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Determining the information needs of SMEs: a critical success factor analysis.

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Abstract

Introduction. - This paper reports the results of a critical success factor (CSF) analysis of two small businesses that share staff and premises, operating within the same industry, (educational resources) but within different market sectors (early years literacy; religious education).

Method. - Data was collected by interviews with 8 managers, and from a document analysis. The CSF approach is defined and explored as being useful for small to medium sized enterprises (SMEs) in determining their information needs; which are critical to strategy, business development and growth.

Findings. - 9 critical success factors emerged, one of which was “corporate information competence”. Information was also a sub-factor underlying all other critical success factors.

Conclusion. - It is essential for small businesses in today’s competitive environment to take a strategic approach to their information needs if they wish to develop, and remain competitive. If information expertise is not present within the company it is advisable to invest in that expertise through recruitment, training, partnership, or outsourcing. This study confirms previous research findings relating to the “critical” role of information in organisations and specifically SMEs.

Introduction

The business environment is constantly changing and evolving. Businesses themselves change over time. As they grow and develop, the information needs of the business will change and the information systems needed to support growth and development will also need to change (Vakola & Wilson, 2004). It is therefore essential to review those information requirements to continue to align business operations with changing market needs, particularly in a business environment where even SMEs are facing the impacts of globalisation with overseas competition, world wide supply chains, expanding their own markets internationally, and engaging in e-business (Winch & Bianchi, 2006; Taylor & Murphy, 2004; Simpson & Docherty, 2004). The critical success factor method can be useful in assessing changing information and strategic needs to meet market demands (Friesen & Johnson, 1995).

Critical success factors

The classic text by Daniel (1961) proposed that in times of change and growth companies need to focus on their critical information needs relating to corporate “success factors” to fully achieve control and management effectiveness. Rockart (1979: 85) developed the concept popularising the “critical success factor” method which identifies “for any business the limited number of areas in which results, if they are satisfactory, will ensure successful competitive performance for the organization”. They are areas that should receive constant and careful attention by managers in order to monitor performance and improve existing areas of business (Rockart, 1979). Bullen and Rockart (1981) identify three main uses for the CSF method: (1) to determine an individual managers information needs; (2) to aid an organisation in its strategic planning process; and (3) to aid an organisation in its information systems planning process. Though, Friesen and Johnson (1995) illustrate how the tool can be used as a “versatile management tool” and applied to solving a wide range of planning, quality and operational problems across a range of industries.

Five prime sources of CSFs have been proposed by Bullen and Rockart (1981); the industry; competitive strategy and positioning; the environment; temporal factors; and managerial position. Further to this, they suggested that CSFs can be classified by the five aspects listed above; or by internal versus external; or monitoring versus building. Monitoring involves the scrutiny of existing situations such as performance management whilst building CSFs are those that are needed to plan or change for the future e.g. “Establish and communicate a clear strategy for corporate development” as a CSF could be classified as competitive strategy and positioning, internal, building.

CSFs and SMEs

The critical success factor method has been widely applied in large organisations (Saraph *et al*, 1989; Ahire *et al*, 1996; Black & Porter, 1996). CSFs can have equally useful applications within SMEs in securing and maintaining competitive advantage (Dickinson & Ferguson, 1984; Yusof & Aspinwall 1999). CSFs can help SMEs in decision making, developing management information systems, strategic planning and focus organisational development (Dickinson & Ferguson, 1984).

Yusof and Aspinwall (1999) proposed 10 CSFs specifically for SMEs implementing total quality management (TQM); these were established from reviewing past literature. They later surveyed companies to confirm the CSFs and establish four main areas that formed a critical core for SMEs; (1) management leadership, (2) measuring results, progress and performance; (3) appropriate training for employees and (4) adopting a quality assurance system (Yusof & Aspinwall, 2000). Similarly, Achanga *et al* (2006) identified four major CSFs for lean implementation within SMEs; (1) leadership and management strategy; (2) finance (3) organisational culture and (4) skills and expertise. These factors were mirrored by Wong & Aspinwall (2005) who investigated SMEs adopting knowledge management (KM). They proposed a set of 11 CSFs from their survey of 26 companies; their top ranking CSFs were (1) management leadership and support; (2) culture; (3) strategy and purpose and (4) resources. Feindt *et al* (2001) and Jeffcote *et al* (2002) identified sets of critical success factors for fast growth e-SMEs and SMES adopting e-commerce heavily focussed on aspects of information content and IT. Much earlier, Dickinson & Ferguson (1984) identified the necessity of information, particularly Management

Information Systems (MIS) for survival, even within SMEs, but acknowledged that investment in such systems can be beyond affordability for the small business.

Information management was determined to be a “very” critical factor in Tibar’s (2002) Estonian industry study (not specific to SMEs), crucial for the gathering of both internal and external information and the dissemination and management of information within the company and to stakeholders. The critical nature of information management and information systems to sustaining competitive advantage and achieving change is discussed in the literature (Karababas and Cather, 1994; Huotari & Wilson, 2001; Guimaraes; 2000;). This view is shared by Marchand (2000; 8) who states that “Effective use of information is critical to how executives manage their companies and create value in their markets.” Information needs vary from manager to manager and change over time (Rockart, 1979).

This paper considers a case of two SMEs at a time of growth and change, where, as a result of a CSF analysis, corporate information competence emerged as a major CSF supporting organisational development and diversification into new markets.

The case study

The project developed from a need to re-engineer businesses processes in order to sustain growth. The companies’ situation fitting with “leadership crisis” described in Greiner’s (1972) classic corporate growth model; where initial creativity leads to problems as a company grows. Growing companies find themselves in a situation that can no longer be managed through informal communication; they need increased financial control, the founders of the company are burdened with unwanted management responsibilities for which they often lack the skills and knowledge critical for corporate development.

To achieve the growth necessary for the two companies in this case study, a Knowledge Transfer Partnership (KTP) was set up between the businesses and the School of Business Information at Liverpool John Moores University (LJMU). The company Directors recognised a skills gap which they felt the University could help with. The KTP partnership funds the project and places an associate within the company to manage the project.

With any KTP a detailed work plan is submitted for the duration of the project, in this case twenty seven months. The project plan included a number of analytical tools to provide a “rich picture” of the current business situation. e.g. process mapping, IT and information audit and critical success factor analysis to analyse the current business situation, outline a number of strategic options and design and implement the appropriate information support systems to allow for corporate growth.

The companies

Company A (suppliers of a complete range of religious artefacts) and Company B sell high quality teaching resources to schools, nurseries and colleges. Both companies specialize in many innovative, exclusive designs, particularly in early years. Company B has a registered trademark and the company works hard at protecting and exploiting its brand. Both companies also do a small amount of publishing and in-service

training on the use of their products. The market is predominantly UK based currently although both companies have plans to expand globally.

Although Company A and Company B are both separate limited companies with their own accounts, Company B has a third Director who is not connected with Company A; the two companies are intrinsically linked from an operations point of view, sharing staff, plant, and processes.

Company A, has shown stable and steady growth over the past fifteen years. The introduction of the Company B business over the last few years has compounded the need for a more integrated, streamlined and efficient operation to enable further and future growth.

The KTP programme was therefore designed to enable the companies to improve operational efficiency and provide enhanced managerial control and information systems. The Directors will then have both the information and the time to engage in effective strategic planning. The KTP was designed to provide the company with the necessary analytical, process modelling, information and IT systems management and change management skills to successfully redesign and re-engineer their business to ensure its continuing growth and to develop new business opportunities.

What emerged from the initial familiarisation with the corporate environment was a realisation that the lack of business information was more intense than first realised. The situation within the companies was what Daniel (1961) describes as a common problem; a “management information crisis”, where the relevant data are not available for decision making or performance measurement creating a management information problem which can hamper or paralyse business. The problems arise from a gap between the “static information system” and the changing organisational structure at a time of change and growth (Daniel, 1961). The need for examining the critical aspects of the business had become of primary importance as the information was not available to make decisions to enable the project to proceed as planned.

Methods

The method used for this CSF analysis was adapted from Carelli (2004), it being robust, based on the classic CSF research (Rockhart, 1979) and practical for using in a small business situation.

The Carelli (2004) CSF method has five phases:

1. Defining the scope
2. Collecting data
3. Analysing data
4. Deriving CSFs
5. Analysing CSFs

Defining the scope.

The decision was made to identify organisational, CSFs to aid decision making and strategic direction. Carelli (2004) recommends that “..the scope of the exercise must

traverse the entire organization so the domain of each executive-level manager is included and considered.” Therefore, interviews took place with Directors, department managers and team supervisors. To successfully determine CSFs requires, interviewing, significant analysis and discussion with the manager (Carelli 2004).

Collecting the data.

The data collection involved two methods: reviewing critical documents within the organisation and conducting interviews with key staff.

The document review:

A document review is effective in gaining an understanding of the focus or direction of the organisation and its departments. Many organisations document their mission, vision, values and strategic objectives and make these known to stakeholders. This documentation reflects what is important or “critical” to managers with regard to the organisation. (Carelli, 2004)

The document review included:

- Mission statements
- Business objectives
- Staff appraisals document

The interviews:

A total of eight interviews were carried out with the companies’ directors, departmental managers and team supervisors, ensuring representation from each operational unit. The interview schedule (based on Rockarts) was amended (rewording question 4, adding questions 8 and 9) to add value in terms of personal success factors aligned to business goals. Corelli (2004). The managers had not been familiar with the concept of critical success factors prior to the exercise.

The interview schedule:

1. What are the critical success factors in your job right now?
2. In what one or two areas would failure to perform well hurt you most?
3. In what area would you hate to see something go wrong?
4. Assume you are on a desert island with no access to the outside world, what would you most want to know about the organisation when you were rescued three months later?
5. What is your personal mission and role in the organisation?
6. What are your most critical goals and objectives?
7. What are your 3 greatest business problems or obstacles?
8. What measures are implemented to determine if your goals and objectives are being met?
9. What do you hope to achieve with the organisation over the next 2 years?

There was no particular order to the interviews which was to some extent determined by availability. However, the interviews did take place within a working day to avoid

discussion or collaboration between colleagues that may affect the content. The interview team were the KTP associate and an academic supervisor who had been working with the company on the KTP. The interview schedule was structured but the team were prepared to ask follow up questions, or clarifying questions were deemed necessary. The interviewees were asked to consider the differences if any between the two companies in their answers.

The participants were encouraged to understand their role in contributing to the CSF activity and its importance in the development of the organisation. Huotari & Wilson (2001) discuss the value of CSFs in relating information needs of personnel to organisational objectives. A view supported by Yusuf (1995) who sees individual factors such as key skills and good character needing to be aligned with environmental factors such as government and political demands. The participants were reassured that their data would be confidential, this was of concern to all participants as some sensitive issues emerged. Establishing trust between the investigators and interviewees allowed for deep and honest responses which contributed to richness of the data and success of the study. The interviews lasted approximately 30 – 40 minutes. All interviews were taped with permission of the participant.

Organisation of data.

The data was cleansed by removing identities, irrelevant comments and emotive statements. This left factual data and valid perceptions descriptive of the corporate situation which could be formed into a series of “activity statements” (Carelli, 2004). “Activity statements are statements that are harvested from interview notes and documents that reflect what managers do or believe they and the organization should be doing to ensure success. They collectively describe the operational goals, objectives, and activities performed by managers throughout the organization or in the operational unit that supports existence and/or attainment of a CSF”. (Carelli, 2004)

The interviews and document analysis generated a total of 479 activity statements. 97 statements came from the documentation, leaving 372 statements generated by the interviews. Of the total statements, 74 were specific to Company A only and 113 were specific to Company B only; giving 292 statements considered relevant to both companies. At times during the interviews, managers had difficulty in separating out the two companies in their responses, they being so intrinsically linked particularly in certain functions such as operations. At this stage it was useful to have investigators with in depth knowledge of the companies to clarify responses. The activity statements were developed and placed into affinity grouping (similar or related statements).

Data analysis.

The data analysis was carried out by the primary investigator, the associate, who had immersed himself in the companies for the past 6 months developing in depth knowledge of the businesses, their structures, staff, systems, product and markets. Themes emerged from the affinity groupings. 9 main themes emerged, with supporting themes in all groupings.

Derive CSFs.

CSFs were derived around the main themes – and statements developed. The supporting themes highlight the underlying content or intent of a CSF, they provide a description or definition of a CSF e.g. Table 1.

Activity statements:	Supporting Theme
Increase promotion activities and techniques	Invest in promotion, advertising and branding supporting strategic marketing
Present a more professional corporate image	
Produce quality marketing material that gives the company its cutting edge	
Activity statements:	Supporting Theme
Increase customer base	Develop sales capability
Increase sales turnover	
Develop sales techniques	

Table 1. Examples of activity statement and supporting themes.

The supporting themes represent the activity statements in as few a number as possible. The supporting themes are used as a guide to deriving the CSFs. The supporting themes communicate the key messages. These key messages can be restated concisely as a CSF, e.g. *CSF - Achieving market success through effective strategic sales and marketing*. Carelli (2004) stresses the importance of aiming for the fewest number of CSFs that accurately and completely characterise the organisation.

Analyse the CSFs.

The analysis of the CSFs looked at relationships between CSFs and business functions, examined emerging themes and key issues to incorporate into the business strategy.

Findings

Nine identical CSFs emerged for both companies. A number of supporting-themes emerged for each CSF. The supporting themes highlighted differences between the companies reflected by their different markets, the customer base and the differing nature of the products. These factors also lead to some differences in operational requirements.

Supporting themes	Organisational CSFs

Nature of the products ** Product innovation Product management** Product knowledge	1. Product supply: Offer a range of innovative, quality, well priced products appropriate to market need
Branding & promotion** Company profile Strategic marketing** Marketing communications** Sales** Market intelligence	2. Market success: Achieving market success through effective strategic sales and marketing
Communication skills Management communications Customer communications Communications with suppliers General communications	3. Effective corporate communications: Develop the culture and systems that support communication throughout the whole organisation and with its stakeholders
Customer service Customer complaints Customer information and communications	4. Customer relations: Focus on the customer improving customer relations
Skills, training and development Encouragement and reward Staff retention Staff relations and teamwork Management skills and roles Appraisal and job descriptions Working environment	5. Company morale: Provide a working environment conducive to high corporate morale
Operational processes** Delivery and work output Equipment, materials and systems Stock levels and stock information	6. Efficiency of operations: Improve efficiency of all business operations
Financial management & skills Cash flow, debtors/credit control Sales & purchase ledger Overheads Customer accounts & invoicing Pricing	7. Financial stability: Maintain financial stability through effective financial management
Vision Strategic plan and strategic direction Strategic communications Organisational culture Inter-functional co-ordination	8. Strategic management: Establish and communicate a clear strategy for corporate development

Information quality Information systems Information relating to other CSFs: Performance data (operational) Decision support (strategic) Financial information Product information Market intelligence Stock and product information Supplier information Customer information	9. Corporate information competence: Develop information management skills and systems to support business strategy and operations: generate, gather, analyse, disseminate and use the appropriate information effectively, ensuring information security, validity and integrity

Table 2. Organisational critical success factors. ** show where differences apply between the two companies. These difference reflect different products, markets, and operational activities resulting from these.

Information as a CSF

Corporate information competence emerged as a critical success factor in itself. Information also emerged as a critical supporting theme either explicit or tacit throughout all other CSFs.

Corporate information competence:

Examples of activity statements:

Establish management information on the system.

Improve data accuracy, validity, integrity and security.

Corporate information competence is defined here as a company or organisation having information management skills and systems to support business strategy and operations: generating, gathering, analysis, dissemination and use of the appropriate information effectively, ensuring information security, validity and integrity. Information emerged throughout the interviews as being critical for managers at an individual level to enable them to carry out their work and make decisions for future development. A major issue was the lack of information available to managers and the integrity and quality of the information that was to hand. Problems arose such as the inability to make decisions based on sound information, and the inability to monitor performance. Staff lack the skills to fully generate, gather, analyse and disseminate information expertly, unable to exploit the full information potential to support business development and decision making.

Systems support for information management was identified as being on the whole inadequate. The main system was based on the accounts requirements and developed piecemeal over time. As staff had changed, and needs changed, the system had not developed with the company. The potential might exist within the system through ad-on modules and staff training, to provide a system that supports all business functions more fully and in a more integrated way than currently allows. An alternative would be to purchase a new system. Specific problems arose with inaccurate data input,

gaps in the data, inadequate coding and classification of data, inability of the system to produce easily readable reports with the right information.

Information as a supporting theme to other CSFs

Product supply:

Examples of activity statements:

Ensure that staff have good product knowledge.
Have the information to price products appropriately.

In general, all staff had good knowledge of the products and this was seen as important, particularly for Company A dealing with a wide range of religious artefacts and needing to advise and support customers. What was lacking was a clear pricing structure for product pricing and complete and accurate data on best selling products. This lack of management data hindered a planned approach to product development and formal product portfolio analysis.

Market success:

Examples of activity statements:

Produce catalogues that are exciting, fun, informative and colourful giving the company its cutting edge.
Have excellent market research and knowledge of the educational markets.

There is no formal strategic market intelligence within the organisation. More detailed factual information is needed relating to the companies' position within their relative markets and the success of their products. Focussed market research is not within the range skills and expertise of staff in-house. Markets cannot be targeted efficiently without this market research hampering the companies' development. Key managers have tacit knowledge about the industry, the competitive environment, specific markets and gather intelligence on an ad hoc basis. That knowledge is not always communicated throughout the company. Promotion and marketing was also seen as key to providing customers with product information.

Effective corporate communications:

Examples of activity statements:

Stock information needs communicating to the customer.
Investigate the potential for using email and e-commerce more effectively.

Two main information aspects emerged as being critical within this theme; the need for effective communication of information throughout the company (internally) to encourage inter-departmental understanding; and the need for effective communication of information (externally) mainly; to the customers to ensure good customer service; and from the suppliers with whom communications can be difficult (especially for Company A) because of the remote locations of suppliers.

In addition, the company websites lacked sophistication and information content, being only a basic shop window, lacking any e-commerce functionality. Company B

was further developed than Company A, having started to outsource its web development to external contract.

Customer relations:

Examples of activity statements:

Be informative

Pass up-to-date information to the customer

Having good customer relations was seen as critical. There was identified a need to develop the information held about customers so that customer relationship management (CRM) within the company can be enhanced supporting increased sales and marketing activities. This development relies on a good CRM database. Communicating accurate stock and order information was also seen as important in maintaining good customer relations. This information was not always to hand.

Company morale:

Examples of activity statements:

Have well trained knowledgeable staff.

Have the appropriate technical skills and understanding to carry out the job.

The critical nature of company morale was strongly reported during the interviews. The working environment was seen as important, as was a number of HRM functions such as management roles and relationships, skills training and development, and encouragement and reward. The main information critical aspect of this CSF was with regard to having the information to do an effective job in terms of training and development. Information literacy was a key aspect of this more critical within some business function e.g. accounts and finance, than others. Being informed in general about corporate business was also identified as impacting on corporate morale.

Efficiency of operations:

Examples of activity statements:

Have a good system supporting operations.

More accurate stock information needed.

Stock control data was often inaccurate. This compounded problems of over/under stocking and effectiveness in customer supply and delivery. There was some limited information on operational activity, but not detailed enough to allow for efficient monitoring of operations activities or to allow for improvements to be made. Information on and from suppliers was also important and not always available given the complex and diverse nature of the companies' supply chains especially Company A dealing with a large number of small suppliers worldwide (e.g. rural village co-operatives in third world nations).

Financial stability:

Examples of activity statements:

Keep accurate records.

Use information to measure and monitor finances.

The existing system is based on the accounts function therefore this is the business function that is currently best served in terms of information. However, there emerged some problems with data completeness, accuracy, integrity and validity which illustrated a need for data input discipline. Reporting facilities were identified as inefficient requiring substantial amounts of staff time to pull off meaningful reports. Efficiencies needed for effective data output. These reports subsequently required time to be invested in data manipulation, cleansing and analysis. Skills in financial information analysis also needed developing.

Strategic management:

Examples of activity statements:

Establish clear key performance indicators.

Use information to improve organisational planning.

The main critical information need supporting this CSF was not having the information needed to make strategic decisions based on sound evidence. Expensive mistakes sometimes being made in terms of product or market diversification, purchasing decisions, or strategic options. Much of the decision making was based on sound personal knowledge and experience but without the underpinning of hard factual evidence.

Discussion

The nine CSFs that emerged from this case study: (1) product supply; (2) market success; (3) effective corporate communications; (4) customer relations (5) company morale; (6) efficiency in operation; (7) financial stability; (8) strategic management; (9) corporate information competence. Information was a prevailing theme with *corporate information competence* emerging as a critical success factor and information a critical supporting theme either explicit or tacit throughout all other CSFs. These findings are similar to Tibar's 2002 study (not specific to SMEs), who identified critical information needs throughout five key areas of business (1) the market, competitors, customers and suppliers; (2) products, technologies and innovation; (3) resources, finance and workforce; (4) legislation and regulations; (5) economic and political trends.

The critical importance of information in relation to all the case success factors is supported by research from the literature.

Ledwith (2006) states that "the growth of small firms is most likely to occur through the innovation and development of new product and services." In her consideration of a number of small firms, she found that the communication of information required to develop new products could be a problematic organisational factor hampering product development. *Product supply*, innovation and development are critical to the small firms in this case study. Holland (2000) supports the sharing of information and ideas for effective product development highlighting dysfunctional information behaviour as the withholding of information and information gate-keeping. The literature is supportive of the findings in this case study, of extremely innovative small businesses,

with no formal product portfolio analysis, and lacking information to enable them to develop their products on sound financial costings, or target them efficiently. Holland (2000) believes the business environment is one where businesses have to “innovate or die”. Critical to achieving product success she proposes the development of cross-functional teams who share and use information.

Team working further enhances *company morale* which can contribute positively to the growth and development of SMEs and the establishment of a working environment and culture conducive to excellence. (Pasanen & Laukkanen, 2006; Wijewardena, & Cooray, 1996; Yusof & Aspinwall, 1999). Organisational culture was identified by Achanga *et al* (2006) as one of four key critical success factors to achieving lean implementation within SMEs in their study of 10 European organisations. Important to this culture factor were other aspects such as, managerial personality and ability and acceptance of change. These issues were also reflected in activity statements within this case study supporting a working environment conducive to a high *company morale*, though change was felt to be more of a *strategic management* issue concerning future development and the need for strategic information, including clearly communicated succession. One of the prime purposes for CSF analysis is to aid strategic planning especially in times of organisational change (Dickinson 1984). For SMEs with a small staff and key leadership component business continuity and succession planning are important issues which can seriously affect business stability (Sambrook, 2005).

Effective corporate communication of information was an important factor affecting individual managers in the two companies. Poor communication of information, particularly at times of growth, development and change can impact negatively on all other critical business areas and ultimately, corporate strategy and performance (Friesen & Johnson, 1995; Holland, *et al*, 2000; Ledwith *et al*. 2006).

The communication of information was seen as important throughout the supply chain to achieve market success. A view upheld in the literature with Stone (2003) and Ngai *et al* (2004) considering how technology can transform the supplier-customer relations for businesses. At the customer end of that supply chain, the communication of information was seen important by managers in maintaining and improving customer relations. A relationship that Jones (2000) insists does not “.just happen. It needs to be managed.” Central to that management of the customer relationship is the need for customer information, using information to increase customer satisfaction (Marchand, 2001). This CRM information needed was identified in the activity statements underpinning the *Customer relations* CSF.

Other market intelligence is of equal importance to achieving the case CSF of *market success* as small businesses operate in an increasingly competitive global environment. Even small businesses need to have a systematic approach to the gathering, management and analysis of market intelligence, using competitive, customer and operational information for leverage within the industry (Marchand, 2001; Guimaraes; 2000). This information is critical to support decision making and ensure that financial and investments decisions are based on sound evidence. Financial pressures can hamper SMEs. Achanga *et al* (2006) found the small businesses in his study to be “financially inept”, lacking financial skills, knowledge and resources. Access to in depth financial data was a problem in the companies’

studies here, and in agreement to Achanga's study finance emerged as a CSF for SMEs. Dickinson and Ferguson (1984) stated that cash was a universal CSF for small businesses, an opinion confirmed by this study where *finance* emerged as being critical. Yusof and Aspinwall (1999) also identified a lack of resources being an ongoing problem faced by small businesses impacting negatively on the quality of business operations.

The quality of business operations, efficiency and effectiveness can only be measured if the operations are correctly monitored; that information gathered, stored and analysed (Yusof & Aspinwall; 2000). This can be seen as a three stage process (1) identify critical success factors; (2) link performances measurements to the CSFs (3) measure only those factors that can be controlled. (Taylor & Convey 1993; Martin 1997). Information needed for the critical *efficiency of operations* was not always available in this case study. The process to achieving operational efficiency is information intensive but crucial to corporate decision making and establishing corporate information competence.

The definition employed in this study for *corporate information competence*; “a company or organisation having information management skills and systems to support business strategy and operations: generating, gathering, analysis, dissemination and use of the appropriate information effectively, ensuring information security, validity and integrity”, fits well with Peppard *et al* (2000) who propose an “organization information competence framework” based on three broad domains; information strategy competencies, information exploitation competencies and IS/IT supply competencies. Peppard *et al* (2000) proposed that information competencies should not be a solely information systems functions, but should be distributed throughout the whole organisation for business value creation. Marchand (2001) goes further, and argues that managers should adopt an information orientation to business strategy to improve business performance, achieve business leadership, and compete with information. Information orientation he sees as having three elements; IT practices, information management practices and information behaviours and values which link to improved business value in terms of, market share growth, financial performance, product and service innovations and superior company reputation.

Earl (2000) argues that “every business is an information business” with IT, information systems and information as a resource itself supporting and determining business strategy. Kirk (1999) describes the work of managers in SMES as “information intensive” and argues that managers of SME can utilise information, integrating information and business strategy just as successfully as managers in large organisations when supported by effective information management. From this SMEs case study, Company A and Company B show a developing information intensity, they are aware of gaps in their knowledge, skills, and recognise the need for more effective utilisation of information and information competencies within their businesses. The critical success factor analysis has been successful in identifying key areas for strategic focus, with information being critical in all aspects of the business supporting developments in more integrated information systems supporting business growth.

Lessons learned

The CSF analysis is intense and time consuming. In this case, there was a lack of strategic documentation and the interviews proved more useful giving a closer reflection of reality within the company. To some extent, the documents reflected “how it ought to be”, rather than “how it is”.

In this case, the interviewees were open and honest, sharing a number of sensitive issues and feelings. The need for confidentiality is therefore paramount. It also meant that unless carefully managed, the interviewees unburdened themselves, with a tendency to stray from the question. Interview skills are critical. It is important for the interviewer to immerse themselves in the corporate situation, so that a full and thorough understanding of the data can be achieved. All the managers stated they found the exercise useful in being able to reflect on critical business issues.

The data analysis stage can be lengthy. Care must be taken to strip out only irrelevant data in the data cleansing process. The classification of the activity statements for defining the main themes is important, and is an iterative process. A temptation to reduce the data to a bare minimum i.e. single word CSFs should be resisted as this detracts from the understanding of what is critical. The supporting themes provide illustration and description and allow for greater understanding. Establishing the CSFs can be compounded by overlaps of interest, it is important at this stage of analysis to establish the true “essence” of what was being said. This may require the researcher to go back to the original data to confirm the context and meaning of the activity statement.

Ranking CSFs in such a small intense business is difficult were each individual manager will have their own agenda to some extent. The ranking is best carried out at the strategic planning stage by the management team.

Further mapping of the CSFs to organisational functions can establish which functions require more support and strategic development, enabling critical issues to be fed into the organisational strategy. This should be done with the involvement of the key managers and staff

Conclusion

The method adopted was practical for the SME environment. This case study confirms the value of CSF as Bullen and Rockart (1981) proposed; determining the individual managers information needs, aiding the strategic planning process, and aiding the information systems planning process. The initial aim of this study was for the CSF to help determine strategic direction, however the results achieved reaped benefits in all three areas, individual, strategic and information system planning. With managers having knowledge of key areas of performance which when made explicit through the definition of critical success factors “provide a common point of reference for the entire organization (Caralli, 2004).

It is essential for small businesses in today’s competitive environment to take a strategic approach to their information needs if they wish to develop, and remain competitive. If information expertise is not present within the company it is advisable to invest in that expertise through recruitment, training, partnership, or outsourcing. This study confirms previous research findings relating to the “critical” role of

information in organisations and specifically SMEs (Achanga *et al*, 2006; Wong and Aspinwall 2005; Marchand, 2001).

As a result of this study, managers have been able; to reflect on how their individual needs align to organisation goals. Critical areas have been identified for strategic development, and information management and systems planning have been identified as being especially critical to improving business performance, supporting strategic development and maintaining competitive advantage.

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