Do IS consultants enhance IS competences in SMEs?

Adrian Bradshaw, Paul Cragg and Venkat Pulakanam
College of Business and Law, University of Canterbury, Christchurch, New Zealand
atbradshaw40@gmail.com
paul.cragg@canterbury.ac.nz
venkat.pulakanam@canterbury.ac.nz

Abstract: Many small and medium-sized enterprises (SMEs) turn to consultants for assistance with IS projects, for example, to help the firm select and implement a new system. Prior studies have shown that consultants have a major influence on IS success for SMEs. However, despite its importance to IS success, relatively little research has focused on the relationship between SMEs and IS consultants and whether this relationship has any impact or influence on the development of IS competences in SMEs. This study investigates whether consultants compensate for or enhance an SME's IS competences during a major IS project. A multiple case study approach was adopted involving SMEs who implemented an Accounting Information System (AIS). The case firms provide evidence that SMEs lack many IS skills and abilities. The study identified a number of competences that are compensated or enhanced by consultants. The major finding of this study is that IS consultants help SMEs overcome a lack of IS competences, rather than help develop IS competences within an SME. Managing the relationship between consultant and SME is crucial for SMEs lacking many IS competences.

Keywords: IS projects, IS consultants, SMEs, competences, Resource-based Theory, Accounting Information System

1. Introduction

Prior research has suggested that the greatest value of IS to firms occurs when the firm has the ability to leverage IS resources to achieve and sustain competitive advantage. Studies supporting this view have predominantly used resource-based theory and posit that the IS resources most likely to aid a firm to create and sustain competitive advantage are the various skills and abilities of the firm. The definitions of resources, competences and capabilities are adopted from Cragg et al (2011). These resources are the stocks of available factors owned by the firm, including knowledge, financial, and physical assets. Capabilities refer to a firm's capacity to deploy resources, and competences include the ability to develop, manage and deploy resources in support of a capability.

Many studies have identified various IS competences that firms should possess in order to take full advantage of IS and derive, as well as maintain, a competitive advantage (Peppard and Ward, 2004; Eikebrokk and Olsen, 2007; Cragg et al, 2011). Even in SMEs, research has identified several IS competences that would benefit these firms; these include define IS requirements, access IS knowledge, manage change, and project management (Cragg et al, 2011). This raises an interesting paradox. In the case of SMEs, research has found that these firms have relatively low levels of IS expertise, i.e. knowledge and skills; the typical SME turns to external experts when faced with a major IS project such as acquiring a new system. How then does an SME acquire or develop IS competences?

Prior studies have also shown that external expertise has a major influence on IS success for SMEs (Thong, 2001; Thong et al, 1997; de Guinea et al, 2005; Bruque and Moyano, 2007). However, despite its importance to IS success, relatively little research has focused on the relationship between SMEs and IS external experts and whether this relationship has any impact or influence on the development of IS competences. This study helps address this gap by examining major IS projects in SMEs, exploring the role of IS experts, and discovering how external experts add value and influence IS competences.

A multiple case study approach was adopted involving both SMEs and IS consultants. The study focused on IS projects where new accounting information systems (AIS) had been installed, including

a new version of an existing system. The evidence was used to examine the effect of consultants on internal IS competences. SMEs were defined for this study as independent firms with between 5 and 50 employees. A consultant was considered as any person or organisation that is certified to install or implement an AIS. This included accounting and consulting firms.

2. Literature review

There is evidence that SMEs engage consultants for various tasks, including selecting and implementing packaged software (Howcroft and Light, 2008), software and Web application development, project management, and benchmarking (Nevo, Wade and Cook, 2007). Furthermore, studies have identified the importance of external experts like consultants in aiding SMEs with IS projects (Soh, Yap and Raman, 1992; Thong, Yap and Raman, 1994; Thong, Yap and Raman, 1997; Thong, 2001; de Guinea et al, 2005).

The broader IS literature indicates the following four reasons why firms in general engage consultants:

- for knowledge and expertise as firms may not have sufficient knowledge or expertise in-house (Nevo, Wade and Cook, 2007);

- as an alternative to hard to find IS staff (Nevo et al, 2007);

- for knowledge transfer to internal IS staff and to gain technical know-how (Nevo, Wade and Cook, 2007);

- to compensate for a lack of capability. The lack of these capabilities represents a barrier to technology transfer, especially in smaller and less experienced firms. Consultants act as intermediaries to assist and advise firms, effectively compensating for a lack of capability (Bessant and Rush, 1995).

There is also evidence that consultants play various roles in SMEs. Traditionally in IS research, the main role of the IS consultant in SMEs has been expressed as a mediator role. Thong (2001) and de Guinea et al (2005) note that in small businesses, consultants act as mediators for the lack of IS skills and lack of expertise. Consultants act as bridging intermediaries by disseminating knowledge (Carey, 2008); they also act as 'conduits' by standing between IS suppliers and SMEs (Howcroft and Light, 2008). In these intermediary roles, consultants carry out several activities and services. Howcroft and Light (2008) point out that consultants provide services such as advice to assist with finding appropriate software, the implementation and customisation of the software, training and support service and the integration of software with existing systems. In the bridging role consultants carry out activities such as: transferring specialised knowledge; sharing ideas and experiences; acting as a point of contact for a wide range of specialised services; and assisting clients to clearly specify their particular needs (Carey, 2008).

Consultants may have an impact on their clients' understanding of the capabilities of a technology and its potential impact on business (Carey, 2008). Given the role of consultants expressed in prior research, and the impact suggested by Carey (2008), it is fitting to speculate that consultants may have an impact on the IS capabilities of SMEs and hence may impact upon IS competences within these organisations.

Prior research has used the Resource-based Theory (RBT) to examine IS in SMEs (Thong, 2001; Caldiera and Ward, 2003; Eikebrokk and Olsen, 2007; Butler and Murphy, 2008; and Cragg et al, 2011). Some of this has identified important IS competences, i.e., skills and abilities, that are applicable to IS in SMEs. For example, Thong (2001) developed a resource-based model of IS implementation in small firms. It was shown that small firms with successful IS had highly effective external experts, adequate IS investment, high users' IS knowledge, high user involvement, and high CEO support. A key factor of IS implementation success in small businesses was external expertise. Butler and Murphy (2008) used the resource-based view to understand how small to medium software enterprises (SMSEs) build and apply business and IS capabilities. Their findings indicated that managing external relationships was a core business and IS capability, whatever the stage of an SME's evolution. Caldiera and Ward (2003) show the importance of IS knowledge, i.e., either within the firm or in a closely associated specialist enterprise, such as consultants. This suggests that for SMEs, consultants play a vital role by supplying IS knowledge and that the ability to manage consultant relationships, as well as the impact of consultants, is an important consideration for SMEs.

Scupola (2008) identified three important competences at the managerial level for SMEs:

- *Vision* - understanding how e-services could assist the company and contribute to the company's business strategy;
- *Value* - finding out what value the system could bring to the company;
- *Control* – ways or initiatives to encourage and enforce assimilation of the system at the individual level.

Consultants can impact these three managerial competences. Scupola (2008) also suggested three competences that are key at the individual level: technical skills, interpersonal skills and conceptual skills. Two other frameworks also identify IS competences specific to SMEs. Eikebrokk and Olsen (2007) provide a total of seven competences associated with developing e-business in SMEs. The framework in Cragg et al (2011) identifies six macro-competences, which encompass a total of twenty-two competences, including the ability to, e.g., define IS requirements, access IS knowledge, manage change, and project management. The discussion of the role and the impact of consultants posits that there should be some impact on various competences from engaging consultants. The contents of all three frameworks are summarised in Table 1.

Table 1: IS competences from the SME literature

Eikebrokk and Olsen (2007)	Scupola (2008)	Cragg et al (2011)
Concept of e-business	Vision	Business and IS strategic thinking
Strategic Planning	Value	Define IS contribution
IT-business process	Control	Define the IS strategy
IT management	Technical skills	Exploitation
Systems and infrastructure	Interpersonal skills	Deliver solutions
Sourcing Alignment	Conceptual skills	Supply

Growing research has identified various IS competences that SMEs should possess in order to realise the benefit of IS as well as attain and sustain competitive advantage. However, in an environment where SMEs are known to lack IS knowledge, skills, and abilities, how do they gain and develop the various IS competences identified in the literature? Also, given that SMEs are dependent on consultants when it comes to various aspects of IS, what impact or influence do consultants have on the IS competences of SMEs?

Research on the impact of consultants on SMEs is underdeveloped. Although earlier studies indicated that external experts, like consultants, have a significant influence on IS success, subsequent studies provide little understanding of their influence on SMEs. Prior research provides few insights into how external experts influence IS projects and whether they influence in-house competences.

3. Research objectives and methods

Our study aimed to gain a deeper understanding of the role played by IS consultants, particularly their impact on IS competences in SMEs. We adopted a two-phase approach. The first phase involved a multiple-case study design, while the second phase was a single-case longitudinal study. The aim of the study was to determine if consultants influence IS competences in SMEs. This involved identifying the competences affected and also describing how they were affected.

3.1 Phase 1

We decided a multiple-case study design was appropriate for this phase, based on Eisenhardt (1989) and Yin (2009). The case study consisted of three SMEs and five consultants in New Zealand. The SMEs involved met the following criteria:

- implemented an AIS within the last 3 years;
- had 5 to 50 employees;
- used a consultant to assist with the implementation.

Tables 2 and 3 provide descriptive summaries of the SMEs and consultants involved in the study. Face-to-face interviews were the major method of collecting data. For the SMEs, the interviews involved one or more senior managers. All interviews were recorded and transcribed. In addition,

brochures and websites were used to gather supporting material. The data were ported into Nvivo and then coded and analysed using several techniques inherent within the software, including memo writing, annotating, searching, pattern matching and modeling.

Table 2: Summary of the backgrounds of the three SMEs interviewed.

SME	Industry	No. Of Employees	Annual Turnover (Millions)	Software	Client Base	Interviewee	Consultant Used
EA	Manufacturing	62	5M - 10M	Quick-Books	> 500	Accountant	Independent Reseller
IM	Manufacturing & Trades	6	1M - 5M	MYOB	200 – 500	Manager	Independent Reseller
AM	Manufacturing & Trades	7	1/2M - 1M	MYOB	> 50	Manager	Accountant

Table 3: Summary of the backgrounds of the five consultants interviewed

	ABS	AP	CAD	JK	OW
Number of Employees	1 Full-time 2 Contract	1 Full-time -	1 Full-time -	3 Full-time -	2 Full-time 2 Part-time
Years in Business	6 years	15 years	9 years	10 years	10 years
Major Client Industry	Trade	Service/trade	Clubs/hospitality	Service	Hospitality
Size of Clients	1- 25	1 – 35	1 – 150	1 – 100	1 - 25
Skills and Experience	Certified accountant	Self-taught accounting; Book-keeper	Chartered Accountant	Self-taught	Work Experience
	Certified QuickBooks installer	-	Certified MYOB Developer	-	MYOB Approved partner; Infusion certified consultant
	6 years consulting	13 years consulting	15 years consulting	15 years consulting	10 years consulting
	24 years accounting	15 years book-keeping		25 years accounting	10 years in accounting office
IT skills	Self-taught	Basic IT skills	Programmer	Self-taught	Basic IT skills
Education	Polytechnic Degree	B.Sc.	-	Certificate	School Certificate
Accounting Systems	QuickBooks	MYOB	MYOB	MYOB	MYOB; Infusion
Type of Consultant	Reseller	Independent	Independent Reseller	Independent Reseller	Independent Reseller

3.2 Phase 2

This phase involved a single-case longitudinal study of an IS implementation project. Since phase 1 relied heavily on a retrospective perspective of IS implementation projects, it was necessary to examine a live implementation project in order to provide a more complete perspective on IS competences influenced as a result of an implementation project. It was expected that this case would

share similarities with the retrospective cases, but also provide possible explanations as to why internal IS competences are affected the way they are by consultants.

The SME in this phase was a home-care company, providing accommodation for young people with disabilities. The home has 25 employees and the capacity to house up to 50 residents. Staff at the home included Registered Nurses and Care Assistants who carry out regular residential care. From its inception in 2008, this SME used an accounting package specifically designed for SMEs. The software was implemented at the recommendation of a consultant. It had expected that the managing director (MD) would use the system regularly to carry out both accounting and accounting-related tasks. However, due to what was termed a "technical glitch" this did not happen, and the consultant became responsible for the accounting function within the SME. In 2011, the SME embarked on a project to replace the accounting package, based on the recommendation of the same consultant.

The consultant started the consulting company in 2006. The company consists of two full-time employees and employs additional contractors when needed; at the time of the study the company employed two contractors. The consultant specialises in providing accounting services to firms involved in healthcare. The company has mostly small business clients but also has some larger clients, with approximately 10 clients overall. Table 4 is a summary of the SME and consultant involved the single-case study.

Table 4: Summary of the SME and Consultant interviewed

	Industry	**No. Of Employees**	**Interviewee**	**Type**
SME	Healthcare	25	Managing Director	-
Consultant	Healthcare	2 Full-time 2 Contract	Owner	Independent/ Accountant

In both phases, the interviews focused on how IS competences were influenced by consultants during the implementation of accounting software. The interview questions and the analysis drew on the framework of IS competences proposed by Cragg et al (2011). In phase 1, each SME and each consultant were interviewed to identify instances where consultants influenced (i.e., had an impact on the creation or use of) any of the competences listed in the Cragg et al (2011) framework. In phase 2, the SME and consultant were interviewed prior to the start of the project and at the end of the project in order to identify the internal IS competences of the SME at the start of the project and identify if there was any change to internal competences after the completion of the project.

4. Results and Analysis

The interviews confirmed that SMEs lack IS skills and abilities. Many managers of SMEs indicated a preference to focus on their business and leave IS activities to the experts. The SMEs also lack the ability to solve problems. The consultants noted that some SMEs would be aware they have an IS-related problem but would not understand the problem. SMEs also lack knowledge of accounting solutions to the extent that they do not know what system would meet their needs. SMEs usually followed the recommendations of consultants on what solution they would implement.

Implementing accounting software involves more than just installing the software as the system must be aligned with processes within the business. The interviews provided evidence that SMEs were unable to do this. In some cases the accounting package was modified to fit the business. In other cases, the new accounting package changed the way the business operated and the consultant played an important role in assisting the organisation with changes to their business processes. The SMEs managed their implementation project internally. However, as one consultant pointed out, consultants occasionally assist SMEs with managing implementation projects. All of the SMEs had limited knowledge of the infrastructure requirements of their accounting systems. The consultants were the ones that exhibited these abilities and advised the organisations on infrastructure, particularly the hardware and networks needed to operate systems effectively.

The cases provided strong evidence that consultants help SMEs overcome many IS competences that SMEs lack. We were also able to conclude that consultants influenced all six of the macro competences of Cragg et al (2011), i.e.:

- business and IS strategic thinking;
- define IS contribution;
- define the IS strategy;
- exploitation;
- deliver solutions;
- supply

<u>Business and IS strategic thinking</u> competence can be defined as "an organisation's ability to identify and evaluate the need for IS in providing opportunities to develop a better business strategy and to manage the IS activities effectively, including establishing an appropriate IS organisation and defining roles, responsibilities and policies" (Cragg et al, 2011:356). This relates to knowledge of how accounting software can be of value to a business (Eikebrokk and Olsen, 2007). It also relates to the ability to define a business case and establish appropriate criteria for making decisions about IS (Cragg et al, 2011). The interviews revealed that consultants help SMEs understand the value of IS, including the implications of implementing IS and, in some instances, helping SMEs to establish the business case for the project. This is because some SMEs lack the ability to establish a formal business case for implementing IS. Consultants provide a means for SMEs to identify and evaluate the potential and implications of implementing an accounting package. The consultants share knowledge with SMEs on the potential of implementing particular software. The ability to identify and evaluate the potential and implications of implementing accounting software (Cragg et al, 2011) relates to knowledge of how accounting software can be of value to the organisation (Eikibrokk and Olsen, 2007). In providing this ability to SMEs, consultants compensate for/overcome the SME's lack of ability. The interviews revealed support for the influence of consultants on SMEs understanding the value of implementing AIS. The interviews indicated that consultants enhanced the ability of SMEs to define the potential and implications of implementing AIS.

The phase 2 single-case study revealed that the consultant established the business case for the project. As a result of "*issues*" using the existing system and a change in the GST rate, the consultant took the initiative to approach the manager of the SME and discuss the possible options. The consultant then proceeded to evaluate several alternatives and made a recommendation to replace the existing system with a specific IS.

The manager of the SME noted that specialised activities, like determining a business case, were left up to the consulting company. The SME's management promptly accepted the recommendations of the consultant. After the project was completed, management was happy to continue to leave specialised tasks to the consultant. However, the MD commented that she also sought to increase her knowledge of what was needed in accounting software for the business. This is in agreement with the idea that consultants enhance the ability of SMEs to define the potential and implications of implementing AIS.

It may therefore be concluded that the single-case supports the notion that consultants are able to compensate for the Business and IS strategic thinking competence in SMEs during the implementation of accounting software. This is attributed to the fact that SMEs may be willing to rely on consultants for what may be termed 'specialist activities'.

<u>Define IS Contribution</u> refers to the ability of "translating the business strategy into investments in IS that achieve both performance improvements and meet information needs" (Cragg et al, 2011: 358). It includes four competences relating to alignment, business process management, defining IS requirements, and accessing IS knowledge. The interviews revealed that consultants assist SMEs in managing business processes related to the implementation of accounting packages. One consultant commented: *"I've come across a lot of clients where they have never done the books in-house; the accountant handles everything. The accountant does all their processing, they just provide bank statements or they provide information to the accountant; he does everything. They get to a point of saying, '[Don't we] want to do this ourselves?' So therefore, then; their system, at the moment; they don't have a system, basically."* Consultants also influence SMEs' ability to access IS knowledge, primarily when it comes to finding hardware providers.

The single-case study also supported the earlier findings that consultants assist SMEs in managing business processes related to the implementation of accounting packages. The SME referred all

specialised IS activities to the consultant, as SME lacked the ability to define the IS contribution. The consultant was responsible for assessing the situation and recommending the replacement accounting software. In carrying out the analysis and recommendation, the consultant effectively defined the accounting software requirements, aligned the software with the business and refined the business processes related to the use of the new software. It was also the consultant that had set the business processes in place surrounding the original software now being replaced.

The single-case therefore shows that consultants are able to compensate for defining the IS contribution competence in SMEs, during the implementation of accounting software. This may be attributed to the fact that the SMEs lack the ability to do so as well as them preferring to rely on consultants for such specialised activities.

The IS Strategy macro-competence refers to the ability to "define the information and application architectures, technology infrastructure and IS resources it needs to enable the resources to be successfully bought and/or implemented (Cragg et al, 2011, p.358). It addresses three IS abilities: to define an appropriate software sourcing strategy, appropriate IS acquisition process, and appropriate technology infrastructure. This relates to two competences from Eikebrokk and Olsen (2007), i.e., sourcing, systems and infrastructure. If SMEs have these abilities, it is likely that the implemented IS will be useable and have a positive impact. Package acquisition is the common sourcing strategy for software, while the hardware infrastructure competence requires an understanding of the infrastructure needed to implement the software. It includes computing hardware, software and network infrastructure needed to implement a working system. The interviews indicated that SMEs follow the recommendations of external parties, including consultants and accountants. SMEs often lack the ability to evaluate the various software solutions and do not understand the infrastructure requirements of IS they wish to implement. Consultants play a key role by assisting SMEs with sourcing and acquiring IS. The consultant also assists clients to evaluate options and recommends which system is best suited for their needs. They make an assessment of what the client requires and advise them on the software to use, typically an 'off the shelf' system. For example, if MYOB is not suitable, the consultant will suggest an alternative existing package. In addition to software, consultants typically either recommend new hardware or the upgrading of the existing infrastructure. One consultant explained that she outlines what hardware infrastructure is needed to implement a system. However, the logistics surrounding the hardware and infrastructure are left to SMEs and their IT suppliers. The consultant liaises with the IT suppliers. Sometimes a consultant may recommend an SME seek guidance from a hardware specialist, i.e., another consultant from their *"trusted circle"*.

In the single-case, the consultant provided the SME with all aspects related to this macro-competence, define the IS strategy. The SME relied on the consultant to source the software. The consultant evaluated various systems and recommended that the SME implement the new software. The project did not require any changes to the technology infrastructure at the SME. After the completion of the project, there was no indication that the SME gained any of the abilities related to the define the IS strategy competence. This is most likely due to the MD relying on the consultant to handle the specialised IS activities in the organisation.

Therefore, the single-case confirms that consultants are able to compensate for the ability to define the IS strategy competence in SMEs, during the implementation of accounting software, and may be attributed to not only the lack of ability in SMEs but also to SMEs choosing to rely on consultants for special skills as found in this case.

The Exploitation competence relates "to the organisation's ability to increase the benefits from effective use of information and application investments" (Cragg et al, 2011: 359). It includes four competences: benefits management, managing change, project management and inter-organisational collaboration. In phase 1, the interviews targeted the ability of SMEs to exploit accounting systems. Training was identified as aiding clients to maximise the benefits of the system by learning the tricks of how to use the software. Consultants also assisted clients in maximising their system by bringing organisations closer to their accountants. The consultants recognised that accountants can improve business development of an SME. The consultants also agreed that changes must be made to business processes in order to derive additional benefits. However, such changes cannot be introduced immediately after implementation, since the clients must be allowed to work in their usual manner and be comfortable. Only after that was achieved, would the consultant suggest changes, *"what we tend to do is put the system in, let them get used to doing the things the way they've always*

done them and then they'll say, 'we want to bring in job management'. We've always partially done it but not quite."

The discussions in the single-case study interviews focused on the ability of the SME to exploit the use of the accounting software. Prior to the start of the project, the MD of the SME did not use the existing accounting software. One of the goals of the project was to encourage the MD to make use of the new software. The MD noted that she was incapable of using both the existing and the new software as she did not possess the required skills but believed that once she had been shown she would be capable of using the software.

Given this situation, the SME was unable to exploit the benefits of using accounting software both before as well as after the project. The consultant was responsible for detailing how the organisation should use the software and, therefore, was responsible for the SME increasing the benefit from using the software. The consultant was observed showing the MD how to use the new accounting system to manage the organisation's bank and credit card balances.

The single-case therefore shows, in agreement with the earlier interviews, that consultants are able to help enhance the ability to use accounting software. This is because consultants were usually the ones providing the training and showing clients how to use the software. The single case also provided evidence that consultants enhance the ability of SMEs to exploit the use of the software.

The Deliver Solutions competence concerns the ability "to convert requirements into working IS assets (business solutions) that perform according to specification and can be integrated effectively with other systems and processes" (Cragg et al, 2011, p.359). It includes four competences: applications development, implementation and integration, apply and use technology, and business continuity and security. The SMEs in phase 1 of our study were not in a position to carry out IS implementation nor integration without the assistance of consultants. Instead, consultants undertook such tasks as part of the IS implementation project. They typically installed the software and did some customization such as the reports and invoicing functions. The consultants indicated that they encouraged SMEs to apply and follow regular back-up procedures; unfortunately this advice was seldom followed. One consultant indicated that she teaches SMEs the process of not only backing up the accounting system, but also other areas like email.

The results of the single-case study revealed that the consultant carried out all of the tasks relating to the implementation of the existing software as well as those relating to the implementation and integration of the new accounting software. After the completion of the project, there was no indication that the SME could carry out such tasks themselves in the future.

The deliver solutions competence also captures an organisation's ability to apply and use the accounting software. At the start of the project, no one at the SME had the ability to use the new software. For example, before the new software was installed, the MD was unable to use the old software. On completion of the project, the MD revealed that she had acquired enough skills to use the new system, *"….to do what I need to do at the moment"*. During the training sessions, the consultant assisted the MD with generating reports from the software. On completion of the project, the MD was able to generate various reports from the new system. This represents a real change in the SMEs abilities.

In the single-case, the consultant was able to enhance the firm's ability to use accounting software, and the consultant compensated for the ability to implement and integrate the system. This agrees with the earlier interviews and may be attributed to the lack of skills and abilities in SMEs, as was evident in the single-case study.

The Supply competence refers to three "operational competences that allow the organisation to create and maintain its technology resources and applications through effective management of the IS supply chain and internal and external IS resources" (Cragg et al, 2011: 360). It includes managing IS suppliers, asset management, and staff development. A theme to emerge from the phase 1 interviews was that consultants develop on-going relationships with their clients. The consultants contend that they had excellent relationships with most of their clients, with one likening it being similar to a friendship. Another claimed to "*keep an eye on things."* These on-going relations allow consultants to assist SMEs in keeping their systems operational. Consultants teach or explain to

clients the importance of maintaining their systems, including keeping software up to date. Consultants also worked to ensure that the technical skills within SMEs were adequate for the needs of the organisation. By so doing, consultants build and enhance the ability of SMEs to utilise IS. After implementation, SMEs learn what requirements are more suited to their type of organisation and operation. They learn how to use or integrate the use of IS with their current processes. Over time, SMEs become more capable in areas related to the integration of IS with the organisation's business processes.

The relationship between SME and consultant emerged as an important aspect of the supply competence in the single-case study. The SME and consultant already had a close on-going relationship. The consultant provided advice and guidance to the MD and board of management as well as managed the administration of the organisation's accounting functions. The consultant and MD described their relationship as very good, with daily communication in the form of emails and telephone conversations. The MD praised the relationship between herself and the consultant, describing it as "*problem free, open and transparent*". This relationship remained unchanged throughout the entire project.

Prior to implementation, the consultant managed the accounting function for the SME. This included the preparation of invoices, processing of creditors' invoices and balancing credit cards. Implementing the new accounting system improved the accounting process and made it more "*efficient*". For example, in the past the MD had relied on the consultant company for assistance, especially with the company's credit card balances. However, after using the new software, this part of the process was handled by the MD.

The consultant was also responsible for staff development at the SME, which involved training and developing accounting and other business related skills. The consultant provided training on the existing and new accounting software. As noted, the MD never used the existing software, but after the project was completed she both used the new system and had an understanding of how the system worked, including some of the accounting functions.

The single-case shows that consultants are able to compensate for the lack of ability related to staff development. This is in agreement with the earlier interviews and results as the consultants were typically responsible for staff training. This was observed in the single case as well. Consultants also play a key role in the development of on-going relationships with SMEs, which is vital to the management of the IS supply. In the earlier interviews, the consultants revealed that they sought to build relationships with SMEs. The single-case provides evidence of this endeavor, revealing a close relationship between the consultant and the SME.

Overall, the single-case provided strong evidence and confirmation that consultants help SMEs overcome many IS competences that SMEs lack, as suggested by the interviews in phase 1. The case also revealed some instances to suggest that consultants may also enhance some IS competences. Table 5 shows how the results of the single-case compare with the results of the retrospective multiple interviews.

Table 5: IS competences, single-case compared with retrospective cases

Macro-competence	Competence	Phase 1 Multiple Cases	Phase 2 Single-Case
Business and IS strategic thinking	IS innovation	Compensated	Compensated
	Business case and investment criteria	Compensated	Compensated
	Including IS in business strategy	No effect/impact	No effect/impact
	Information governance		
Define IS Contribution	IS alignment	Compensated	Compensated
	Business Process Management		
	Define IS Requirements		
	Accessing IS Knowledge		
Define IS Strategy	Software sourcing strategies	Compensated	Compensated
	IS acquisition processes		

	Technology Infrastructure Requirements		
Exploitation	Benefits Management	Enhanced	Enhanced
	Managing Change	Compensated	Compensated
	Project Management	Compensated	Compensated
	Inter-organisational collaboration		No effect/impact
Deliver Solutions	Applications development	Compensated	Compensated
	Implementation and integration		Compensated
	Business Continuity & Security	Enhanced	Compensated
	Apply and use technology	Enhanced	Enhanced
Supply	Manage IS Supplier Relationships	Compensated	Compensated
	Information asset management and maintenance		No effect/impact
	Staff development	Compensated	Compensated

5. Discussion

The SMEs in this study did not have appropriate IS skills and abilities to select and implement a major new system. Thus the SMEs engaged consultants due to a lack of IS competences. The consultants compensated for a lack of competences within the SMEs, in line with Nevo, Wade and Cook (2007). Phase 1 and 2 of the study contributes to current literature by identifying numerous competences that were compensated for by consultants. Thus the study contributes to our understanding of how consultants act as intermediaries to assist and advise firms, as argued by Bessant and Rush (1995). In this intermediary role, the 'conduit', consultants provide advice to assist SMEs with finding appropriate products, implementing the system, integrating software with existing systems, and training and support (Howcroft and Light, 2008). The reasons for SMEs engaging consultants reflect the resource-poor nature of many SMEs, as discussed in much previous literature on small firms.

Prior SME-based research has identified numerous IS competences (Scupola, 2008; Eikebrokk and Olsen, 2007; Cragg et al, 2011). This study contributes to this research by identifying IS competences that are relevant during the implementation of IS and, importantly, identifies many competences that are lacking in SMEs. This study provides evidence that consultants affected all six of the IS macro competences proposed by Cragg et al (2011). Disappointingly, for this small sample of SMEs, few internal competences were improved during the consultant engagement process. This is probably related to how SMEs engage and rely on consultants. Many SMEs are failing to take the opportunity to learn from consultants. Instead, they rely heavily on the consultants for advice and accounting and IS tasks. SMEs could recognise that consultants are a source for enhancing their own IS competences. They could aim to learn from consultants to help build, enhance or improve their internal IS competences, such as Business and IS strategic thinking and Define IS contribution (Cragg et al, 2011).

Furthermore, prior research has identified dangers in SMEs relying heavily on consultants. For example, Howcroft and Light (2008) expressed the concern that the consultants may gain more than the SME; however it seems likely that some SMEs will continue to rely heavily on consultants. Thus, if SMEs decide to rely heavily on consultants, the SMEs need to develop their ability to manage this relationship. Cragg et al (2011: 357) referred to this as the ability to 'manage IS supplier relationships', i.e., to "develop value added relationships between the business and IS suppliers (external and internal), including service level agreements and contract management (performance monitoring, problem resolution and negotiating amendments)". The implication for SMEs is a need to find ways to develop this competence; encouragingly there was some evidence in this study to suggest that SMEs were keen on developing on-going relationships with consultants. Further research could examine how SMEs achieve an ability to manage supplier relationships, and whether this competence influences IS success in SMEs.

It should be noted again that this study was limited to a relatively small number of SMEs seeking a new accounting package. The study focused on SMEs that engaged consultants, thus SMEs that prefer not to use consultants were excluded. Further, it is possible that a different set of SMEs and consultants, and a different application system could present different results. Also, the list of competences may not be an exhaustive list as different frameworks indicate different competences. This study focused on competences that are applicable to IS implementation projects.

6. Conclusions

The major finding from the study is that, rather than help develop IS competences within an SME, IS consultants help SMEs overcome a lack of IS competences. This is an important insight into the relationship between an IS consultant and their client, which can be a significant relationship for SMEs lacking many IS competences. Consultants have an important role to play in growing an SME's ability to exploit the use of IS. Some consultants have embraced this view. The cases provided evidence that, even in firms that possessed IS competences, there was potential for consultants to add further value. Some consultants reaped the benefit of developing a long-term relationship with SMEs. Some consultants had the ability to oversee the growth and development of IS competences in SMEs. The abilities of consultants may have a moderating effect on the development of IS competences within client SMEs.

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