

Recognising the challenge: how to realise the potential benefits of ICT use in SMEs?

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Abstract There is evidence to suggest that small businesses often start with innovative business ideas but fail within the first three years because the proprietors lack the expertise to make them thrive. In this context, it has been suggested that SMEs would benefit from support to select suitable ICTs that can help them to make the most of their business potential. Such suggestions tend to overlook a need to design a system for use of these ICTs within the context of a particular business. Technology alone solves no problems. Managers need to develop relevant expertise to exploit all the assembled resources available to them, and design of an Information System that will be experienced as useful is a prerequisite for successful development of business opportunities. While the technical aspects of e.g. data processing and storage can be consigned to a contractor, responsibility for a customer's experience in interacting with the business cannot. It is necessary to design business processes and technologies in synergy, paying as much attention to design of effective use of ICTs as to the technologies themselves. The authors believe it is vital for the proprietors of small to medium-sized enterprises to consider what may be the unintended consequences of investment in ICTs and to devote due time and effort to development of effective systems for use.

Introduction

There is evidence to suggest that small businesses often start with innovative business ideas but fail within the first three years because the proprietors lack the expertise to make them thrive [1,2]. In this context, it has been suggested that SMEs would benefit from support to select suitable ICTs that can help them to make the most of their business potential. Such suggestions tend to overlook a need to design a system for use of these ICTs within the context of a particular business. Technology alone solves no problems. However sophisticated the ICTs selected, they will not take over the management of the business from the proprie-

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tors or make difficult decisions on their behalf. Managers need to develop relevant expertise to exploit all the assembled resources available to them, and design of an Information System that will be experienced as useful is a prerequisite for successful development of business opportunities.

Use, Usability and Usefulness

In relation to an Information System, 'usefulness' as perceived by interested actors will depend in part upon the *purpose* for which the system is created together with effective design of the system for use. This is context dependent and varies from 'user' to 'user'. Taking the example of a system for use in a bank, it can be seen that perceptions of usefulness will vary. A customer of the bank sees it as a system for providing her with financial services. She will wish to interact with bank ICT systems designed to support casual use for specific, task-related purposes, e.g. checking account balances, requesting financial services, withdrawing cash. However, an employee sees the bank as a means for her to earn a livelihood by exercising her professional skills. Her interactions with bank ICT systems are not casual, but habituated as part of her work role. They may involve data entry, processing, modelling, interpretation and reporting/communication. Clearly, concepts of 'usefulness' of these two different stakeholders are unlikely to coincide completely. Other categories of stakeholder – directors or shareholders, for instance, will have perceptions of purpose for which bank systems are created that are different again. Furthermore, within these categories of stakeholder, individual perceptions and needs differ. Maslow's hierarchy of needs [3] suggests that use of systems can help to fulfil individual needs at different levels. An employee interacting with the bank wishes to fulfil physical needs (to feed and clothe herself), need for belongingness and esteem (as part of a community of practice and social group), self-actualisation (to display capability and enjoy intellectual exercise). Furthermore, different roles suit different people accordingly – e.g. one person likes to travel, another likes to interact with customers, another prefers the back office. Reflecting on work by Mumford, for example, it can be seen to be important that all interested actors are willing to engage with processes of design if 'useful' systems are to be created [4,5]; purpose of being part of system. Motivation to participate is clearly lined to the factors that motivate people in their work roles. For some people a need for security is paramount. They may dislike change and not want to be challenged by the work. Other people may have opposite motivators – the work is its own reward because it is interesting and enables them to express themselves through their capabilities. Challenges and change may be welcome to them. Perception of 'usefulness' and willingness to engage in strategic decision-making will vary accordingly. Perspectives of what is important will vary with individual's motivation, e.g. a person may engage in redesigning a system to make it more effective for them in carrying out their work. They may be less interested in engaging in a similar project in order to improve overall resource efficiency in isolation from their role. Some people may engage because they are naturally compliant or

because they are encultured to co-operate with management within a paternalistic culture. See, for example, Mumford's description of a project in participative design at Rolls Royce Limited Derby Engine Group [6].

Closely linked to motivation is the concept of satisfaction. Deng et al [7], point to two dimensions to 'user satisfaction' relating to perceived utility and hedonic experience. These are also reflected in the Technology Acceptance Model which has been widely cited in relation to IS development initiatives [8]. However, in this context it is important to consider the concepts of 'user' and 'utility' and what they signify in this context. Nissen has highlighted the equivocal nature of the term 'user' [9], pointing out that most people engaged in professional endeavour do not regard themselves primarily as users of ICTs but as accountants, lawyers, surveyors, brokers, clerks, etc. To discuss them using such a one-dimensional term is to miss much of the richness of professional interactions so vital to co-creation of successful data systems. This point also reflects the view of Oliver [10], writing in the field of consumer behaviour, who emphasises that those who interact with ICTs are not simply 'users' but also consumers who seek for fulfilment of expectations for pleasure as well as utility. This last concept, derived from classical economics, is itself insufficient when contemplating creation of systems for use of ICTs. When use is considered, it is possible to neglect giving due weight to context of use as experienced by living individuals. Thus, designers of ICT artifacts often concentrate on use (what task the system is intended to support). 'Usability' factors are frequently considered important (how actors can be supported to use systems safely and pleasurably), but designers often ignore individual perceptions of 'usefulness' (why, and from whose point of view, engagement with an ICT systems is regarded as meaningful) because these are harder to reach – only the individuals themselves can shape their own requirements from ICT systems in relation to contextual dependencies that emerge from their own experiences [11,12].

Understanding and Supporting the Business Model

Exploitation of business opportunities is inextricably bound up with understanding of customer requirements. Business resources must be deployed in such a way that customer interactions are supported and encouraged in order to secure repeat business. The proprietor of a small business would traditionally interact with her customers face-to-face and enter into dialogue/negotiation to establish their requirements and those features of the transaction that will lead to customer satisfaction. (Figure 1 describes this process). Customers who are not satisfied in their interactions with a firm are likely to take their business elsewhere and this is particularly easy to achieve when interaction takes place via the Web. It has been suggested that customer satisfaction with business transactions is bound up with expectation, i.e. a customer who expects a good service and is disappointed will experience lower satisfaction levels than a customer who had no such expectations

in relation to the same serve [10]. Lin [13] provides evidence to suggest that success in B2C ecommerce requires online retailers to adopt a customer-oriented strategy to the same extent as a traditional retailer. *'on-line retailers should establish a service-oriented mechanism for transaction processes that provide satisfactory resolution of customer-related problems'* [13, p.14]. Deng, drawing upon Oliver [7,10] suggests *'in the context of IT usage, the formation of satisfaction response requires post-adoption experience and use of IT. Users must rely on their direct experience with the technology to form perceptions of technology performance and expectancy disconfirmation. Therefore, user experience with IT serves an antecedent of satisfaction/dissatisfaction response'* [7, p.3].

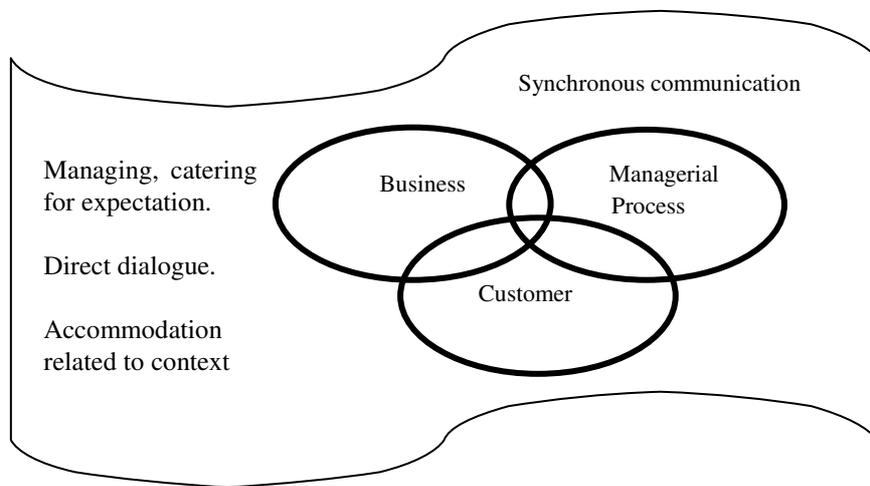


Figure 1: Interaction with customers in a traditional business model

Application of eCommerce is said to open up opportunities for small businesses by improving their market reach. Consider the example of a small company that engages a designer to set up an e-Commerce outlet for its product. However, well-designed the Website and associated tools, it is the proprietor who must find a way to deal with the inquiries and possible orders that it generates. A customer who does not get a satisfactory or timely response from an interaction via the Web is likely to be more dissatisfied than she would be had she contacted the company by conventional means [7]. Perceptions of size of business, personal service or quality of product are all blurred when the only contact is via the Web. Those who shop on-line are likely to have expectations of enhanced speed and efficiency arising from the instantaneous nature of the medium [7]. Thus, a small business may be overwhelmed with customer interactions with which it cannot cope. The proprietor has effectively embraced a business model s/he does not fully understand, and is faced with unexpected consequences. Yet there is evidence that some smaller firms establish a Web presence with little or no clear idea of its role within a cohe-

rent business model. For instance, in a survey of provincial legal practices in 2004, many respondents were unable to attribute a purpose to the firm's Website – they had one because everyone else did! [14]

This problem may be exacerbated by further unintended consequences when services are bought in from an outside contractor. An example could arise when using 'Cloud' resources to process and store data. While the technical aspects of data processing and storage can be consigned to a contractor, responsibility for e.g. protection of customers' personal data, cannot [16]. Just as the rewards of good customer service rightly belong to the business, so too do the consequences of failure to take responsibility for the quality of service delivered. This applies not only to products and services but to the design of the whole customer experience [13]. While these pitfalls may apply to companies of any size, it appears that SMEs are particularly susceptible. Research commissioned by consultants Partners in IT, in 2007, showed that IT was 'not being seen as a strategic tool by UK mid-sized organisations and is simply being used in an ad hoc way to support the business'. 28% of UK SMEs surveyed said that there was no IT strategy within their organization. A further 29% admitted to working to a loose, informal IT plan [15]

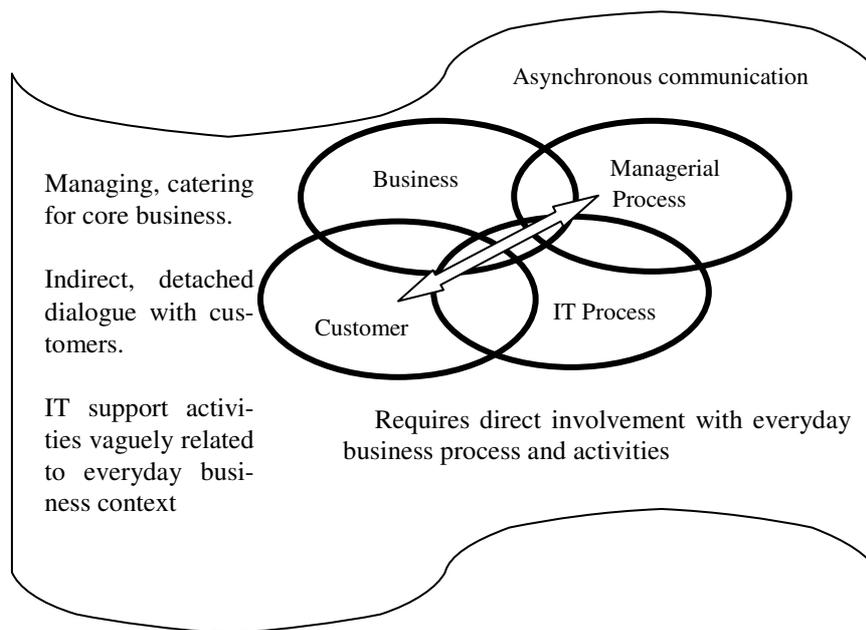


Figure 2: Interaction with customers using an eCommerce model

It is necessary to design business processes and technologies in synergy, paying as much attention to design of effective use of ICTs as to the technologies

themselves [4, 18, 19]. There are a number of specific dimensions to this problem. A small business may be presiding over its own, small value chain from inception of contact with a customer to satisfactory completion of a transaction and after-care. However, it is frequently the case that a smaller business is part of a wider, value system in which business-to-business interactions are important to its success. Within such a system, some players may be larger than others and able to manipulate their market power, e.g. in the case of a small producer and wholesaler of goods which supplies a large supermarket. Compatibility of systems, and design for effective B-2-B interaction may be crucial to survival of valuable business relationships, and ultimately the firm itself. A further dimension of the challenge to SMEs relates to traditional accounting concepts. The distinction between capital and revenue expenditure has long been regarded as problematic. HM Revenue & Customs guidance, for instance, refers to the judgment of Haldane in *John Smith & Son v Moore* [1921] 12TC266, p. 282, who cites economist, Adam Smith: *'Adam Smith described fixed capital as what the owner turns to profit by keeping it in his own possession, circulating capital as what he makes profit of by parting with it and letting it change masters'* [20]. If a firm purchases a new computer system, this will be recorded as capital expenditure in the accounts, i.e. it is regarded as an investment. However, activities necessary to create a system for use may often be regarded as business costs, which the firm will seek to minimize or avoid, e.g. time spent in shaping requirements or developing processes. However, avoiding such 'costs' can critically damage the capacity of a small business to exploit its opportunities effectively. Human nature can also cause a dilemma. Frequently, proprietors of smaller businesses are not professional managers but enthusiasts, skilled in their own area of work and interested primarily in exercising this expertise, be it, e.g. book binding, legal services, patisserie or SCUBA diving. While a proprietor may have made a considerable investment in building up her tacit knowledge of her core business, a great deal less effort may have been expended in developing business 'know-how'. This may have been confined to a short-course undertaken at the behest of a bank or other provider of business finance, or in some cases no formal training at all. In these circumstances, in order to maximize time spent in core business activities, a proprietor may think that she can pay for a 'quick fix' [1, 2], e.g. by outsourcing services or employing consultants to install and implement ICT systems. This approach on its own is unlikely to yield benefits in terms of systems that are found to be effective in use, ownership and participation by engaged actors in the development of a system for use is indispensable. They are part of the system to be 'designed'. In particular, a focus on design of artifacts, in isolation from the individual and organizational contexts within which use will occur, and their associated contextual dependencies, is likely to result in disappointment. The proprietor's tacit knowledge of her field, and of the value system of which the firm is part, must feed into development of capability to use an ICT system effectively for the benefit of customers. In Figure 2, the arrow represents the role of such tacit knowledge in supporting customer interaction/satisfaction when adopting an eCommerce model. Furthermore, we suggest

that effort to engage in inquiry into these customers' tacit knowledge of their context of use will also prove fruitful.

Conclusions

As Jennings and Beaver point out, the root cause of small business failure is almost invariably a lack of management attention to strategic issues. *'The multiplicity of roles expected of the owner-manager often causes dissonance which enhances the probability of poor decision making and inappropriate action. Successful small firms practise strategic management either consciously and visibly or unconsciously and invisibly'* [1, p.1].

We believe it is vital for the proprietors of small to medium-sized enterprises to consider what may be the unintended consequences of investment in ICTs and to devote due time and effort to development of effective systems for use. Technology does not, of itself, achieve anything. Only as a tool in the hands of capable managers will it enhance business performance [21]. It is important that they work in tandem with IS professionals in co-creating their systems, rather than attempting to avoid this engagement through outsourcing. Expertise can be bought in, and activities can be outsourced, but the responsibility for managing the business cannot. Thus the challenge in harnessing the enabling potential of ICTs is to expand the tacit knowledge contained within that unique business.

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