The Dynamics of IT Supplier Relationships with Construction SMEs: a Technological Frames Approach

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Abstract
Knowledge, skills and expertise related to IT management, selection, justification, implementation and adoption of new IT software applications and hardware is always a problem – specifically related to managing effective IT supplier relationships. This paper provides a continuing narrative of a small construction (SMEcon) company’s experiences and perspectives managing their IT supplier relationships. Harwood (2003) has produced a comprehensive list of factors that should be considered when selecting an IT supplier and IS application comprising: functionality, implementation approach, costs, organisational credibility and viability, experience, support, reputation, manner of relationship and responses and finally future plans and strategy. It can be seen that the technological frames concept and approach can provide a level of interpretative analysis that may enable a better understanding of how to manage complex client and IT vendor relationships. In summary, the systematisation of SMEcon’s management information systems and the subsequent attempts to automate them, have involved a huge learning curve and the divisions and gaps between business owners, staff and users and IT technologists have been exposed. The lack of IT knowledge of owner managers is something that they often admit to but refuse to take seriously. No actors on either side of the fence in this case SMEcon and SMEsup1, SMEsup2 and SMEnet would take ownership of the problems of effectively managing the new IT technologies. This was then a situation where every party was a loser in the deal. The use of technological frames in this case has enabled an interpretation of the data which surfaces some major issues in SME owner manager culture and also the SME IT vendor/supplier industry.

Keywords: Construction industry, SMEs, ICT adoption, Action Research, Social Constructionism, Technological Frames

Introduction
The construction industry in the UK is highly fragmented, with most of the organisations within it falling into the category of Small & Medium-sized Enterprises (SMEs). These organisations command around 50% of the volume of business, with the remainder being carried out by a very small number of large players. The industry is notably slow in its uptake of ICT, particularly its SMEs. In a recent research study into the uptake of IT in Construction SMEs Aranda-Mena and Stewart, 2004 found that the Construction sector is significantly lagging behind other industries in terms of ICT adoption, Business and ICT strategic alignment, e-business and e-supply chain
management. Knowledge, skills and expertise related to IT management, selection, justification, implementation and adoption of new IT software applications and hardware is always a problem – specifically related to managing effective IT supplier relationships. There are significant problems associated with IT supplier management. These are associated with the strategic mind sets, culture, context and operational practices of small construction businesses and their perceived attitudes to ICT (Douglas, Wainwright & Greenwood, 2008).

Technological innovation in the form of web enabled intranet systems, application service providers (software as a service - SAAS) and the diffusion of mobile computing applications has opened up the possibility of low cost, practical and adaptable solution to construction information management problems. The problem now becomes one of defining information and document requirements, automating workflow, and very fundamental ICT project management (defining requirements, identifying alternative technologies and applications, managing ICT hardware and software vendors, implementation, training, managing the change process and realising the business benefits).

This paper provides a continuing narrative of a small construction (SMEcon) company’s experiences and perspectives managing their IT supplier relationships. This focuses on the selection, acquisition and implementation of a new Management Information and Document Control System (MIDCS) based on intranet technology. It will give a brief background to and context for the project and examine how the dynamics of the supplier relationships changed over a relatively short period of time. A technological frames approach based on social construction of technology (SCOT) is being used as a lens to identify and analyse the company’s, and individuals', attitudes and re-actions to the project. This highlights the problems and issues of a ‘typical’ Construction SME attempting to adopt the latest collaborative workflow technology and adapt it to its current business processes and strategy for increasing internal quality and achieving market growth.

**The IT selection and Supplier Management Process**
Information technology supply, acquisition, provision, adoption and use in SMEs has seen significant changes over the last two decades. Early studies indicated that small companies confined their use of IT to word processing, spreadsheet analysis, basic accounting and budgetary control (Farhoomand and Hrycyk 1985, Nickell and Seado 1986, Lincoln and Warberg 1987, Meyer and Boone, 1987, Kagen, Lau and Nusgart, 1990; Pollard and Hayne, 1998). More recently the increasing availability and ubiquitous nature of ICT, the advent of Web 2.0 technologies, Software as a Service (SaaS), Cloud Computing, decreasing IT hardware costs, and new innovations such as Microsoft SharePoint or Google Docs and Wave, suggests that SMEs are experiencing unprecedented changes and opportunities to harness technological innovations.

However the question still remains as to whether SMEs can effectively utilise IT and harness the power of these challenging new innovations for strategic and competitive advantage.

Research by Maguire and Magrys (2001) indicate that more classical or formal top down approaches to IS/IT strategy (such as Earl’s (1989) model), formulated and aligned with an underlying business plan does not seem to apply to SMEs or appeal to their mindset of culture. This indicates that SMEs have relatively short term planning horizons and other impediments to effective IT acquisition, adoption and use, such as a lack of the requisite internal IT technical expertise and business IT skills (Feeny and Willcocks, 1998; Wainwright et al, 2004). Brock (2000) in a review of ICT within small firms found the most problems related to: internal IT skills (lack of); top management support (moderated by the owner manager relationship and centralised decision making); user participation (lack of) and the role of IT vendors and consultants (total reliance on external support in many cases). Brock (2000) concluded by stating that there is a crucial need to develop internal ICT skills (both owners and employees) and not to have total reliance on external vendors. This must be combined with better user training and greater participation in the IT selection, acquisition, adoption and implementation process.

The need for more in-depth research into the “soft” aspect of IT supplier selection has been stated by many researchers (Bingi, 1999; Verville & Harlingen, 2002b; Kunda &
Brooks, 2000). Harwood (2003) emphasises the role of IT supplier and client relationships in his ERP implementation cycle (based on his own experiences as an IT manager in an SME) shown in Fig 1.

![ERP implementation life cycle diagram]

**Fig.1. ERP implementation life cycle diagram adapted from Harwood (2003)**

Harwood (2003) emphasises that selecting the “right” vendor is an important process and that the vendor appraisal process comprises of four stages:

- Stage I. find out who is out there (generate the first list)
- Stage II. Potential vendors
- Stage III. Reduce the short list to those who are deemed most suitable
- Stage IV. Final selection

Harwood (2003) has produced a comprehensive list of factors that should be considered when selecting an IT supplier and IS application comprising: functionality, implementation approach, costs, organisational credibility and viability, experience, support, reputation, manner of relationship and responses and finally future plans and strategy. Harwood’s model is very comprehensive and deals with some of the “soft” issues mentioned earlier. He specifically uses the terms (relationship, partner, and ownership) which are critical to vendor selection. He also emphasises the need for investigating the vendor’s background, history, profitability and future strategies. This allows the client to build up confidence and some degree of trust with the vendor, which are essential requirements for relationship building.

In a similar fashion Kunda and Brooks (2000) developed the STACE method for a more informed sociotechnical approach to Commercial off the Shelf Software (COTS). Their results based on an empirical study show that throughout the selection process organisations fail to neither recognise the importance of the social factors in vendor selection nor recognise the complexity of what they are buying and the importance of a good client-vendor relationship to this process. Relatively little
research published in the field of IS appears to focus specifically on the role of the applications selection process, vendor-client relationships and its importance within IT applications and systems acquisition. Client-vendor relationship has been quoted by researchers but only in an ad-hoc manner, and mentioned as an instinctive result of an acquisition rather than a requirement or a must (Verville & Halingten, 2003). It may be observed therefore that organisations selecting an IT vendor expect to build a relationship post-implementation as opposed to pre-implementation.

**Technological Frames**

Given the problems of SMEs and their somewhat unpredictable relationships and experiences with IT suppliers, there is a need to gain a better understanding of perspectives of all the stakeholders involved. In this case the stakeholders are made up of the key actors involved in the IT acquisition and implementation process. In SMEs this can involve mainly the owner managers or Directors of the company together with IT technologists (sales and applications developers) from the IT supplier. A structured means of gathering and understanding these diverse and multiple perspectives can be beneficial to maintaining and developing relationships between the stakeholders within the IT acquisition and adoption process. Orlikowski and Gash (1994) recognised the seriousness of this problem in their study of the adoption of groupware technologies in organizations. Based on a review of the literature they developed a socio-cognitive approach that led to the development of a conceptual framework for examining the interpretations that people develop around technology. Two primary groups were identified as having significantly different technological frames; technologists and users. These differences of perspectives could lead to incongruences where different mental models affect the outcomes of technology adoption and use. Orlikowski and Gash (1994, p.178.) define the term technological frame “to identify that subset of members’ organizational frames that concern the assumptions, expectations, and knowledge they use to understand technology in organizations. This includes not only the nature and role of technology itself, but the specific conditions, applications and consequences of that technology in particular contexts”. Furthermore, Orlikowski and Gash (1994. p.183.) advocate using the concept of technological frames to detect levels of congruence within organizations across three distinct domains:
Other researchers have used the concept of technological frames to investigate the differences in meanings that users, managers and technologists apply to IT projects. This ranges from: studies of the requirements determination process and the role of interpretive power (Davidson, 2002), analysing the important technological and social factors that lead to effective groupware adoption (Bjorn et al, 2006), identifying key social and political factors that can change over time and be altered by context in the adoption of email systems (Lin and Silva, 2004), and also the examination of how technological framing can influence work redesign, development of new roles and practices within professional communities (Davis and Hufnagel, 2007).

It can be seen that the technological frames concept and approach can provide a level of interpretative analysis that may enable a better understanding of how to manage complex client and IT vendor relationships. This is particularly sensitive during the requirements elicitation process for COTS selection where high value investment decisions are being made with many political, technical and social pressures. These pressures are evident from both sides of the client and IT vendor ‘fence’. This research study adopts the technological frames approach, from Orlikowski and Gash (1994), to make sense of the sometimes incongruent and conflicting perspectives influencing the conduct and outcome of the electronic document control and management information system.

**Research approach**

The present study forms part of a 4 year EPSRC Industrial CASE project whose aim is to explore models for ICT adoption within Construction SMEs. The vehicle for the study is a construction company with approximately thirty employees based in the Northeast of England. The researcher had been partly based in the company for the duration of the project, and was involved with the company’s attempts to adopt an electronic document control and management information system. An ‘action
research’ approach was considered to be the most appropriate for the situation within an overall qualitative and interpretivist research-based inquiry based on an underpinning social construction of technology (SCOT) epistemology (Pinch and Bijker, 1984). Pinch and Bijker (1984) state that, just as technologies have different meanings in different social groups, there are multiple ways of constructing technologies. They propose that a design is only one point in the total field of technical possibilities, all reflecting the interpretations of certain relevant groups. Action Research (AR) as an approach, attempts to find ways of eliminating the gap between theory and practice (see, for example, McNiff, 1988, pp ix). Coghlan (2003: p. 452) states that AR is a method based upon ‘a collaborative problem-solving relationship between researcher and client, which aims at both solving a problem and generating new knowledge. A range of data collection techniques were employed including observation, document collection, minutes from meetings, informal and formal meetings between the client and IT vendors, and eleven semi structured interviews with Directors and staff within the business.

**The Case Study**

**Abbreviations**

SMEcon – Small Construction Company being studied  
SMEsup1 – Small ICT firm, incumbent supplier of all it services  
SMEsup2 – Small ICT firm, newly supplying ICT support  
SMEnet – Small Web firm, newly supplying Intranet and associated services.

The name SMEcon has been adopted to retain the anonymity of the construction company involved in the research project whilst SMEsup1 represents the original ICT support company, SMEsup2 is the replacement ICT support company and SMEweb is the company contracted to create the Intranet and Internet system.

SMEcon, is an SME with around thirty employees The company provide ‘professional services to the construction and property The three owner-directors of the company each has around 20 years’ experience in major multi-national organisations. The company are committed to the construction industry ‘change agendas’ of Latham (1994) and Egan (1998), as well as other more recent
developments, to adopt a new way of working within the construction industry. These changes include the implementation of a co-ordinated project information system, quality-based tendering, committed leadership, a focus on the customer, integrated processes/t eams, a quality driven agenda and commitment to people. The company's use of technology has been limited to date. When the study began, they used the ubiquitous laptops/desktops with Microsoft operating and Office systems and a few specialist software packages: Asta PowerProject, AutoCAD and Sage Accounts. There had been little or no formal training in any of these systems.

**Timeline**

To aid the understanding of this paper, the timeline of events must be established.

<table>
<thead>
<tr>
<th>Time span</th>
<th>Description</th>
<th>Key decisions</th>
</tr>
</thead>
</table>
| September 2006 – October 2007 | This work entailed the design of the MIS structure in paper form. A previous publication, ICT Systems and Construction SMEs – a case study of issues related to adoption by A.S Douglas, D.W Wainwright and DJ Greenwood (2008) highlighted some of the issues encountered during this period. | • Information Structure  
• Ideas for the ‘Golden Rules’ for information storage |
| November 2007      | SMEcon’s director decided to change IT support companies.                   | • Decision to leave SMEsup1               |
| December 2007      | This month consisted of an independent report on the existing computer (hardware and software) in operation @ SMEcon. Meetings with SMEsup2 and SMEint | • Decision to employ SMEsup2  
• Decision to employ SMEint |
| January 2008       | SMEsup2 audit SMEcon’s IT systems                                            | • SMEsup2 get new support contract for hardware and SMEint get tasked with design of new intranet system. No formal vendor selection process was apparent – even though recommended in independent report |
| February 2008      | IT back-up issue – total failure of SMEcon director’s computer resulting in catastrophic loss of information | • Policy on Back-ups of all systems and computers. |
| April 2008         | Continuation of March 2008’s work                                           | • Structure of Intranet finalised.         |
| May 2008           | Continuation of March 2008’s work. Website redesign                        | • SMEint’s account manager announces he’s leaving SMEint |
| June 2008          | Website Launch                                                              | • New account manager at SMEint.  
• Structure and wording of website confirmed |
July 2008  | Intranet redesign and Launch  | • New ‘structure’ in intranet system.  
| | | • Phased launch of new system onto new SMEcon projects beginning from 7th  
August 2008 | Holiday period in SMEcon. Monitoring of launch |  
September 2008 | Major Intranet redesign due to user issues | • Decision to re-launch Intranet ASAP  
November 2008 | Continuation of October 2008 work. | • Switch all users’ computer browsers due to unforeseen technical issues.  
December 2008 | Re-launch of Intranet | • Trial of user manual  
January 2009 | Training of site operatives and Handover of SMEcon’s work to another researcher | • Handover of SMEcon information  

<table>
<thead>
<tr>
<th>Staff Member &amp; Background</th>
<th>What is an IS?</th>
<th>What is IT?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Manager</td>
<td>Filed information which would assist myself and any other member of the staff to access information and hopefully improve the systems which we already have in place.</td>
<td>Computer skills</td>
</tr>
<tr>
<td>Near retirement age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Over 30 years experience at this level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Been with company from early on</td>
<td></td>
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Table 1. Basic timeline of SMEcon events.

A Technology Frames Perspective

The Nature of Technology

In summary, the adoption of technology depends upon how individuals perceive it, which has implications on how IT, ICT, IS and in this case the MIDCS are viewed and subsequently used within the business. In the middle of 2009, eleven interviews were conducted to determine individual perspectives of the nature of the technology in use within SMEcon. Some of the questions directly sought to find out if the employees had an understanding of what and IS and IT are. The following table reflects three of the employees (a Construction Manager, the Office Manager/Administrator and an Estimator) responses to the questions ‘What is an Information System?’ and ‘What is Information Technology?’ This especially related to their experiences of using (or seeing others use) the SMEcon systems, mainly MS Office products, the network, some specialist software such as AutoCad, Powerproject and Sage, and also MIDCS.
Office Manager/Administrator
Middle-aged
Experienced Office Manager/Administrator
Been with company since inception

Management information system is to have a management section. Would be information that goes into the applicable section in this company, like heads of department. It wouldn’t be general information that everybody would have access to.

Well it’s a computer. To do my daily tasks I need a computer, I need a server that’s actually going to back up my information too, I need e-mail accounts which combine with the server.

Estimating Manager
Middle-aged, experienced
Estimating Manager/estimator
Newly joined the company (at time of study)

Management information system for the managers of a company to have a system in place to manage their company, and any information about the company is on that system.

I would imagine it’s the updated technology that sends things by intranet, internet, e-mail, from the things to PDFs, sending enquiries out in a different format, using new technologies. It would make my job a hell of a lot easier....

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</tr>
</tbody>
</table>

**Table 2: Staff views on IS and IT at SMEcon**

It is noticeable that none of the SMEcon employees really explain either IS or IT in the terms often given by academics or IT Practitioners. There is a clear distinction however between the IS (MDICS) that is designed to be mainly for managerial planning, control and reporting as opposed to the ‘harder’ IT which seems to be everything else including all the Microsoft technologies and applications. IT seems to be more of a ubiquitous concept. Given these perceptions (more are apparent from the rest of the study data) it is perhaps significant that no real distinction was made between the vendor selections for what may be two separate provisions. SMEsup2 who supported the IT hardware and Office Products was very closely aligned with the supplier of the new MDICS system. The nature of the services were therefore very ‘technologically’ focused with an emphasis on development of the new intranet system in Coldfusion. The vendors, SMEsup2 and SMEnet were therefore bringing the same technology mindset and applying it to the development and support of the MDICS. This was not challenged by the SMEcon personnel as this distinction was not apparent to them. Everything was a technology problem.

**Technology Strategy**

Technology strategy in this case relates to the planned developments, implementation and maintenance of the new ICT hardware and applications. This mainly focused on MDICS during this period as this was the technology with the most potential strategic impact on SMEcon. Immediately prior to this research project, the companies ICT-based systems were ‘being looked after’ by a small ICT consultancy, SMEsup1. However, this ICT consultant had become dilatory, and appeared to have reached the
limit of support that it could offer SMEcon. Not long after the start of the research, another small ICT vendor, SMEsup2 was appointed. The choice was based upon personal recommendation, ironically from the former ICT support company. This type of recommendation, although highly likely to occur in large organisations, would almost certainly not have been taken up as quickly, or without other ‘sign-offs’ from senior management and budget holders. Therein lies a major perceived benefit of SMEs; the people doing the work, pay for the work. Bureaucracy, tendering, procurement ‘rules’ etc, are not the blocks to decisions often found in large companies or public organisations. However, the procurement issues in particular, may allow large organisation to truly receive the best provider of service if they use a measured competitive tendering process, whereas an SME’s approach is more ‘ad-hoc’ and personal, increasing the risk of sub-optimal technology strategy, choice and ICT vendor ‘lock-in’.

In December 2007 an independent investigation and report by neutral IS consultants accelerated the overall project’s development. Up to this point, SMEcon had struggled to move the project on technically, due to SMEsup1’s inability/unwillingness to communicate at a greater level in order to facilitate the project. The report highlighted technical issues with the existing infrastructure as well as making recommendations about upgrades and even a suggestion of which document management system may suit SMEcon. Shortly after this report, SMEcon signed a six month contract with SMEsup2. The agreement was for SMEsup2 to upgrade the existing infrastructure and maintain the system thereon. They would also be responsible for any other hardware and ‘off-the-shelf’ non-specialised software solutions, such as MS office products, etc. From this appointment, the field researcher was included in a meeting with SMEsup2 and SMEcon where discussions took place regarding potential Intranet solutions. SMEsup2 informed SMEcon they did not have that type of capability but could recommend a firm local to them (along the corridor) that provided such solutions. SMEcon’s director contacted this firm, met them and the researcher, and signed them as the Internet/Intranet supplier, SMEnet. This led to more technical meetings, where the field researcher was given the responsibility of leading this part of the project, based upon his exposure to similar systems and experience within computer system implementation.
In January 2008 SMEsup2 undertook a full system and infrastructure check, including upgrade of server memory as advised by the previously mentioned report. As well as this development, SMEint required a lot of information pertaining to SMEcon’s ideas of what the intranet MDICS and internet should do. The internet was relatively simple to go through, as there was an existing example in place. This meant that the SMEcon director had some experience with what the design process involved. However, his experience was not a positive one, as the previous internet designers contracted had not been flexible with the overall design, leading him to doubt what may be possible, regarding editability and updating of the site. This lead onto discussions about what the intranet would require in way of look, structure, functionality, etc. Most of these questions were new and had not been thought of by SMEcon. The director had a clear ‘vision’ of what a paper-based system should do, but, due to lack of experience, did not appreciate the complexity now involved with and electronic version such as details such as user access, document types, search facilities and filing requirements.

The researcher and SMEcon’s director were also involved in more requirement and design meetings with SMEnet. It was at this time, the director asked the field researcher to take the lead in this process. The director and the researcher were to discuss ‘company’ requirements, then the researcher was to discuss these with SMEnet. This was mainly due to ‘language difficulties. The two companies had very different terminologies and understanding of each other’s operations, whereas the researcher had experience in the computerisation of processes in other built environment-based organisations.

From a technological frames perspective it can be seen that the views of the technology strategy were significantly different from the main actors involved in the project and especially in terms of IT technologists and business end users. The lack of technology knowledge, understanding and comprehension of the ‘jargon’ was used to the advantage of the IT vendors. This happened with SMEsup1 who was left ‘unmanaged’ and trusted to get on with the job of supporting the entire company. This trust was badly abused when the main consultant went ‘AWOL’. The independent consultants however could bridge the gap between technological viewpoints and also business strategy and use of the technology. Their report however was ignored by senior managers at SMEcon. This could be due to their embedded views of IT technologists as being the professional experts and a desperate search for quick wins
and a ‘one stop solution’. Through word of mouth they were quick to seize the promise of a technology and business solution – appointing a new IT vendor SMEsup2 without taking on board any of the recommendations and caveats from the independent consultancy report. The view from senior managers of SMEcon seemed to be one of having trust in professional expertise – in this case the claims of SMEsup2. This is not surprising – as their culture was embedded in the professional practice of the construction industry. This is where specialists with the appropriate expertise are contracted to meet specific job requirements such as architects, estimator and quantity surveyors, building contractors, logistics suppliers etc. The same logic of subcontracting was employed in terms of the IT vendors. It is perhaps a case that IT vendor relations are a ‘special case’ and cannot be managed in the traditional way. So no real technology strategy was apparent in SMEcon and there was no perceived need to have one – as the IT solutions were seen as part of a normal contracted relationship. The impact of IT on the business and its future strategic options was not taken into account or understood by the main actors involved.

Technology Usage
SMEcon, as with many SMEs, especially in the Construction Industry, do not have the knowledge of IS and IT and all its ‘topics’, making any decision dependent upon outside IT vendor organisations. The usage of the new technology within SMEcon actually started to drift backwards due to the problems over the design, development and implementation of MDICS. Prior to SMEsup2 and SMEnet being contracted, SMEcon used a simple Microsoft Windows folder system on a shared network drive to act as a filing system for the main projects documentation. MDICS was designed to supersede this system and provide a more automated set of workflows and logical document repository for secure access by project teams and managers. MDICS was never developed with the requisite functionality and was seen as more difficult to use and much more complex than its simple predecessor. Remedial work was undertaken by SMEint to enable this required functionality. This was never really achieved successfully and users only had very limited training on the new system. There was no internal champion within SMEcon and the field researcher and then some successive ‘students’ were asked to fulfil the role of training providers. Use of the new MDICS system never reached viable levels and the system remained dormant. Business users then reverted back to the Windows shared folders and also started to save documents
on their own personal computers/drives. In essence therefore MDICS could be seen to have a negative effect on the efficiency, effectiveness and strategic aims of the business. SMEnet could not agree with SMEsup2 where the problems lay – as it was embedded Microsoft server functionality and its interface with the web development platform Coldfusion which was a fundamental problem. These technological nuances could not be seen by the business end users and the management of SMEcon. The IT vendors were also deliberately opaque about these fundamental flaws and finally agreed that perhaps a full Microsoft solution such as Sharepoint might have been a better development option. The main business users did not appreciate the technological debates over choice of programming language and server architecture. They were only interested in the usability of the system and whether their jobs would be made more efficient and effective.

Conclusions

When reading through the timeline of events at SMEcon and then making the interpretation through the lens of technological frames, certain themes begin to come to prominence whilst others may be hidden in the dialogue of the case. Building on the original work of Aranda-Mena and Stewart (2004), Douglas, Wainwright & Greenwood (2008) highlighted some critical factors involved in ICT implementations. These are all significant and valid with respect to the technological frames interpretation of the SMEcon case:

- Lack of availability of internal IT skills in terms of IT usage and also IT strategy
- Limited senior management support (complicated by particular owner manager relationships)
- Centralised decision making by owner managers and a lack of employee participation
- Total reliance on external IT vendors – low rates – trusted relationships which can be misplaced
- Small IT budget – not formalised – and very ad hoc IT purchases done through word of mouth
- No internal business IT cases developed and no internal workflow process modelling or analysis
- Little recognition of IT risks in terms of security, backup and recovery of data
- Sensitivity of data for owner managers/directors and culture of non sharing of management information
- Risks of stability of IT vendors not taken into account or planned for
- Fragmented IT architectures and no planned investment strategy to provide stability and integration of applications
- IT industry vendors are insensitive to ‘small firm’ cultures (after the bigger sales)
In summary, the systemisation of SMEcon’s management information systems and the subsequent attempts to automate them, have involved a huge learning curve and the divisions and gaps between business owners, staff and users and IT technologists have been exposed. The lack of IT knowledge of owner managers is something that they often admit to but refuse to take seriously. In this case taking IT seriously would mean a significantly greater investment in terms of IT budget versus turnover. This would also extend to making a permanent role within the company in terms of IT management. This will include management of IT hardware and software applications and management of the IT vendor relationships using approved methods such as project planning, business case development, business analysis and business IT strategy formulation. Unfortunately this is not perceived by small business managers as contributing to the bottom line of the business or adding any strategic competitive edge. Similarly IT vendors, especially SMEs are not equipped to take on this role or indeed would be recompensed for doing so. No actors on either side of the fence in this case SMEcon and SMEsup1, SMEsup2 and SMEnet would take ownership of the problems of effectively managing the new IT technologies. This was then a situation where every party was a loser in the deal. The use of technological frames in this case has enabled an interpretation of the data which surfaces some major issues in SME owner manager culture and also the SME IT vendor/supplier industry. Further analysis taking into account a much larger sample of data collected via the action research study will hopefully confirm these findings and expose more of the real power, political and economic reasons for these situations. This will form the basis for future publication.

References


