore, small firms present unique internal characteristics, which encapsulate an informal decision making process emulating from the owner (Brown, 2000), a simple organisational structure (Mintzberg *et al.*, 1998), and a business culture built on personal relationships (Scase and Goffee, 1987) and open communication channels (Bell and Menguc, 2004; Harvey *et al.*, 1998), each of which has an impact on organisational learning in this environment. Several writers also comment on the owner's pivotal role in the small organisation (Iles, 1994; Markus, 1983), wherein the organisational culture can be considered an extension of the owner's personality (Lange *et al.*, 2000; Smallbone and Wyer, 1994). Finally, small firms rarely hold industry power (Galbraith, 1973), resulting in externally influenced learning in this environment (Hart and Saunders, 1997).

The focus of this research is to explore learning in a small business environment. The chosen learning catalyst in this research study is an IS implementation, as technology driven change impacts workforce learning and behaviour (Ketchum and Trist, 1992; Manz and Stewart, 1997) thus permitting the researchers to observe post-implementation learning (Taylor and Thorpe, 2004) and assess whether the learner is required to make strategic and/or operational changes to cope with the change (Deakins and Freel, 1996). Notably, individual learning is a key knowledge factor for small firms (Ruiz-Mercader *et al.*, 2006) and there is empirical evidence of the positive relationship between information technology training and learning in small businesses in this regard (Ballantine *et al.*, 1998; Storey and Cressy, 1995; Thong, 2001). Specifically, a combined communication and training approach can overcome learning barriers, creating an optimum learning environment (Gibbons, 2002; Harvey *et al.*, 1998; Hirschheim, 1985). Thus, IS-induced learning should be addressed in terms of continual learning (Orlikowski *et al.*, 1995), including relevant learning curves (Kraut *et al.*, 1999), and progressive learning loops (Cohen and Levinthal, 1990; Darch and Lucas, 2002; Stokes, 2001) rather than as a distinct entity to be fulfilled at the start of an IS implementation.

It is of particular relevance to this research that internal IS specialisation is highly unlikely in the small firm setting (Gable, 1991; Thong, 2001), often resulting in IS vendor dependency in this milieu (Senn and Gibson, 1981). Notably, IS installations are unlikely to focus on small firm learning needs (Davenport, 1998), concentrating instead on supplier-led efficiency goals to the detriment of communications, training and support elements of the IS implementation (Nicholas, 1996; Proudlock *et al.*, 1999). In summary, it has been established that current literature does not adequately explore the micro level relationships or links between organisational learning and individual learning in the small firm environment and that small firm learning framework development has been neglected in the past. Thus, the purpose of this research is to study learning in the small firm environment, specifically the relationship between individual, group and organisational learning in this setting, and to develop a comprehensive small business learning framework in pursuit of this goal.

Research methodology

This research consisted of a single in-depth interpretive case study, incorporating a two-year observation period, whose purpose was to explore learning in a small business environment. An IS implementation was chosen as an appropriate learning catalyst in this context. The interpretive case study method was selected in this instance as it sanctions the investigation of contemporary phenomenon within its real life context (Irani *et al.*, 1999; Yin, 1994), Henfridsson and Soderholm (2000) and Spitler (2005) both recommend applying this method in the study of learning in an organisational setting, while Orlikowski and Baroudi (1991) and Klein and Myers (1999) endorse this approach from an IS research perspective. A literature review preceded this case study, acting as a means to an end in order to gain some precision in formulating the research objective, which is: To establish a small business learning framework by exploring the unique learning aspects in this environment. This approach is advocated by Leavy (1994, p. 115) who states that "the conceptual framework is usually developed through the first major phase of the literature review in interaction with the early stages of the fieldwork". A number of suitable cases were identified based on pre-defined selection criteria and access was negotiated with the selected case owner (heretofore case XYZ). Having identified the case organisation, the authors established a case study protocol, which is, in essence, "an action plan for getting from here to there" (Yin, 1994, p. 66) by offering context and perspective. While not vital in a single study (Yin, 1994), it is recommended as the research blueprint, focusing on what questions to study, what data are relevant, what data to collect, and how to analyse the results (Philliber *et al.*, 1980).

Subsequently, a systematic data collection plan was devised by the authors (as recommended by Eisenhardt, 1989), based on the research protocol. Observational data is advocated in modern organisational learning, small business and IS management research as an appropriate data collection method (Mumford, 2001; Sullivan, 2000 and Trauth, 2001, among others), and is therefore employed as the key research technique in this study. Initially, the researchers spent two weeks observing XYZ, a period encompassing the IS implementation. The authors subsequently returned on 16 occasions over the following two years, at approximately six-week intervals to observe and document the new system's learning impact on the case owner and employees. The

researchers' conducted eight-to-sixteen hours of observation during each visit, and documented the participants' verbal and non-verbal reaction to and interaction with both the IS itself and with each other in relation to IS-induced learning. During each observation session, the authors noted incidents of interest within the context of the research objective, which in turn aided data analysis (as recommended by Slack and Rowley, 2001). Over time, cumulative data offered insight into individual learning progress following the IS implementation (Brown and Duguid, 1991), as it revealed actual practice in the studied firm.

Observations were supported by informal conversations with the owner and individual staff members during each visit. In each instance, an interview schedule was followed, incorporating a loose set of questions to allow for open-ended responses. The ambition here was to get as close as possible to XYZ in order to describe both the unique and typical experiences and events within this environment as bases for theory (as argued by Dalton, 1959). In terms of temporal interconnection, the goal was to establish learning in past, present and future terms. The assumption is that learning causation is neither linear nor singular (Pettigrew, 1990), but rather continual in the context of ongoing change. Therefore, having established that the IS implementation required significant adjustment in the knowledge base of XYZ on both an individual and organisational level, observational evidence offered the most appropriate means of assessing the level of adjustment in context (Sutton and Callahan, 1987). In conjunction with the prolonged observation, the IS purchase decision was retrospectively discussed with XYZ's owner via a series of four semi-structured interviews, each lasting for approximately one hour. The authors also carried out a thorough review of XYZ's archival records and internal documentation [having agreed access with the owner] at the start and end of the study.

While single case studies are recognised for providing contextual depth, results are often criticised in terms of validity, reliability and generalisability, referred to collectively as research legitimisation. As a single case's legitimacy can be enhanced by establishing a robust case structure (Kelliher, 2005), a rigorous research protocol is adopted in this research. This approach sought to address some of the specific criticisms levied on the single case study, as the protocol allows for a chain of evidence, ensuring increased reliability and reduced misperception at every stage of the research process (Stake, 1995). Specifically, Denzin (1970) states that multiple and independent methods should, if reaching the same conclusions, have greater reliability than a single methodological approach to a problem, therefore multiple research techniques (observations, interviews and internal documentary review) are applied to this research study. Furthermore, reliability and validation were reinforced through the constant iteration between the various datasets, including interview data, observation data gathered during and after the IS implementation process, academic literature and XYZ's archival information. Finally, although a single study cannot provide sufficient evidence to make robust generalisations (Blackburn and Mann, 1980; Leavy, 1994), it can be generalisable to theoretical propositions (Yin, 1984), which is the goal in this research. Consequently, this study seeks to establish the existence of a phenomenon (Bourdieu, 1993; Denzin, 1970), therefore providing a valid contribution to the body of knowledge (Burgess, 1980) in relation to organisational learning and small business research.

Case background

XYZ is a small retail business operating in the Republic of Ireland. It is an owner-managed enterprise, which has been under its current ownership for the last decade, during which time the business has grown significantly in terms of size, customer base and turnover. There are eleven employees working in XYZ, including the owner, three full-time staff, four staff operating on a three-day week and three part-time third level students. All employees are female and aged between 26 and 50 years, excepting the part-time students. The majority of staff have not had formal IS training, although a number are currently pursuing Microsoft's European Computer Drivers Licence (ECDL) certification, an in-store training initiative supported by XYZ's owner. The studied case characteristics reflect those of the literary findings. XYZ has a simple organisational structure (Mintzberg *et al.*, 1998), whereby a shop floor manager supports the owner in the day-to-day business operations. All decision making and strategic planning rests with owner (Brown, 2000), and the organisational culture is semi-formal, reflecting the owner's personal preference (Lange *et al.*, 2000; Smallbone and Wyer, 1994). Thus, XYZ's internal processes include documented quarterly staff meetings and individual employee reviews, along with the maintenance of a work diary, recording details of notable events, scheduled tasks and operational decisions on a daily basis. Finally, the observed IS installation was described as a "plug and play" scenario where an engineer would install the system on-site at 8 am on day one, make necessary software amendments and be ready for business at 9 am on the same day. The engineer would then provide one day's staff training, followed by one day's on-site system observance. The system's purpose was to automate ordering, product inspection, inventory control, loss management and customer relationship management, accurately and efficiently, using a single information system.

Case findings

At a national level, recent IS implementations in XYZ's industry have been led by a dominant supplier's requirement for electronic connectivity, consistent with the literary findings of Davenport (1998) and Saunders and Hart (1993), among others. This system facilitates a link to automated ordering and procurement systems within the supplier organisation. The IS purchase decision was made by XYZ's owner, reinforcing Brown's (2000) findings that decision making authority resides with the small business owner. Interview results confirm that XYZ's IS purchase decision was based on the pressure exerted by powerful industry partners, coupled with the need for industrial inclusion as a small business owner (reflecting the findings of Davenport (1998) and Galbraith (1973) in the literature review).

In 2001, XYZ had to select an IS solution from only two supplier-compliant systems. The implementation proved consistent with Nicholas (1996) and Proudlock *et al.*'s (1999) research which found that communications, training and support components are awarded secondary importance to the technical aspects of IS installations. During the installation, the on-site installation engineer did not show any apparent empathy for the discomfort felt by the staff regarding the new technology, noting that they would have to get used to the technology to operate the system. On observation, the engineer used technical terminology when describing the system operation and control to XYZ's employees and used company specific acronyms to describe both software and hardware during the training process. Time pressure accentuated this issue, as

only one day was allocated to staff training and over half this allocation was given over to technical issues which arose at the time of implementation, something that was not anticipated prior to the installation. This is despite training being acknowledged as a critical success factor (Ballantine *et al.*, 1998; Storey and Cressy, 1995; Thong, 2001) in this environment. In this context, XYZ's owner felt that it should have been easier for the engineer to train the staff, considering that the employees had been using an in-store IS for the preceding 18 months: stating that "even though the touch screen and scanner were new, the IS philosophy was well established. Surely a team without any experience would have had a longer [and steeper] learning curve". On reflection, the owner's reaction appears to reinforce Gable's (1991) findings that small firms often over-estimate an engineer's ability to address the socio aspects of an IS installation.

On observation, the small firm owner's role is one of tension between the technology itself, the firm's immediate environment and the individual staff members. As XYZ's owner stated: "Small firms have senior managers [owners] who must be multi-skilled in order to run the business. IS skill levels are at a fundamental level and IS suppliers appear to overlook that fact. We [the owners] are the ones who must motivate staff to use the system, despite open and underlying resistance on their part" (February 2002). This point is consistent with Iles (1994) and Markus's (1983) view that the owner has the authority to directly influence their staff and is the one most likely to succeed in overcoming IS resistance in a small firm environment. Furthermore, XYZ's owner regularly discussed the underlying lack of time associated with running a business, which often created frustration regarding their own role: "a lot of my peers are getting out [due to] the pressure of being pulled in all directions" (June, 2003). These findings suggest that the resource poverty identified by Welsh and White (1981); Hill and McGowen (1999) and Roper (1999) has a significant impact on small business management.

XYZ's owner realised that there would be a learning curve associated with this installation (as per Kraut *et al.*, 1999), citing anticipated "teething issues as employees and management come to grips with the new system and resultant procedures" in the organisation's 2000 business plan. The owner restated this concern in January 2002, stating that there was a "body of work to be done to get the staff on board. The staff are still reluctant to use the system and seem to circumvent it wherever possible. We are not getting the [system] benefits as a result". Also, based on observation and direct feedback, XYZ's employees found that the necessary attention needed to learn how to operate the new system during working hours detracted from customer attention, and led to employee stress as a result. Thus, technology-driven change does impact workforce behaviour (Ketchum and Trist, 1992; Manz and Stewart, 1997). These findings are in conflict with the fact that XYZ was told by the IS vendor that the benefit of their system was that there was "no learning curve", which, in XYZ's owner's words "Was blind faith on my part – change always equals learning" (June 2002). Interestingly, interviews with XYZ's owner and Shop Floor Manager in December, 2002 revealed that many of the issues identified in early 2002 had greatly improved in the interim months, suggesting that XYZ's experiences echo Kraut *et al.*'s (1999) findings that early negative IS effects might merely be transient given that many firms must face a learning curve in the use of mediums before reaping their benefits. The underlying issue is that the learning curve for a general-purpose tool, such as a

computer system, may be much longer than initially anticipated by both the small business owner and the IS vendor in this case.

Following the initial post-implementation period, XYZ's owner did highlight the fact that while staff were comfortable with about two thirds of the system by June 2002, optimum learning would require second and third round training, held at six monthly intervals, consistent with the view that technology is an evolving reality, requiring continual learning on the part of the individual and the organisation to ensure maximum IS benefit (Orlikowski *et al.*, 1995). Following a general staff meeting in June 2002, an open forum was held to allow staff to discuss IS related issues, providing for the open communication channels recommended by Bell and Menguc (2004). Notably, this session highlighted previously unidentified communications issues within the firm. Subsequently, training sessions on each aspect of the system were developed by the owner, in conjunction with the shop floor manager, facilitating the inclusive learning environment outlined by Harvey *et al.* (1998), and supported by Stokes (2001).

In the following six months, individual employees tested each other in IS operations on a bi-monthly basis using the above training sessions for guidance, an approach much like the one advocated by Cohen and Levinthal (1990); Darch and Lucas (2002) and Stokes (2001) in the literature review. XYZ's owner and shop floor manager both believe that this process provided far higher employee cooperation, self motivation and general satisfaction among the staff (an outcome anticipated by Watkins and Marsick (1992) and Iles (1994)). In essence, this process reinforced personal relationships within XYZ, confirming Scase and Goffee's (1987) findings. As articulated by XYZ's owner: "the training has been unbelievable, maybe it's because I have been there more often, but the comfort level is there – all the staff really benefited in confidence, you'd hear them say 'is this what I do?' to each other – team building stuff" (December 2002).

Thus, the empowered training/learning philosophy adopted in XYZ contributed to the learning initiative's success by ensuring open information transfer both up and down the organisation (Bell and Menguc, 2004; Harvey *et al.*, 1998), ultimately resulting in changed individual and organisational behaviour (Wyer *et al.*, 2000). These findings reinforce the ethos that communication and training combined can overcome individual learning barriers and provide the optimum learning environment, as supported by Gibbons (2002), Harvey *et al.* (1998), and Hirschheim (1985), among others. This view was reinforced by employee feedback to the authors during site visits: "There is no longer a sense of [IS] panic, the screen can go blank and it's grand. I can always ask someone else how to fix it" (September 2003).

Finally, acknowledgement of Orlikowski *et al.*'s (1995) view of modern business as an "evolving reality" was evident in many of the conversations with XYZ's owner and employees. Although all enjoyed the new level of system comfort afforded by the complimentary learning programme detailed above, many indicated that this state of euphoria may be short lived. As articulated by XYZ's owner: "There is a real team atmosphere, but [pause] that will turn [as] expectations will increase. [For now] there is only annoyance when it [the system] doesn't work" (September 2003).

A learning framework for the small business environment

On investigation, Crossan *et al.*'s (1997, 1999) learning framework offers a baseline from which framework development can begin in this research study, as it outlines the organisational levels that contribute to learning in a business setting, all be it from a large

firm perspective. Consequently, the authors have adapted Crossan *et al.*'s framework to reflect the specific contextual issues relevant in a small business environment, as evidenced in this research study. These are presented in Figure 2 "Interim small business learning framework" and Figure 3 "Small business learning framework".

Figure 2 presents the construct as structured relationships between the external environment, the organisation/owner and the individual small business employee, with external macro environmental influences providing the impetus and rationale for small businesses to develop internal learning processes. The contextual issues specifically relating to a small business have been accommodated in Figure 2 as follows:

- a – The strong bargaining power of large trading partners is an important influence in driving the adoption of new information systems in small firms (Davenport, 1998; Hart and Saunders, 1997), as evidenced in this research study. This issue can create an enforced learning milieu where the small firm is essentially influenced by its immediate environment, particularly suppliers, customers and competitors (Hart and Saunders, 1997). Vendor dependency is also a notable risk in this context (Senn and Gibson, 1981). Thus, contextual factors force the small business to rapidly adopt new learning and impose it upon its members in order to meet dynamic environmental demands.

- b – The small firm's simple structure (Mintzberg *et al.*, 1998) and unique culture often results in a flat organisation, where decisions emulate from the owner/manager at the centre and the decision making process is more intuitive and less dependent on formal decision models (Brown, 2000) as a result. Thus, the small business owner has the authority to directly influence all staff
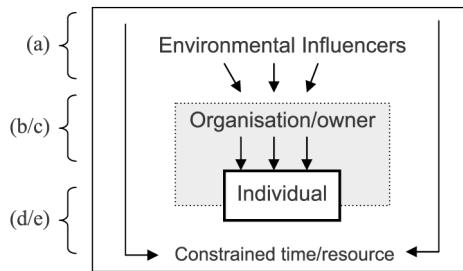

Figure 2.
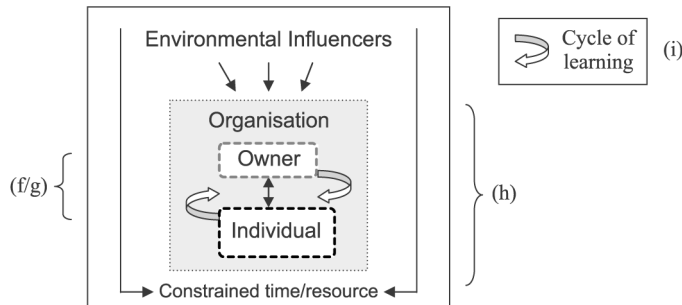Interim small business learning framework

Figure 3.
Small business learning framework

members (Markus, 1983), especially when the owner has hands-on involvement. As articulated by Scase and Goffee (1987, p. 70): "it is clear that small businesses, as developed by their owners, are organised on the basis of informal and flexible personal relationships".

- c – Small businesses tend to employ generalists rather than specialists (Gable, 1991) often without formal internal departmentalisation (Mintzberg *et al.*, 1998); accordingly, the group dynamic detailed in Crossan *et al.*'s (1997, 1999) framework may be rendered superfluous in this setting.

- d – Small firms suffer from "resource poverty": Watkins and Marsick's (1992) propose that [you] need reserves of employee knowledge, willingness to learn, technology to support learning and financial resources dedicated to learning in order to embed learning behaviour in an organisation. However, it has long been accepted that small firm's suffer from resource poverty, (for example: Hill and McGowen, 1999; Roper, 1999; Welsh and White, 1981, among others) so there may be neither the time, expertise nor finance required to facilitate emergent learning in this environment. This time constraint often manifests itself in owners who are primarily interested in immediately applicable learning (Chaston *et al.*, 1999; Lawless *et al.*, 2000) as they are mainly concerned with the day-to-day demands of running their business, and this short-term focus can result in a lack of emphasis on staff training (Keep, 1989; Storey and Cressy, 1995). Therefore, it is important to choose the appropriate time, pace and place of learning to optimise the effectiveness of training for small firms (Darch and Lucas, 2002), as evidenced by the customised training programme success in the studied case. Specifically, bite sized tailored courses coupled with flexible and convenient delivery (Stokes, 2001) should facilitate an optimum learning environment in this regard.

- e – Difficulties can arise anchoring learning. Simon (1991) suggests that all learning takes place inside human heads and organisations can only learn by leveraging individual learning. In this milieu, learning can be defined as a lasting change in capability that will be applied in the workplace. However, if the individual is unable or unwilling to anchor learning (Crossan *et al.*, 1999) then the learning objective is likely to fail as training only has use if it can be transferred into changed individual and organisational behaviour (Wyer *et al.*, 2000), as it is the transition of learning to behaviour that adds value and produces development (Gibbons, 2002). Curtailing learning time may amplify this issue, as early negative effects might merely be transient given that many firms must face a learning curve in the use of mediums before reaping their benefits (Kraut *et al.*, 1999).

Figure 3 explains some of the micro-level issues at play in the small business learning environment. It considers the unrelenting interaction between the small business owner and environmental influences, between the owner/organisation and the individual employees, and between all players and technology. The challenge for organisations is to manage the tension between what is known, what must be retained, and what needs to be learned. The authors point to three pertinent issues shaping micro-level interactions: the dynamic role played by the owner, the need for an adequate communication infrastructure to be in place to support learning, and finally, recognition that learning takes place at the owner and individual level in a more integrated and cohesive manner than would be the case in a large organisation setting:

- f – The role of the owner is pivotal, as their attitude in relation to learning needs will dictate the organisation's learning view, particularly in the context of resource constraints. While training is regularly cited as a critical IS success factor in the small firm milieu (for example: Ballantine *et al.*, 1998; Storey and Cressy, 1995; Thong, 2001), the owner must communicate its relevance to the individual employee's work (Iles, 1994) in order to motivate staff to learn in this environment. In essence, it is the owner that is most likely to succeed in overcoming resistance to IS in a small firm environment (Markus, 1983), by creating an impetus to motivate barrier release in this environment (Iles, 1994). Specifically, XYZ's owner drove the open forum and the customised training programme in the studied case, thereby creating the environment required to promote individual learning in this firm.

- g – An adequate communication infrastructure must be in place. A bi-directional arrow has been incorporated between the individual, and the owner/organisation to acknowledge internal communication needs. Notably, XYZ's open forum (June 2002) exposed previously unidentified individual learning needs, reinforcing the view that communications must be open and inclusive in order to motivate anchored learning in this setting (as advocated by Hirschheim, 1985 and Thong, 2001, among others). In this context, information is essential for learning to take place, (Harvey *et al.*, 1998) as a learning initiative's success will depend on information transfer both up and down the organisation (Bell and Menguc, 2004).

- h – Learning integration at the owner/employee level. The lines between the individual, the owner and the organisation are broken, acknowledging the collective process that links individuals to each other and their organisation. If people are the basic unit of learning (Crossan *et al.*, 1997), the ultimate goal is to "feed-forward" individual learning from the individual to the organisation (Cohen and Levinthal, 1990). Otherwise, any learning that does occur, will, by definition, remain at the individual level (Bell and Menguc, 2004). Thus, addressing individual learning barriers is a primary concern (Iles, 1994), as evidenced in this research study. User involvement and training are regularly cited as a means for overcoming such obstructions in terms of IS adoption (for example: Hirschheim (1985); Storey and Cressy (1995); Thong (2001)). Unfortunately, it is frequent practice to regard communications, training and support components as tag on activities to be prepared for in the last days and weeks of the IS implementation (Nicholas, 1996; Proudlock *et al.*, 1999). Notably, IS resistance was visibly amplified in XYZ by the IS trainer's apparent lack of empathy for the employees' discomfort when using the system, and subsequent learning progress required direct owner intervention to overcome IS avoidance following the system installation and initial training in the studied firm.

- i – Cycle of learning: While the customised training programme reaped substantial learning rewards for XYZ, the case owner acknowledged that learning is an outgoing requirement within the firm, particularly in light of XYZ's competitive environment. Therefore, the framework recognises what Orlikowski *et al.* (1995) describe as the "evolving reality of modern business", acknowledging the fact that individual and organisational learning will have to continually occur (Yates *et al.*, 1999) to be of long-term value to the firm.

In summary, whilst Crossan *et al.*'s (1997, 1999) *Organisational Learning Framework* describes very effectively the learning levels relevant in a large organisational context, with the "group" aggregating individual learning and acting as the intermediary stage in the pursuit of company wide learning, it is not reflective of a learning process in a small (11 to 50 employees) business context. Thus, the authors have drawn on pertinent literature and adapted Crossan's framework to reflect the specific contextual issues relevant to the small business, such as insufficient resources, weak positional power relative to suppliers and simple structure. One of the key differences between large and small business is a more simplified internal learning environment, with the critical learning interface located between the owner and the individual. Group aggregate learning becomes subsumed in the collective process that links individuals to the organisation. A further disparity relates to the primary driver of learning in each business context. In larger organisations, the learning process is buffered to a large degree from pressures exerted by the external environment including, vendors and competitors, and learning evolves from the individual through the group and eventually emerges as organisational understanding, at least in theory. Learning is shaped by internal factors and does not appear to be inhibited by the same time, resource or industry power constraints faced by small firms. Consequently, in a large organisation, the learning dynamic is enhanced by the facilitative nature of the immediate organisational environment. In contrast, the external environment exerts the primary driving force of learning in a small business, via regulations or dominant partner power. Time and resource constraints are significant and can impede the learning process in this milieu if not correctly managed. Specifically, such constraints can result in an individual's learning remaining abstract rather than becoming embedded in the organisation. Subsequently, the small business owner, through motivating staff, advocating employee involvement and leading the learning process, can overcome some of the unique difficulties that are synonymous with a small business environment.

Conclusion

In light of the pertinent literature and case study findings presented above, the authors contend that the proposed small business learning frameworks (Figures 2 and 3) are indeed a fair and accurate representation of the small business learning environment. They acknowledge that small businesses generally hold negligible industry power and therefore change is often enforced from outside the organisation. Internally, as decisions normally emulate from the owner, organisational change and resultant learning is instigated in a top down approach from owner to individual. However, the boundaries between learning taking place at the owner/individual interface are less defined and the resultant learning process tends to proceed in a collective integrative manner. Due to the small firm's simple structure and limited size, formal learning sub-groups are unlikely to emerge in this environment. Finally, learning time is severely curtailed by external environmental influences and internal resource constraints. All of these factors contribute to the establishment of learning barriers on the part of the individual employee. These barriers must be identified and resolved at the individual level in order for individual and organisational learning to occur, and successful barrier release requires conscious owner intervention in this environment. The authors through empirical evidence generated in the studied case, have identified a

further three facilitators of IS learning, which could be considered by small business owners when attempting to introduce new technology. These include; customised management and staff training, the development of an IS training programme that facilitates interaction between staff and on-going interaction with the technology and finally adequate supporting communication channels which encourage user involvement.

This research study sought to establish a small business learning framework by exploring the unique learning aspects in this environment, and therefore contributes to the body of existing knowledge concerning organisational learning, IS management and small firm research. The resultant framework's value is fortified by building on earlier research, specifically Crossan *et al.*'s (1997, 1999) organisational learning framework, while acknowledging the unique criteria associated with the small business environment. As this framework was developed based on a single case, similar research may be conducted on additional case studies to determine the learning dynamic in alternative settings and business environments. It is anticipated that supplementary research studies will facilitate the refinement of the framework to incorporate learning processes at each organisational level, ultimately resulting in a learning model for the small firm environment.

Note

1. A small business can be defined as an organisation that employs between 11 to 50 people (Lawless *et al.*, 2000), while a micro-enterprise employs fewer than ten people.

References

Ballantine, J., Levy, M. and Powell, P. (1998), "Evaluating information systems in small and medium-sized enterprises: issues and evidence", *European Journal of Information Systems*, Vol. 7, pp. 241-51.

Bell, S.J. and Menguc, B. (2004), "From salesperson learning to organizational learning: the contingent role of information processing capability", working paper, University of Cambridge, Cambridge.

Blackburn, R.M. and Mann, M. (1980), *The Working Class in the Labour Market*, Macmillan, London.

Bourdieu, P. (1993), "Responses", in Hamel, J., Dufour, S. and Fortin, D. (Eds), *Case Study Methods*, Sage Publications, Newbury Park, CA.

Brown, J.S. and Duguid, P. (1991), "Organizational learning and communities-of-practice: toward a unified view of working, learning, and innovation", Special Issue: Organizational Learning: Papers in honor of (and by) James G. March, *Organisation Science*, Vol. 2, pp. 40-57.

Brown, K.L. (2000), "Analyzing the role of the project consultant: cultural change implementation", *Project Management Journal*, Vol. 31 No. 3, pp. 52-5.

Burgess, R. (1980), *Field Research: A Sourcebook and Field Manual*, Allen & Unwin, London.

Chaston, I., Badger, B. and Sadler-Smith, E. (1999), "Organisational learning: research issues and application in SME sector firms", *International Journal of Entrepreneurial Behaviour & Research*, Vol. 5 No. 4, pp. 191-203.

Cohen, W.M. and Levinthal, D.A. (1990), "Absorptive capacity: a new perspective on learning and innovation", *Administrative Science Quarterly*, Vol. 35, pp. 128-52.

Crede (Centre for Research, Education, Diversity and Excellence) (2006), *Glossary*, available at: http://crede.berkeley.edu/tools/glossary.html (accessed June 16 2006).

Crossan, M.M., Lane, H.W. and White, R.E. (1997), *Organizational Learning: Toward a Theory*, Working Paper Series, Richard Ivey School of Business, London, pp. 98-05 and 1-54.

Crossan, M.M., Lane, H.W. and White, R.E. (1999), "An organizational learning framework: from intuition to institution", *Academy of Management*, Vol. 24 No. 3, pp. 522-37.

Dalton, M. (1959), *Men Who Manage*, Wiley, New York, NY.

Dandridge, T.C. (1979), "Children are not 'little grown-ups': small business needs its own organisational theory", *Journal of Small Business Management*, Vol. 17 No. 2, pp. 53-7.

Darch, H. and Lucas, T. (2002), "Training as an e-commerce enabler", *Journal of Workplace Learning*, Vol. 14 No. 4, p. 148.

Davenport, T.H. (1998), "Putting the enterprise into the enterprise system", *Harvard Business Review*, Vol. 76 No. 4, p. 121.

Deakins, D. and Freel, M. (1996), *Developing and Using Case Studies of SMEs in a Learning Environment, Small and Medium Sized Enterprises in a Learning Society*, University of North London, London.

Denzin, N. (1970), *The Research Art in Sociology*, Butterworth, London.

Dover, P.A. (2003), "Change agents at work: lessons from Siemens Nixdorf", *Journal of Change Management*, Vol. 3 No. 3, pp. 243-57.

Down, S. (1999), "Owner-manager learning in small firms", *Journal of Small Business and Enterprise Development*, Vol. 6 No. 3, pp. 267-80.

Eisenhardt, K. (1989), "Building theories from case study research", *Academy of Management Review*, Vol. 14 No. 4, pp. 532-50.

Finger, M. (1999), "The concept of the learning organisation applied to the transformation of the public sector: conceptual contributions for theory development", in Easterby-Smith, M., Burgoyne, J. and Araujo, L. (Eds), *Organisational Learning and The Learning Organisation*, Sage, London.

Gable, G. (1991), "Consultant engagement for computer system selection: a pro-active client role in small businesses", *Information Management*, Vol. 20 No. 2, pp. 83-93.

Galbraith, J.K. (1973), *Economics and the Public Purpose*, Houghton Mifflin, Boston, MA.

Gibbons, L. (2002), "Team strategies for success: doing what counts in education", *International Journal of Educational Management*, Vol. 16 Nos 4/5, p. 257.

Hart, P. and Saunders, C. (1997), "Power and trust: critical factors in the adoption and use of electronic data interchange", *Organization Science*, Vol. 8 No. 1, pp. 23-42.

Harvey, M., Palmer, J. and Speier, C. (1998), "Implementing intra-organizational learning: a phased-model approach supported by intranet technology", *European Management Journal*, Vol. 16 No. 3, pp. 341-54.

Henfridsson, O. and Soderholm, A. (2000), "Barriers to learning: on organizational defenses and vicious circles in technological adaptation", *Accounting Management & Information Technologies*, Vol. 10, pp. 33-51.

Hill, J. and McGowen, P. (1999), "Small business and enterprise development: questions about research methodology", *International Journal of Entrepreneurial Behaviour & Research*, Vol. 5 No. 1, pp. 5-18.

Hirschheim, R.A. (1985), "User experience with and assessment of participative systems design", *MIS Quarterly*, Vol. 9 No. 4, pp. 295-304.

Iles, P. (1994), "Developing learning environments: challenges for theory, research and practice", *Journal of European Industrial Training*, Vol. 18 No. 3, pp. 3-9.

Irani, Z., Ezingeard, J., Gieve, R.J. and Race, P. (1999), "A case study strategy as part of an information systems research methodology: a critique", *International Journal of Computer Applications in Technology*, Vol. 12 No. 2, pp. 190-8.

Johnson, S. (2002), "Lifelong learning and SMEs: issues for research and policy", *Journal of Small Business and Enterprise Development*, Vol. 9 No. 3, pp. 285-95.

Keep, E. (1989), "A training scandal", in Sisson, K. (Ed.), *Personnel Management in Britain*, Blackwell, Oxford.

Kelliher, F. (2005), "Interpretivism and the pursuit of research legitimisation: an integrated approach to single case design", *The Electronic Journal of Business Research Methodology*, Vol. 3 No. 2, pp. 123-32.

Kelly, G.A. (1955), *The Psychology of Personal Constructs*, Vols 1 & 2, Norton, New York, NY.

Ketchum, L.D. and Trist, E. (1992), *All Teams are not Created Equal: How Employee Empowerment Really Works*, Sage Publications, Newbury Park, CA.

Klein, H.K. and Myers, M.D. (1999), "A set of principles for conducting and evaluating interpretive field studies in information systems", *MIS Quarterly*, Vol. 23 No. 1, pp. 67-94.

Kraut, R., Steinfield, C., Chan, A.P., Butler, B. and Hoag, A. (1999), "Coordination and virtualization: the role of electronic networks and personal relationships", *Organization Science*, Vol. 10 No. 6, pp. 722-40.

Lange, T., Ottens, M. and Taylor, A. (2000), "SMEs and barriers to skills development: a Scottish perspective", *Journal of European Industrial Training*, Vol. 24 No. 1, p. 5.

Lawless, N., Allan, J. and O'Dwyer, M. (2000), "Face-to-face or distance training? Two different approaches to motivate SMEs to learn", *Education + Training*, Vol. 42 Nos 4/5, pp. 308-17.

Leavy, B. (1994), "The craft of case-based qualitative research", *Irish Business and Administrative Research*, Vol. 15, pp. 105-18.

Manz, C.C. and Stewart, G.L. (1997), "Attaining flexible stability by integrating total quality management and sociotechnical systems theory", *Organization Science*, Vol. 8 No. 1, pp. 59-70.

Markus, M.L. (1983), "Power, politics and MIS implementation", *Communications of the ACM*, Vol. 26 No. 6, pp. 430-44.

Mintzberg, H., Ahlstrand, B. and Lampel, J. (1998), *Strategy Safari*, Prentice-Hall Financial Times, London.

Mumford, E. (2001), "Action research: helping organizations to change", in Trauth, E.M. (Ed.), *Qualitative Research in IS: Issues and Trends*, Idea Group Publishing, London.

Nicholas, D. (1996), "Information system vs information user", *Managing Information*, Vol. 3 No. 6, pp. 26-33.

Nonaka, I. (1994), "A dynamic theory of organizational knowledge creation", *Organization Science*, Vol. 5, pp. 14-37.

Orlikowski, W.J. and Baroudi, J.J. (1991), "Studying information technology in organizations: research approaches and assumptions", *Information Systems Research*, Vol. 2 No. 1, pp. 1-28.

Orlikowski, W.J., Yates, J., Okamura, K. and Fujimoto, M. (1995), "Shaping electronic commerce: the metastructuring of technology in the context of use", *Organization Science*, Vol. 6 No. 4, pp. 423-44.

Pettigrew, A. (1990), "Longitudinal field research on change: theory and practice", *Organization Science*, Vol. 1 No. 3, p. 267.

Philliber, S.G., Schwab, M.R. and Samsloss, G. (1980), "Social research: guides to a decision making process", *Case Study Research – Design and Methods*, Peacock, Itasca, IL.

Pil, F.K. and Holweg, M. (2003), "Exploring scale: the advantages of thinking small", *MIT Sloan Management Review*, Vol. 44 No. 2, pp. 33-9.

Proudlock, M., Phelps, R. and Gamble, P. (1999), "IT adoption strategies: best practice guidelines for professional SMEs", *Journal of Small Business & Enterprise Development*, Vol. 6 No. 3, pp. 240-52.

Richter, I. (1998), "Individual and organizational learning at the executive level", *Management Learning*, Vol. 29 No. 3, pp. 299-316.

Roper, S. (1999), "Modelling small business growth and profitability", *Small Business Economics*, Vol. 13 No. 3, pp. 235-52.

Ruiz-Mercader, J., Meroño-Cerdan, A.L. and Sabater-Sánchez, R. (2006), "Information technology and learning: their relationship and impact on organisational performance in small businesses", *International Journal of Information Management*, Vol. 26, pp. 16-29.

Saunders, C. and Hart, P. (1993), "Electronic data interchange across organizational boundaries: building a theory of motivation and implementation", paper presented at the Administrative Sciences Association of Canada 21st Annual Conference, Lake Louise.

Scase, R. and Goffee, R. (1987), *The Real World of the Small Business Owner*, Croom Helm, London.

Senn, J.A. and Gibson, V.R. (1981), "Risks of investment in microcomputers for small business management", *Journal of Small Business Management*, Vol. 19 No. 3, pp. 24-32.

Simon, H.A. (1991), "Bounded rationality and organizational learning", *Organization Science*, Vol. 2, pp. 125-34.

Slack, F. and Rowley, J. (2001), "Observation: perspectives on research methodologies for leisure managers", *Management Research News*, Vol. 24 Nos 1/2, pp. 35-42.

Smallbone, D. and Wyer, P. (1994), "SMEs and exporting-developing: an analytical framework", paper presented at the Small Business and Enterprise Development Conference, Manchester.

Spitler, V.K. (2005), "Learning to use IT in the workplace: mechanisms and masters", *Journal of Organizational and End User Computing*, Vol. 17 No. 2, pp. 1-24.

Stake, R.E. (1995), *The Art of Case Study Research: Perspectives and Practice*, Sage Publications, London.

Stokes, A. (2001), "Using telementoring to deliver training to SMEs: a pilot study", *Education + Training*, Vol. 43 No. 6, pp. 317-24.

Storey, D. and Cressy, R. (1995), *Small Business Risk: A Firm and Bank Perspective*, working paper series, Warwick Business School, Coventry.

Sullivan, R. (2000), "Entrepreneurial learning and mentoring", *International Journal of Entrepreneurial Behaviour & Research*, Vol. 6 No. 3, pp. 160-75.

Sutton, R. and Callahan, A. (1987), "The stigma of bankruptcy: spoiled organizational image and its management", *Academy of Management Journal*, Vol. 30, pp. 405-36.

Taylor, D.W. and Thorpe, R. (2004), "Entrepreneurial learning: a process of co-participation", *Journal of Small Business and Enterprise*, Vol. 11 No. 2, pp. 203-10.

Templeton, G.D., Lewis, B.R. and Snyder, C.A. (2002), "Development of a measure for the organizational learning construct", *Journal of Management Information Systems*, Vol. 19 No. 2, p. 175.

Thong, J.Y.L. (2001), "Resource constraints and information systems implementation in Singaporean small businesses", *The International Journal of Management Science*, Vol. 29, pp. 143-56.

Trauth, E.M. (2001), *Qualitative Research in IS: Issues and Trends*, Idea Group Publishing, London.

Tsui-Auch, L.S. (2003), "Learning strategies of small and medium-sized Chinese family firms: a comparative study of two suppliers in Singapore", *Management Learning*, Vol. 34 No. 2, p. 201.

Watkins, K.E. and Marsick, V.J. (1992), "Building the learning organization: a new role for human resource developers", *Studies in Continuing Education*, Vol. 14 No. 2, pp. 115-29.

Welsh, J.A. and White, J.F. (1981), "A small business is not a little business", *Harvard Business Review*, Vol. 59 No. 4, pp. 18-32.

Wyer, P., Mason, J. and Theodorakopoulos, N. (2000), "Small business development and the learning organisation", *International Journal of Entrepreneurial Behaviour & Research*, Vol. 6 No. 4, pp. 239-59.

Yates, J., Orlikowski, W.J. and Okamura, K. (1999), "Explicit and implicit structuring of genres in electronic", *Organization Science*, Vol. 10 No. 1, pp. 83-103.

Yin, R.K. (1984), *Case Study Research*, Sage Publications, Newbury Park, CA.

Yin, R.K. (1994), *Case Study Research – Design and Methods*, 2nd ed., Applied Social Research Methods Series, Vol. 5, Sage Publications, Newbury Park, CA.

Further reading

Remenyi, D., Williams, B., Money, A. and Swartz, E. (1998), *Doing Research in Business and Management, An Introduction to Process and Method*, Sage Publications, London.

About the authors

Felicity Kelliher is a Lecturer in Management Studies at the School of Business in Waterford Institute of Technology, Ireland. She holds a degree in business and spent ten years working in the IS sector before embarking on an academic career. Her research interests include learning in the small business environment, National and International small business cooperative networks and entrepreneurial activity in the Republic of Ireland. She has recently completed a PhD in Queen's University of Belfast, investigating the employee learning impact of a critical incident in the micro business retail environment. Felicity Kelliher is the corresponding author and can be contacted at: fkelliher@wit.ie

Joan Bernadette Henderson is a lecturer in Business Policy and Operations Management at the School of Management and Economics in Queen's University of Belfast. She holds a degree in engineering and spent five years working in the engineering sector in Northern Ireland before embarking on an academic career. She has published in a range of International and National rated journals, including, *Regional Studies, International Journal of Technology Management, International Journal of Innovation and Technology Management* and *International Journal of Quality and Reliability Management*. Her research interests are learning, transnational strategy and business development and the role of social capital in business development.