

## Building Competitive Advantage of Small and Medium Sized Enterprises through Knowledge Acquisition and Sharing

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### **Abstract**

*The level of success enjoyed by an organisation is dependent on its competitive advantage over the competitors. A firm's competitive advantage is positively correlated to its level of knowledge on existing market conditions, and ability to adapt and exploit the prevailing market conditions. However, discourse in existing literature on ways through which small and medium enterprises (SMEs), often constrained by lack of resources, can acquire requisite knowledge needed to build competitive advantage and for continued existence are minimal. This paper discusses how SMEs could enhance their skills and competitiveness by leveraging on the resources and knowledge inherent in networks and partnership arrangements. Specifically, it explains how these arrangements could be utilized to develop knowledge resources and capabilities. This work is theoretical in nature and relies heavily on the review of pertinent existing literature on knowledge acquisition, competitive advantage, networks, partnerships, and performance. Organisations, especially SMEs, the paper argues, can acquire and develop knowledge resources and capabilities via networks and partnerships. The acquired knowledge and capabilities can then be leveraged to create competitive advantage for the enterprises.*

**Keywords:** competitive advantage, small and medium enterprises, knowledge sharing, knowledge acquisition, learning, partnerships, networking

### INTRODUCTION

The increase in the number of organisations offering similar goods and services to consumers has increased the level of competition among organisations. The intensity of competition notwithstanding, an organisation can still enjoy a level of advantage over its competitors. This advantage, also known as competitive advantage, makes the generation of greater sales/margins, as well as the retention and attraction of more customers than one's competitors possible. Traditionally, competitive advantage emanates from sources such as cost structure, quality of products or services, innovation, convenience, distribution network, as well level of customer support. Competitive advantage, in its simplest form, is the advantage that an organisation enjoys over its competitors. Such an advantage is created by offering consumers greater value for money, either in the form of reduced prices or in the provision of services and products that may justify higher prices. The works of authors such as Porter (1998) suggest that sustainable competitive advantage can be attained either by offering the same services as one's competitors but at a lower cost (cost leadership approach), offering superior services to customers, but at the same price offered by competitors (differentiation approach), or concentrating on a market niche (focus approach).

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Although a previously held view was that tangible or physical economic assets of an organisation were the major sources of sustainability and profitability, a gradual but steady change in perception of a firm's real source of sustainability, profitability and competitive advantage has been taking place. It is believed that sustainability and profitability of a firm is dependent on the degree of its competitive advantage over its competitors; the more sustainable a competitive advantage is, the harder it is to be neutralised. Thus, competitive advantage can emanate from intangible sources that ensure adequate utilisation of the knowledge or intellectual capital of an organisation. There have been comparisons of the contribution of tangible and intangible resources to the competitiveness of organisations. For instance, it is argued that because intangible resources allow firms to add value to inward factors of production, competitive advantage would most probably emanate from intangible resources (such as knowledge) than from tangible resources (Hitt, Ireland, Camp, and Sexton, 2001). It would be recalled that a resource in management sciences, is a scarce, non-substitutable, hard to copy, non-tradable, durable, advantageously rent-generating asset that leads to superior performance (Teece, Pisano, and Shuen, 1997).

While the above suggestions seem plausible, there are views that the competitive advantage held by any firm will invariably be duplicated by competitors; and many forms of competitive advantage may not be sustained indefinitely (Shepherd, 1970). D'Aveni (1994) also alluded to this in his hypercompetitive model. Therefore, according to Wessels (2000), a sustainable competitive advantage is only created by a firm when its value-creating processes and position have neither been replicated nor copied by other firms. Although it is doubtful if there would ever be a process that can neither be replicated nor copied, or a position that can neither be equalled nor surpassed, it is possible that through a continuous learning culture or habit, new knowledge and skills on how existing processes and practices can be improved upon are acquired. This ensures that the position as a market leader is maintained. This view is predicated on the notion that inherent knowledge is often harnessed and transformed into processes and activities that become norms, often peculiar to each organisation and representing the source(s) of its core competencies and capabilities. According to Autio, Sapienza, and Almeida (2000), the process through which knowledge is acquired and transferred varies from organisation to organisation. This variation is what makes knowledge a valuable, poorly imitable and non-substitutable resource (Barney, 1991), that is capable of ensuring a sustainable competitive advantage (Prahalad and Hamel, 1990). The above notwithstanding, knowledge is not self-creating; it is acquired through a process of dedicated learning.

While the contents of this paper could be applied to any firm irrespective of size, this paper focuses on small and medium enterprises, because of certain size-peculiar difficulties that they experience. As an example, DeCarolis and Deeds (1999) as well as Hurley and Hult (1998) observe that there is a relationship between new knowledge creation and firm size, in that large firms have more resources to spend on Research and Development (R&D) than small firms do. Again, there are pointers that the ability to apply knowledge is also affected by the size of a firm. For instance, large firms are not only more likely to engage in expenditures that are associated with strategic and operational changes, but can also boast of having the calibre of human resources to understand, implement, and manage such changes (Finch, 1986; Gargeya and Thompson, 1994).

### **SMEs and Competitive Advantage**

The diverse nature of SMEs is such that there no officially recognised single definition of what constitutes an SME. This disparity in definition and its attendant problem was noted in earlier studies (Walters, 2002). Although it may be appropriate to define size by the numbers of full-time employees or their equivalent in some sectors, it would be more

appropriate to use turnover in others (Bolton, 1971). Subsequently, while some classify enterprises based on the number of its employees, Walters (2001) observes that the use of size or “number of employees” as a criterion for definition has been criticised because of the discrepancy in the generally accepted upper limit figures, which not only differ from country to country, but also from sector to sector. In the United Kingdom, a company (or group) qualifies as an SME if it meets two out of three criteria relating to turnover, balance sheet total or number of employees in its first financial year, or in the case of a subsequent year, in that year and the preceding year. The European Union describes an SME as a firm with fewer than 250 employees and which has either a turnover of less than €50m or a balance sheet total of less than €43m (European Union, 2003). In the USA on the other hand, an organisation is an SME if it is an independent business with less than 500 employees (SBA, 2002). In view of this discrepancy, the paper adopts the UK definition of an SME.

These discrepancies in definition notwithstanding, there is unanimity in acceptance and recognition of the vital role played by the SME sector in shaping the economy of nations through the provision of new ideas, products and services and, most significantly jobs (Ghobadian and Gallear, 1996; Iwasaki, 2000). With specific reference to Africa, Albaladejo (2001) notes that more than ninety percent (90%) of all registered business are SMEs. Furthermore, between 16% and 33% of the working age population in most African countries work in micro and small enterprises (Albaladejo, 2001; McPherson, 2000). As could be seen from Table 1 (distribution of the estimated 4 million businesses, 21.7 million private sector employees, and a combined annual turnover of £2,200 billion in the UK), below, this trend is not peculiar to Africa.

**TABLE 1**  
**Statistics of Private Sector Businesses in the UK, at the start of 2003**

Enterprise Size	Percentage Contribution		
	Enterprises	Employment	Turnover
Small (0-49 employees)	99.2	46.2	38.3
Medium (50-249 employees)	0.60	12.0	14.0
Large ( $\geq$ 250 employees)	0.20	41.8	47.6

(Source: DTI Small Business Service, 2004)

A similar impact to the above is noticeable in the rest of the European Economic Area where there are in excess of 20 million SMEs, accounting for around 99% of all EU enterprises, and employing more than 80 million people (The Europa, 2002). The SME sector is a major source of wealth creation and innovation, accounting for about 60% of the EU's Gross Domestic Product (Arias-Aranda, Minguela-Rata, and Rodriguez-Duarte, 2001). Furthermore, SMEs, being suppliers of goods and services to larger organisations, remain the lifeblood of the economy, and herald broader economic development. Thus, it is probable that some countries would not reach their full socio-economic development potential if they ignore the SME sector (Ariyo, 2000). Furthermore, SMEs are important agents of development throughout the world, and the promotion of a country's SME sector is critical for achieving sustainable growth because of the crucial role it plays in maintaining high employment and income generation (UNCTAD, 2005).

The fundamental changes in the organisation of global production, rapid advances in information and communication technologies (ICTs), as well as the emergence of multilateral agreements brought about by globalization have significantly changed the international environment. Although new opportunities have opened up because of this, new problems and threats that pose new challenges for policy makers in developing countries have also been created. Apart from policy issues, SMEs also face a number of intrinsic size difficulties (such

as scale economies, inability to access finance, information, technology and markets and difficulty in obtaining inputs on favoured terms) that limit their competitiveness in the global market. Given the impact of these difficulties, there have been increased calls for specific interventions (policies, programmes and appropriate institutional frameworks) aimed at assisting SMEs overcome these difficulties that are often predicated on market failures that prevent small enterprises from building capabilities. These calls are not out of place as it has been observed that in order to attain competitiveness, both large and small firms in developing countries must build and continuously enhance endogenous capabilities that can add value to existing activities, facilitate introduction of new products and start new services capable of competing in the global economy (Chudnovsky, 2001).

The United Nations Conference on Trade and Development (UNCTAD), through its Bangkok Plan of Action, UNCTAD X, recognises the importance of stimulating the development of SMEs and assisting domestic SMEs meet international standards. The UNCTAD X proposes the strengthening of domestic SMEs as means through which developing countries could improve their competitiveness in the global markets. Competitive advantage, notes OTF Group (2005), can be assured by provision of products and services created by highly skilled people. However, in order to attain this level of competitiveness, organisations must rely less on competition based on comparative advantage and concentrate more on activities (e.g. capacity to compete on cost, quality, delivery, and flexibility) that ensure competitive advantage (UNCTAD, 2005). The availability of a highly skilled workforce that can bring about competition based on cost, quality, delivery and flexibility is made possible through learning and knowledge acquisition. Subsequently, while the above sections have presented overviews of competitive advantage, the SME sector, and a justification for improved competitiveness of the SME sector, the following section shall present viewpoints on the process of learning and knowledge acquisition.

### **LEARNING AND KNOWLEDGE IN PERSPECTIVE**

The term learning according to Harberberg and Rieple (2001) is the process of developing and enhancing routines over time. An intensive activity increases both the ability and enthusiasm of individuals as well as groups to gain and productively apply new knowledge and skills towards growth and successful adaptation to changes and challenges. Thus, learning can be summarised as a lasting practice that enhances the ability to be smart, increase problem solving abilities as well as the capacity to anticipate and adapt to unfolding situations. This was put more succinctly by Terra and Angeloni (2003) who observe that learning enhances knowledge (which is often regarded as an invisible, intangible and difficult to imitate asset). These are in line with the view that learning enhances the capacity to take action (Kim, 1993), and the generation and effective utilisation of knowledge are the keys that enable organisations to change and expand their boundaries (Barney, 1999).

In spite of the fact that the divide between knowledge and learning is so thin, there are still slight differences between these two terms (Terra and Angeloni, 2003). For instance, Keating, Robinson and Clemson (1999) note that while knowledge encompasses what we know and what we can do; an indication of a state and, therefore, potential for action and decision, learning, on the other hand, describes the change in a given knowledge state. Furthermore, learning is a key to surviving the challenges of change (Clark, 1991; Cunningham, 1994; Heywood, 1989); and for an effective change to take place, organisations and individuals must first learn (Argyris, 1993; Fiol and Lyles, 1985; Srivastva, Bilmoria, Cooperrider and Fry, 1995).

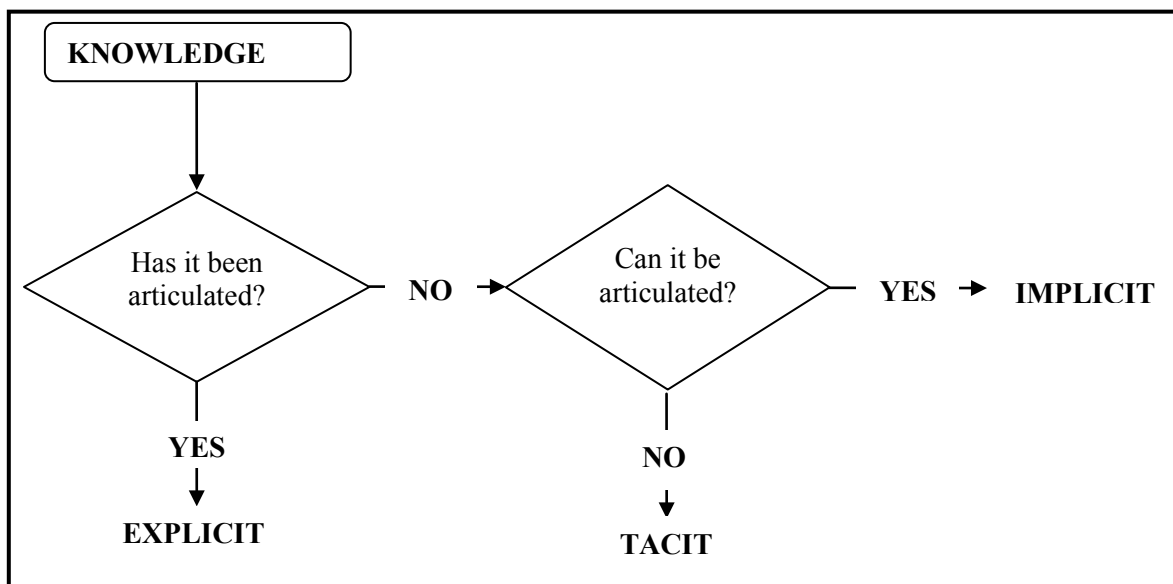
The desire for a better understanding of the sources of a firm's success, as well as the role played by competitive advantage in a firm's rate of growth and level of success has prompted various studies on those unique and value-adding characteristics that are capable of being

transferred between firms and sectors (Coplin, 2002; Peteraf, 1993; Porter, 1985). This, observes Njuguna (2009), led to the development of resource-based and knowledge-based theories that examine the relationship that exist among core resources, capabilities, sustainable competitive advantage and above average performance. A generally accepted view is that learning plays a central role in the success or otherwise of individuals and organisations. Subsequently, the observation credited variously to Senge (1990) and Jorma Ollila (see Harung and Gustavsson, 1994) respectively, that perhaps the only source of sustainable competitive advantage available to an organisation is the rate at which it learns, has pushed many an organisation into adopting continuous learning (Goh, 2003) as survival strategies.

Knowledge as a concept has been at the centre of scholarly discourses for a very long time now (Grant, 1996). Knowledge, defined as a fluid mix of framed experience, values, contextual information, and expert insight that provides a structure for evaluating and incorporating new experiences and information, often becomes embedded, not only in documents or repositories, but also in organisational routines, processes, practices, and norms (Davenport and Prusak, 1998). This view, according to Terra and Angeloni (2003), suggests that knowledge not only dwells in the mind of an individual, but also describes the combined effect of human experience as well as reflection based on a set of individual and collective beliefs.

Knowledge exists in different forms that need to be fully understood. Nickols (2000) distinguishes between knowledge that is reflected in a person's state as well as in that person's capacity for action, and knowledge that has been articulated and frequently recorded. This distinction is shown in Figure 1 below.

**FIGURE 1**  
**The distinction among explicit, implicit and tacit knowledge**



(Source: adapted from Nickols, 2000)

This reflects Polanyi's (1967) distinction between tacit and explicit knowledge. A tacit knowledge is knowledge that cannot be adequately expressed/articulated (Nickols, 2000), because it is often rooted in individual experiences, and involves personal beliefs, perspectives and values (Polanyi, 1967). This form of knowledge, therefore, consists of a range of conceptual and sensory information and images that can be brought to bear in an

attempt to make sense out of something (Hodgkin, 1991). Implicit Knowledge, on the other hand, is knowledge, which though can be articulated is yet to be articulated and can only be implied by, or inferred from observable behaviour or performance (Nickols, 2000). Knowledge becomes explicit if it has been articulated and (in most cases) captured in the form of texts, tables, diagrams, product specifications, documented best practices, formalised standards, etc. Thus, explicit knowledge is formal and systematic knowledge (Nonaka, 1991), which is dependent on norms, attitudes, flow of information, and ways of making decisions that shape how people deal with one another.

While scholars such as Grover and Davenport (2001) have argued that tacit and not explicit knowledge determines a firm's competitive advantage, others observe that both tacit and explicit forms of knowledge are not dichotomous states of knowledge, but are rather reciprocally dependent and reinforcing qualities of knowledge (Alavi and Leidner, 2001). This argument seems to reinforce an earlier view by Polanyi (1967) that the structure necessary to develop and interpret explicit knowledge is built around the tacit form of knowledge. These views notwithstanding, it is not out of place to argue that explicit knowledge contributes more to performance improvement (sustained competitive advantage) in organisations than tacit knowledge. This is because knowledge can only bring about an improvement in performance if it has been captured, organised, disseminated, and used appropriately (Wagner, 2003). This view is further reinforced by D'Aveni's 7Ss framework which not only describes how competition could be disrupted, but also provides a useful model for an effective evaluation and assessment of competitors' strengths and weaknesses, thus helping an organisation to remain competitive in a hypercompetitive market (D'Aveni, 1994).

It follows from the above that learning and knowledge are major means of responding to the uncertainties of the business environment (Antonacopoulou, 1999) such that the attainment and sustenance of a competitive edge over competitors are affected by the possession and effective utilisation of requisite knowledge. The contribution of learning and knowledge towards the survival of organisations is more pronounced in sectors and environments where competition is innovation-driven and work tends to be varied (Terra and Angeloni, 2003). This assertion is supported by the result of the Third Community Innovation (CIS3) survey carried out in France between 1998 and 2000 which shows that 23% of industrial companies (made up of 35% of innovating companies and 13% non-innovating companies) forged partnerships or alliances for knowledge acquisition (Sessi, 2002).

### **Linking Knowledge to Competitive Advantage**

The survival and attainment of sustainable competitive advantage by an organisation is dependent on the recognition of knowledge as a strategic resource that ought to be created and harnessed effectively. Furthermore, Aaker (1989) observes that the acquisition and preservation of superior performance that leads to competitive advantage is known to be dependent on the level of available resources and capabilities. This situation is further dependant on inherent knowledge because knowledge resources and capabilities that have been acquired or developed through various learning processes broaden an understanding of the peculiarities of any business environment. In so doing, the ability of individuals and organisations to respond to different circumstances improved (Sinkula, 1994), and its competitive position over their competitors sustained (Spender and Grant, 1996). The ability to continuously acquire, assimilate, disseminate, and use knowledge is a determinant to success as it leads to waste minimisation, innovation of products, better product development procedures, improved quality, flexibility in a dynamic market, improved customer service (Huber, 1991; Senge, Roberts, Ross, Smith, and Kleiner, 1994) among others. According to

Quinn (1992), the ability to convert intellectual resources into a chain of services in a form most useful for customers is what makes successful enterprises. Hence, for optimum performance and growth, there is a need for organisations to integrate and share knowledge (Zack, 1999). These views have been corroborated empirically. For instance, the result of a survey carried out by The Economist Intelligence Unit (2005) shows that more firms now believe that there are substantial rewards to be gained from sharing knowledge. An important deduction to be made from the survey is those activities that provide greater opportunities for customer loyalty, improved turn-over, increased profit, as well as competitive advantage had higher response rates (20% or more). Interestingly, these activities are all dependent on the ability to recognise changes in market situation, identify customer behaviour patterns, and adopt appropriate measures to address these. In the light of this, The Economist Intelligence Unit (2005:7) further observes that “Firms believe that the ability to understand their customers’ needs, and to predict changes in their behaviour, could give them a decisive advantage over their competitors. And yet this is an area where firms’ knowledge-management capabilities are often weakest.”

It should be noted that an improved performance is made possible only by the change in established ways of doing things, and this is facilitated by learning. This view lends credence to the conclusion drawn by Hitt, Hoskisson, and Ireland (1990) that distinctive competencies emanate from intrinsic rather than extrinsic factors. A sustainable competitive advantage in an organisation is believed to be achievable only through a systematic application of often difficult to imitate inherent individual resources in the everyday activity of the organisation. Earlier research works in the field of competitive advantage such as Barney (1991), Grant (1996a, 1996b), Nonaka (1991, 1994), Pisano (1994), Prahalad and Hamel (1990), as well as Wernerfelt (1995) suggest that individual resource(s) play key roles in creating sustainable competitive advantage in organisations.

Again, it could be inferred from D’Aveni (1994) that competitive advantage cannot be maintained indefinitely and attempts at sustaining an advantage may be detrimental to an organisation’s survival by affecting the possibilities of gaining new advantages. Against this background, D’Aveni’s 7 Ss framework provides a good strategic direction on how firms can overcome competition in a hypercompetitive market through an effective evaluation and assessment of the strengths and weaknesses of competitors. The 7 S’s model (superior stakeholder satisfaction, strategic soothsaying, speed, surprise, shifting the rules of competition, signalling strategic intent, simultaneous and sequential strategic thrusts) can potentially help managers to create and identify new organisational responses, especially in markets where the rate of change makes sustaining a business strategy and its advantages difficult. Upon a critical analysis of these factors, it could be seen that none of these could be achieved without an in-depth knowledge of the nature and direction of competition, and proactively establishing measures that would effectively neutralise such forces.

The mere possession of assets (tangible and intangible, human and non-human) does not create sustainable competitive advantage. A sustainable competitive advantage comes from the ability of an organisation to control its assets and use these assets to formulate and apply value-enhancing strategies in its activities (Barney, 1991; Wernerfelt, 1984). This view is put more emphatically in the knowledge-based view of the firm, which argues that a firm's ability to create and apply knowledge are key to creating and sustaining its competitive advantage (Grant, 1996a, 1996b; Nonaka, 1994; Teece, 1998b, 2000; Teece *et al.*, 1997; Wernerfelt, 1984, 1995).

Numerous reasons have been given for this. For instance, Liebeskind (1996) points out that competition has become more knowledge-based, thus, causing a shift in focus from physical or labour resources to knowledge resources as the real sources of sustainable competitive advantages in organisations. In their contribution, Amit and Schoemaker (1993)

as well as Peteraf (1993) observe that differences in factors such as the competitiveness of firms emanate from the way available resources and capabilities are developed, organised, and utilised in creating and applying value-enhancing strategies. There is a further argument that the effective application of knowledge (a strategic asset) invariably leads to a sustainable competitive advantage (Grant, 1995, 1996b). Furthermore, Doz (1996) argues that major determinants to the successful implementation of business strategies by organisations are the acquisition and development of knowledge, which are sources of competitive advantage (Nonaka, Takeuchi, and Umemoto, 1996). In view of this, in the contemporary global economy, knowledge has become a pre-requisite to achieving a sustainable competitive advantage (Chakravarthy, McEvily, Doz, and Rau, 2003) and the proper management of intellectual capital plays a fundamental role in improving the competitive advantage of leading organisations (KPMG, 2000).

The above views notwithstanding, it must be recognised that knowledge is not created for its own sake, it must flow into actions if it is to be useful and profitable (Demarest, 1997). As an illustration, in a free market economy, irrespective of the fact that knowledge creation produces and sustains profit potential, it is only those organisations that have successfully applied created or acquired knowledge that actually make profits (Spender, 1994). This implies that learning new skills alone cannot create the much needed competitive edge over competitors; this emanates from the translation or application of acquired skills/knowledge into new technologies, goods, or services, complemented by its proper dissemination (Grant, 1996b; Nonaka, 1991; Spender, 1994). Thus, the creation and application of knowledge should be the cardinal point of a firm's strategy (Droge, Claycomb, and Germain, 2003).

A school of thought believes that the discrepancy in the level of inherent knowledge is accountable for the persistent performance differences among firms. This view is supported by Kogut and Zander (1992) who note that the heterogeneous and inimitable nature of knowledge resources make knowledge not only the primary source of value, but also a determinant to performance differences across firms. Consequently, only firms that create new knowledge at a lower cost and a faster rate, and apply this knowledge effectively and efficiently, will be successful at creating competitive advantages (Liebeskind, 1996; Nonaka, 1991). Bierly (1999) argues that for a knowledge competence to remain unique to a firm and in a form that cannot be copied by competitors, it must not be obtained from a source that is also available to competitors but be internally developed. However, it may be worth noting that competitive advantage does not depend on the source of knowledge or skill, but rather on the extent of application of acquired knowledge or skill by an organisation (Spender, 1994; Teece, 2000).

Empirical research, observes Droge *et al.* (2003), does not always support the acclaimed positive effect of knowledge on performance and this could discourage both individuals and organisations from actively pursuing learning and acquisition of knowledge. However, it should be noted that the creation or acquisition of new knowledge has an anecdotal positive effect on performance (Gold, Malhotra, and Segars, 2001). This discrepancy in views notwithstanding, knowledge creation and firm effectiveness are hypothesized to relate positively (Droge *et al.*, 2003). This relationship or contribution of knowledge to improved performance comes from an increased speed of product/service delivery at lower costs and higher profit margins (Nonaka, 1994). Furthermore, while it is acknowledged that applied knowledge may not have a direct impact on profit margin it would be difficult to imagine an immediate cause of an improved profit margin that cannot be attributable, at least in part, to applied knowledge (Liebeskind, 1996).

## **STRATEGIES FOR ENHANCING COMPETITIVENESS IN ORGANISATIONS**



An organisation can enhance its competitiveness through engagement in innovative activities. Organisations that adopt this strategy (also known as the innovation strategy) actively pursue and invest heavily in research and development (R&D). In view of the strong empirical relationship that exists between innovation and R&D (Audretsch, 1995), this strategy is thus deeply rooted on the belief that a major source of new knowledge is research and development. However, SMEs in Africa, as in the rest of the developing world, are constrained by unfavourable economic policies by the government that inhibit growth or the desire to invest in activities such as the acquisition of new knowledge which many SMEs see as a risky activity that cannot be justified (OECD, 2000). Furthermore, as a strategy through which SMEs seek to appropriate returns from their knowledge base, this strategy is complemented by adequate human capital and skilled labour force.

Another strategy, the information technology (IT) strategy relies on the modern utilisation of IT as a way of reducing costs and increasing productivity of SMEs (OECD, 2000). Although the internet and some other new technologies have the potential to mitigate economies of scale and the gains traditionally associated with large scale production, these gains are likely to be affected by minimal access to these new technologies by small businesses and individuals in the developing economies.

Another strategy is the niche strategy, whereby SMEs focus on a narrow product line. The success of this strategy is dependent on the existence of high technical expertise; thus a substantial part of company resources is usually devoted to maintaining market leadership in that niche. The success of this is further dependent on a good mix of product specialisation with geographic diversification as this leads to the creation of a sufficient scale to recover R&D expenses and to maintain costs at a reasonable level. Although this strategy, in combination with an efficient diversification plan, has turned SMEs that apply it into hidden economic champions (OECD, 2000; Simon, 1992), this impact is however peculiar to developed economies, and may not be as effective in developing and third world economies, to which most African economies belong. This is because of the shortage of skilled manpower, limited access to high technology, ICT, Finance, among others.

Organisations may also adopt the network strategy, whereby SMEs work and cooperate with other firms in order to improve their performance. It has been observed that the level of interdependency and exchange among individuals (Saxenian, 1994) influences the performance of organisations. For instance, Saxenian (1990) observes that the success of Silicon Valley was enhanced not so much by the concentration of skilled labour, suppliers and information, but rather by a variety of regional institutions, trade associations, local business organisations, and a myriad of activities including networking services that the region's enterprises often cannot afford individually. The diffusion of intangible technological capabilities and understandings, which is promoted by the exchange of technical and market information, is enabled by the ease with which relationships are formed and maintained in network arrangements (Saxenian, 1990). This seems to be in line with the view that the exchange of complementary knowledge across diverse firms and economic agents yields greater returns on new economic knowledge and a greater variety of industries within a geographic region promotes knowledge externalities, ultimately innovative, activity and economic growth (Jacobs, 1969).

Closely related to the network strategy is the cluster strategy, whereby SMEs seek to enhance their competitiveness in global markets by participating in the activities of localised geographic groups. This strategy can be applied in circumstances where strategic knowledge is tacit because high context, uncertain knowledge is best transmitted in face-to-face interactions and through frequent and repeated contact (Von Hippel, 1994).

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### **Enhancing Competitive Advantage through Networking**

It could be seen from the preceding section that one way of internally developing and sustaining knowledge is by engaging in research and development (R&D) programmes (Hitt, Ireland, and Lee, 2000). However, it is recognised that organisations, at one time or another, may neither possess, nor have access to the needed knowledge or intellectual capital. The result of a survey carried out in UK shows that lack of resources (financial and intellectual) affect the desire of SMEs to embark on many improvement initiatives (Diugwu, 2008). In circumstances such as this, another way of creating/enhancing knowledge is through targeted training offered by training providers, or through business associates (for instance in networks and partnership arrangement).

A partnership according to Mentzer, Min, and Zacharia (2000, p. 550) is an “inter organizational entity developed between two independent organizations in a vertical relationship within a supply chain”. The transfer of knowledge, or simply learning, in partnership arrangements could involve learning about one’s partner, where most of the information is tacit; learning about tasks, predicated upon the establishment of clear objectives and goals expected of the partners; and learning about the outcome of such relationships (Doz, 1996). Although the argument by organisations that they are often discouraged from training their employees to acquire new skills and competencies by the fear that they may quit their jobs after these trainings is appreciated, it should be noted that this fear may affect their competitive advantage. Even though Teece *et al.* (1997) believe that human capital is more mobile than intangible resources, the threat posed by this mobility to competitive advantage is minimal because it is only through an effective integration of human capital with other complementary organisational resources that these individual knowledge could be transformed into deep rooted organisational competences and capabilities. Thus, organisational capital such as reputation, competencies and capabilities which are rare and difficult to imitate, can only be created when individual and collective knowledge, acquired through different learning processes, are effectively converted into routines, processes, and systems (Armstrong, 2001). The importance of internally transforming acquired knowledge into value creating capability is further alluded to by Autio, Yli-Renko, and Sapienza (2002) who submit that the difficulty in replicating organisational competencies is caused by the uniqueness of the process through which individual organisations acquire and transfer knowledge. Again, according to Örténblad (2004), the ability of an organisation or leader is not measured by what it/(s)he knows (ingredient of learning) but rather by how it/(s)he learns (process of learning) and how it/(s)he influences the status quo (product of learning).

A study by Boddy, Cahill, Charles, Fraser-Kraus, and Macbeth (1998) demonstrate that learning is stimulated by partnering and this has brought about tangible business benefits such as reduced cost of operation, and an enhanced efficiency to companies. Learning in supply chains is enhanced when organisations collaborate, and a leading partner acts as a coordinator; this ensures that a process of learning occurs throughout the chain (Gereffi, 1995). Collaboration in this context, is the degree to which people can combine their mental efforts in order to achieve common goals (Nunamaker, Briggs and Vreede, 2001). Partnerships and networking facilitates the pooling together and interaction of complementary skills to produce a shared understanding that they did neither previously possess individually nor could have come up to on their own (Schrage, 1990). Partnering and networks not only add value to an organisation’s activities, but also helps in the improvement of its competitiveness through an effective sharing of information, skills and resources (Department of Trade and Industry, 2004). Subsequently, partnering and networks offer direct benefits to an entire supply chain and remain the most significant channel of improving performance of organisations (Larson and Drexler, 1997), and ensuring survival of organisations (Battenburg and Rutten, 2003) through better access to complementary skills,

economies of scale, risk sharing, and knowledge (Clark and Fujimoto, 1991; Powell, 1987). With regards to SMEs, this view is substantiated by the result of a survey carried out by Chen, Duan, Edwards, and Lehaney (2006) which shows that social and electronic networks were important channels through which SMEs can acquire knowledge.

Although there is an observed positive impact of knowledge on the creation and sustenance of competitive advantage of an organisation (Grant, 1991), it is not enough learning or acquiring new skills, or knowledge; equally important is the establishment of mechanisms or structures capable of sustaining the acquired knowledge over time (Black and Boal, 1994). Building competitive advantage through partnerships is a concerted effort that requires facilitation or coordination of learning. This is not always easy as there are obvious difficulties in setting up appropriate and balanced systems that promote the development and implementation of knowledge sharing in supply chains made up of discrete and independent entities having different cultures (Lehaney, 1999). For instance, learning in supply chains is most likely to be affected by any discernible differences in organisational cultures that may limit the willingness and ability to learn. In view of the fact that learning depends on conditions that encourage shared norms and values, it is important that organisations establish partnerships with, or join networks that have similar organisational norms and values (Wagner, 2003). This ensures the maintenance of a narrow gap in knowledge among the partners as successful learning partnership is usually built upon a base that ensures that a minimal gap is maintained between the partners, as too wide a gap affects the acquisition and transmission of knowledge (Dodgson, 1991).

There are many reasons why organisations establish co-operative arrangements with other organisations. One reason for this, it has been suggested, is the creation of internal knowledge (Richter and Vettel, 1995). There are recorded instances of improvements in organisational capabilities brought about by collaborations. For instance, by applying knowledge that was acquired from a supply chain to its activities, a company was able to achieve cost efficiency in the design and manufacture, and a decrease in the typical time between programme launch and first delivery (Siekman, 2002). Further contributions of supply chains or networks to knowledge acquisition is alluded to in Gold *et al.* (2001), where a positive relationship was shown to exist between knowledge application and firm effectiveness. Again, Tan, Kannan, Handfield, and Ghosh (1999) established a positive relationship between growth and financial performance of organisations and their ability to integrate and apply knowledge from major supply chain members (i.e., suppliers, manufacturers, and customers).

## CONCLUSION

Knowledge will be critical for organisational success in the coming years, and organisational effectiveness would require the improvement of organisational capabilities for leveraging and exploiting knowledge. The ability of an organisation to attain and maintain a vantage position in a business environment is dependent on its ability to create, and when necessary transfer knowledge (internally or externally). Subsequently, the ability to create an environment that is conducive to learning and adaptation of skills and knowledge to suit prevailing circumstances faster than ones competitors' might be the only source of sustainable competitive advantage. This conclusion is informed by the fact that learning and knowledge affects one's abilities to respond to the uncertainties of the business environment.

Organisations are advised to imbibe a continuous learning culture because whereas, a single instance of organisational learning may lead to the skills, practices and processes that are relatively easy to replicate, continuous learning lead to ingrained skills capable of producing snowballing effects which are much more difficult to replicate by outsiders. Thus,

the possession and effective utilisation of necessary knowledge can, and indeed does offer an organisation a competitive edge over its competitors. Partnering and collaborations offer direct benefits to an entire supply chain and remain the most significant channel of improving the performance of organisations (especially SMEs) by adding value to an organisation's activities, and enhancing competitiveness through an effective sharing of information, skills and resources.

This is a concept paper aimed at initiating a discussion on how partnering and networking can help in improving the competitive advantage of organisations, especially small and medium enterprises. Thus, there is a need to ascertain the feasibility of this through empirical studies.

#### REFERENCES

- Aaker, D. (1989). Managing assets and skills: the key to sustainable competitive advantage. *California Management Review*, 31, 2:91-106.
- Alavi, M., and Leidner, D. E. (2001). Knowledge management and knowledge management systems: conceptual foundations and research issues. *Management Information Systems Quarterly*, 25, 1:107-136. <http://dx.doi.org/10.2307/3250961>
- Albaladejo, M (2001). **Understanding SME dynamics in Africa: an overview of the current state and recent trends**. Chapter 2, First Draft.
- Amit, R. H., and Schoemaker, P. J. H. (1993). Strategic assets and organizational rent. *Strategic Management Journal*, 14:33-46. <http://dx.doi.org/10.1002/smj.4250140105>
- Antonacopoulou, E.P. (1999) Individuals' responses to change: the relationship between learning and knowledge. *Creativity and Innovation Management*, 8, 2:130-139. <http://dx.doi.org/10.1111/1467-8691.00127>
- Argyris, C. (1993). *On organisational learning*. Cambridge, MA: Blackwell.
- Arias-Aranda, D., Minguela-Rata, B. and Rodriguez-Duarte, A. (2001). Innovation and firm size: an empirical study for Spanish engineering consulting companies, *European Journal of Innovation Management*, 4, 3: 133-141. <http://dx.doi.org/10.1108/EUM0000000005671>
- Ariyo, D. (2000). Small firms are the backbone of the Nigeria economy. *Africa Economic Analysis* <<http://www.afbis.com/analysis/small.htm>> [13 January 2004]
- Armstrong, M. (2001). *A handbook of human resource management and practices*. London: Kogan Page.
- Audretsch, D. B. (1995). *Innovation and industry evolution*. Cambridge, MA: MIT Press
- Autio, E., Sapienza, H. J., and Almeida, J. G. (2000). Effects of age at entry, knowledge intensity, and imitability on international growth. *Academy of Management Journal*, 43:909-924. <http://dx.doi.org/10.2307/1556419>
- Autio, E., Yli-Renko, H., and Sapienza, H. J. (2002). Social capital, knowledge acquisition and competitive advantage in technology-based young firms. *Strategic Management Journal*, Special Issue on Entrepreneurial Strategies and Wealth Creation in the 21<sup>st</sup> Century.

- Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 77(1): 99-120. <http://dx.doi.org/10.1177/014920639101700108>
- Barney, J. B. (1999). How a firm's capabilities affect boundary decisions. *Sloan Management Review*, Spring: 137-45.
- Batenburg, R. S., and Rutten, R. (2003). Managing innovation in regional supply networks: a Dutch case of "knowledge industry clustering. *Supply Chain Management: An International Journal*, 8, 3:263-270. <http://dx.doi.org/10.1108/13598540310484654>
- Bierly, P. E. III. (1999). Development of a generic knowledge strategy typology. *Journal of Business Strategies*, 16, 1:1-26.
- Black, J. A., and Boal, K. B. (1994). Strategic resources: traits, configurations and paths to sustainable competitive advantage. *Strategic Management Journal*, 15:131-148. <http://dx.doi.org/10.1002/smj.4250151009>
- Boddy, D., Cahill, C., Charles, M., Fraser-Kraus, H., and Macbeth, D. K. (1998). Success and failure in implementing supply chain partnering: an empirical study. *European Journal of Purchasing and Supply Management*, 4, 2: 143-151. <http://dx.doi.org/10.1002/smj.4250151009>
- Bolton, J. E. (1971). *Report of the committee of inquiry on small firms*. London: HMSO
- Chakravarthy, B., McEvily, S., Doz, Y., and Rau, D. (2003). Knowledge management and competitive advantage. In M. Easterby-Smith and M. A. Lyles (Eds.) *The Blackwell handbook of organizational learning and knowledge management*. Oxford, UK: Blackwell Publishing.
- Chen, S., Duan, Y., Edwards, J. S., and Lehaney, B. (2006). Toward understanding inter-organizational knowledge transfer needs in SMEs: insight from a UK investigation. *Journal of Knowledge Management*, 10, 3:6-23. <http://dx.doi.org/10.1108/13673270610670821>
- Chudnovsky, D. (2001). *Fostering national competitiveness in a globalizing world economy*. Discussion paper. UNCTAD
- Clark, N. (1991). *Managing personal learning and change: a trainers guide*. London: McGraw-Hill.
- Clark, K. and Fujimoto, T. (1991). *Product development performance: strategy, organization and management in the world automobile industry*. Boston, MA: Harvard Business School Press
- Coplin, I. H. (2002). *Competitive advantages and the SMEs: the role of distinctive competences as determinants of success*, PhD Thesis, Universitat Autononms De Barcelona.
- Cunningham, I. (1994). *The wisdom of strategic learning: the self-managed learning solution*, London: McGraw-Hill.
- Davenport, T., and Prusak, L. (1998). *Working knowledge: how organizations manage what they know*. Boston: Harvard Business School Press.

- D'Aveni, R. (1994). *Hypercompetition: managing the dynamics of strategic manoeuvring*. New York: Free Press.
- DeCarolis, D. M., and Deeds, D. L. (1999). The impact of stocks and flows of organizational knowledge on firm performance: an empirical investigation of the biotechnology industry. *Strategic Management Journal*, 20, 10:953-968.  
[http://dx.doi.org/10.1002/\(SICI\)1097-0266\(199910\)20:10<953::AID-SMJ59>3.0.CO;2-3](http://dx.doi.org/10.1002/(SICI)1097-0266(199910)20:10<953::AID-SMJ59>3.0.CO;2-3)
- Demarest, M. (1997). Understanding knowledge management. *Long Range Planning*, 30, 3: 374-384. [http://dx.doi.org/10.1016/S0024-6301\(97\)90250-8](http://dx.doi.org/10.1016/S0024-6301(97)90250-8)
- Department of Trade and Industry (2004). *Partnering and your business*. DTI.  
<http://www.dti.gov.uk/bestpractice/assets/partnering.pdf?pubpdfload=04%2F812>
- Diugwu, I. A. (2008). *A framework to evaluate critically health and safety strategies in supply chains in the UK*. PhD Thesis, Coventry University, UK
- Dodgson, M. (1991). Technological collaboration and organisational learning: a preliminary view of some key issues, DRC Discussion Paper, Science Policy Research Unit. Sussex, UK: University of Sussex.
- Doz, Y. L. (1996). The evolution of cooperation in strategic alliances: initial conditions or learning processes. *Strategic Management Journal*, 17:55-83.  
<http://dx.doi.org/10.1002/smj.4250171006>
- Droge, C., Claycomb, C., and Germain, R. (2003). Does knowledge mediate the effect of context on performance? Some initial evidence. *Decision Sciences*, 34, 3: 541-568.  
<http://dx.doi.org/10.1111/j.1540-5414.2003.02324.x>
- DTI Small Business Service (2004). *DTI News Release: URN 04/92. 26 August 2004*.  
<[http://www.sbs.gov.uk/SBS\\_Gov\\_files/researchandstats/news162.pdf](http://www.sbs.gov.uk/SBS_Gov_files/researchandstats/news162.pdf)> [22 December 2004]
- Economist Intelligence Unit (2005). Know how: managing knowledge for competitive advantage, An Economist Intelligence Unit White Paper. *The Economist*, June
- Europa (2002). *Definition of Small and Medium-Sized Enterprises (SME) - Second External Consultation - to 10.9.2002*.  
<http://europa.eu.int/comm/enterprise/library/enterprise-europe/news-updates/enterprise-policy/20020708.htm>, [25 August 2005]
- European Union (2003). Commission recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises (2003/361/EC). *Official Journal of the European Union*, OJ L 124 of 20.5.2003, 36
- Finch, B. (1986). Japanese management techniques in small manufacturing companies: a strategy for implementation. *Production and Inventory Management Journal*, 10, 3: 30-38.
- Fiol, C. M. and Lyles, M. A. (1985). Organisational learning. *Academy of Management Review*, 10, 4:803-813.

- Gargeya, V. B., and Thompson, J. P. (1994). Just-in-time production in small job shops. *Industrial Management*, 36, 4:23-26.
- Gereffi, G. (1995). International trade and industrial upgrading in the apparel commodity chain. *Journal of International Economics*, 48, 1:37-70.  
[http://dx.doi.org/10.1016/S0022-1996\(98\)00075-0](http://dx.doi.org/10.1016/S0022-1996(98)00075-0)
- Ghobadian, A. and Gallea, D. (1996). **Total Quality Management in SMEs.** *OMEGA*, 24, 1: 23-106. [http://dx.doi.org/10.1016/0305-0483\(95\)00055-0](http://dx.doi.org/10.1016/0305-0483(95)00055-0)
- Goh, S. C. (2003). Improving organizational learning capability: lessons from two case studies. *The Learning Organization*, 10, 4: 216-227.  
<http://dx.doi.org/10.1108/09696470310476981>
- Gold, A. H., Malhotra, A., and Segars, A. H. (2001). Knowledge management: an organizational capabilities perspective. *Journal of Management Information Systems*, 18, 1:185-214.
- Grant, R. M. (1991). The resource-based theory of competitive advantage: implications for strategy formulations. *California Management Review*, 114-135.
- Grant, R. (1995). A knowledge-based theory of inter-firm collaboration. *Academy of Management-Best Paper Proceedings*, 17-21.
- Grant, R. M. (1996a). Prospering in dynamically competitive environments: organizational capability as knowledge integration. *Organization Science*, 7, 4: 375-387.  
<http://dx.doi.org/10.1287/orsc.7.4.375>
- Grant, R. M. (1996b). Toward a knowledge-based theory of the firm. *Strategic Management Journal*, 17, 10:109-122.
- Grover, V., and Davenport, T. H. (2001). General perspectives on knowledge management: fostering a research agenda. *Journal of Management Information Systems*, 18, 1:5-21.
- Haberberg, A., and Rieple, A. (2001). *The strategic management of organisations*. Harlow: Prentice-Hall.
- Harung, H. S., and Gustavsson, B. (1994). Organizational Learning based on Transforming Collective Consciousness. *The Learning Organization*, 1, 1: 33-40.  
<http://dx.doi.org/10.1108/09696479410053421>
- Heywood, J. (1989). *Learning adaptability and change: the challenge for education and industry*. London: Paul Chapman.
- Hitt, M. A., Hoskisson, R. E., and Ireland, R. D. (1990). Mergers and acquisitions and managerial commitment to innovation in M-form firms. *Strategic Management Journal*, 11: 29-47.
- Hitt, M. A., Ireland, R. D., and Lee, H. (2000). Technological learning, knowledge management, firm growth, and performance: an introductory essay. *Journal of Engineering and Technology Management*, 17, 3/4: 231-246.  
[http://dx.doi.org/10.1016/S0923-4748\(00\)00024-2](http://dx.doi.org/10.1016/S0923-4748(00)00024-2)

- Hitt, M. A., Ireland, R. D., Camp, S. M., and Sexton, D. L. (2001). Strategic entrepreneurship: entrepreneurial strategies for wealth creation. *Strategic Management Journal*, 22, 6/7(special issue): 479-491.
- Hodgkin, R. (1991). Michael Polanyi - Prophet of life, the universe and everything. *Times Higher Educational Supplement*, September 27: 15.
- Huber, G.P. (1991). Organization learning: an examination of the contributing processes and the literatures. *Organization Science*, 2:88-115. <http://dx.doi.org/10.1287/orsc.2.1.88>
- Hurley, R. R., and Hult, G. T. M. (1998). Innovation, market orientation, and organizational learning: an integration and empirical example. *Journal of Marketing*, 62, 3:42-54. <http://dx.doi.org/10.2307/1251742>
- Iwasaki, H. (undated). *Introduction* <<http://www.jsbri.or.jp/new-hp-e/outline/intro.html>> [1 January 2005]
- Jacobs, J. (1969). *The Economy of Cities*. New York: Random House.
- Keating, C., Robinson, T., and Clemson, B. (1999). *A Method for Organisational Learning*. Norfolk, Virginia: Old Dominion University.
- Kim, D. H. (1993). The link between individual and organisational learning. *Stone Management Review*, Fall
- Kogut, B., and Zander, U. (1992). Knowledge of the firm, combinative capabilities, and the replication of technology. *Organization Science*, 3, 3:383-397. <http://dx.doi.org/10.1287/orsc.3.3.383>
- KPMG (2000). *Knowledge management research report*. KPMG Consulting Reports
- Larson, E. and Drexler, J. A. (1997). Barriers to project partnering: report from the firing line. *Project Management Journal*, 28, 1: 46-52.
- Lehaney, B. (1999) *Simulating modelling in administration-by-consensus organisations*. PhD Thesis, Brunel University, UK
- Liebeskind, J. P. (1996). Knowledge, strategy, and the theory of the firm. *Strategic Management Journal*, 17:93-107
- McPherson, M. (2000). *Structural adjustment and small enterprises: the case of Zimbabwe*.
- Mentzer, J. T., Min, S., and Zacharia, Z. G., (2000). The nature of interfirm partnering in supply chain management. *Journal of Retailing*, 76, 4:549-68. [http://dx.doi.org/10.1016/S0022-4359\(00\)00040-3](http://dx.doi.org/10.1016/S0022-4359(00)00040-3)
- Nickols, F. W. (2000). The knowledge in knowledge management. In: J. W. Cortada and J. A. Woods (Eds). *The knowledge management yearbook 2000-2001*. Boston, MA: Butterworth-Heinemann
- Njuguna, J. I (2009). Strategic positioning for sustainable competitive advantage: an organizational training approach. *KCA Journal of Business Management*, 2, 1:32-43



- Nonaka, I. (1991). The knowledge creating company. *Harvard Business Review*, November-December, 96 -104
- Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization Science*, 5, 1:14-37. <http://dx.doi.org/10.1287/orsc.5.1.14>
- Nonaka, I., Takeuchi, H., and Umemoto, K. (1996). A theory of organizational knowledge creation. *Journal of Technology Management*. 11, Special issue on Unlearning and learning for technological innovation: 833-845.
- Nunamaker, J., Briggs, R. O., and de Vreede, G. J. (2001). From Information Technology to value creation technology. In G. Dickson and G. DeSanctis (Eds). *Information technology and the new enterprise: new models for managers*. Prentice Hall.
- OECD (2000). *Enhancing the competitiveness of SMEs in the global economy: strategies and policies. Proceedings of the conference for ministers responsible for SMEs and industry Ministers*. Bologna, Italy, 14-15 June
- Ortenblad, A. (2004). The learning organization: towards an integrated model. *The Learning Organization*, 11, 2/3:129-144. <http://dx.doi.org/10.1108/09696470410521592>
- OTF Group (2005). *Improving competitiveness and increasing economic growth in Tanzania: the role of information and communication technologies*. Washington, DC: infoDev / World Bank. <http://www.infodev.org/en/Publication.81.html>
- Peteraf, M. (1993). The cornerstones of competitive advantage: a resource-based view. *Strategic Management Journal*, 14: 179-191. <http://dx.doi.org/10.1002/smj.4250140303>
- Pisano, G. P. (1994). Knowledge, integration, and locus of learning: an empirical analysis of process development. *Strategic Management Journal*, 15, Winter: 85-100. <http://dx.doi.org/10.1002/smj.4250150907>
- Polanyi, M. (1967). *The tacit dimension*. New York: Anchor Books
- Porter, M. E. (1985). *Competitive advantage; creating and sustaining superior performance*. New York: The Free Press
- Porter, M. E. (1998). On competition. *Harvard Business Review*, 40-42.
- Powell, W. (1987). Hybrid organizational arrangements: new form or transitional development? *California Management Review*, 30, 1:67-87.
- Prahalad, C. K., and Hamel, G. (1990). The core competence of the corporation. *Harvard Business Review*, 68, 3:79-91.
- Quinn, J.B. (1992). *Intelligent enterprise*. New York: Free Press.
- Richter, F. J., and Vettel, K. (1995). Successful joint ventures in Japan: transferring knowledge through organizational learning. *Long Range Planning*, 28: 37-45. [http://dx.doi.org/10.1016/0024-6301\(95\)00019-F](http://dx.doi.org/10.1016/0024-6301(95)00019-F)
- Saxenian, A. (1990). Regional networks and the resurgence of Silicon Valley. *California Management Review*, 33, 89-111.

- Schrage, M. (1990). *Shared minds: the new technologies of collaboration*. New York: Random House.
- Senge, P. (1990). *The fifth discipline: the art and practice of the learning organization*. New York: Doubleday/Currency.
- Senge P. M., Roberts C., Ross R. B., Smith B. J. and Kleiner, A. (1994). *The fifth discipline fieldbook: strategies and tools for building a learning organisation*. Nicholas Brealey.
- Sessi (2002). Knowledge management in the manufacturing industry: an asset for innovation. *Le 4 Pages des statistiques industrielles*, No. 169 – December. DiGITIP, France
- Shepherd, R. A. (1970). *Economic rent and the industry supply curve*. Southern Economic Association
- Siekman, P. (2002). The snap-together business jet. *Fortune*, 145, 2, 104A-104H
- Simon, H. (1992). Lessons from Germany's midsize giants. *Harvard Business Review*. March-April, 115-123
- Sinkula, J. M. (1994). Market information processing and organizational learning. *Journal of Marketing*, 58, January: 35-45. <http://dx.doi.org/10.2307/1252249>
- Small Business Administration (2002). *Guide to SBA's definitions of small business*. <<http://www.sba.gov/gopher/Financial-Assistance/Defin/defi2.txt>> [22 December 2004]
- Spender, J. C. (1994). Organizational knowledge, collective practice, and Penrosian rents. *International Business Review*, 3, 4:353-367. [http://dx.doi.org/10.1016/0969-5931\(94\)90028-0](http://dx.doi.org/10.1016/0969-5931(94)90028-0)
- Spender, J. C., and Grant, R. (1996). Knowledge and the firm: overview. *Strategic Management Journal*, Special Issue: 5-11.
- Srivastva, S., Bilimoria, D., Cooperrider, D. C., and Fry, R.E. (1995). Management and organisational learning for positive global change. *Management Learning*, 26, 1:37-54. <http://dx.doi.org/10.1177/135050769502600103>
- Svensson, G. (2003). Holistic and cross-disciplinary deficiencies in the theory generation of supply chain management. *Supply Chain Management: An International Journal*, 8, 4: 330-316. <http://dx.doi.org/10.1108/13598540310490062>
- Tan, K. C., Kannan, V. R., Handfield, R. B., and Ghosh, S. (1999). Supply chain management: an empirical study of its impact on performance. *International Journal of Operations & Production Management*, 19, 10:1034-1052. <http://dx.doi.org/10.1108/01443579910287064>
- Taylor, D., Rich, N., and Brun, D. (2001). *Supply Chain Management and the UK metals industry*
- Teece, D. J. (1998). *Strategy, technology, and public policy: The selected papers of David J. Teece*, Volume 2, Northampton, MA: Edward Elgar.

- Teece, D. J. (2000). Strategies for managing knowledge assets: the role of firm structure and industrial context. *Long Range Planning*, 33, February: 35-54.  
[http://dx.doi.org/10.1016/S0024-6301\(99\)00117-X](http://dx.doi.org/10.1016/S0024-6301(99)00117-X)
- Teece, D. J., Pisano, G., and Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18, 7:509-533.  
[http://dx.doi.org/10.1002/\(SICI\)1097-0266\(199708\)18:7<509::AID-SMJ882>3.0.CO;2-Z](http://dx.doi.org/10.1002/(SICI)1097-0266(199708)18:7<509::AID-SMJ882>3.0.CO;2-Z)
- Terra, J. C., and Angeloni, T. (2003). Understanding the difference between Information Management and Knowledge Management. Paper presented at the IAMOT conference, Nancy, France. Available online  
[http://www.providersedge.com/docs/km\\_articles/Understanding\\_the\\_Difference\\_Between\\_IM\\_and\\_KM.pdf](http://www.providersedge.com/docs/km_articles/Understanding_the_Difference_Between_IM_and_KM.pdf). [accessed June 15, 2010]
- UNCTAD (2005). *Improving competitiveness of SMEs through enhancing productive capacity: proceedings of four expert meetings*, UNCTAD/ITE/TEB2005/1. New York and Geneva.
- Von Hippel, E. (1994). Sticky information and the locus of problem solving: implications for innovation. *Management Science*, 40, 429-439.  
<http://dx.doi.org/10.1287/mnsc.40.4.429>
- Wagner, B. A. (2003). Learning and knowledge transfer in partnering: an empirical case study. *Journal of Knowledge Management*, 7, 2:97-113.  
<http://dx.doi.org/10.1108/13673270310477315>
- Walters, D. (2001). *Health and safety in small enterprises: European strategies for managing improvement*. Brussels. P.I.E. - Peter Lang
- Walters, D. (2002). *Working safely in small enterprises in Europe: towards a sustainable system for worker participation and representation*. Brussels: European Trade Union Confederation (ETUC)
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5, 2:171-180. <http://dx.doi.org/10.1002/smj.4250050207>
- Wernerfelt, B. (1995). A resource-based view of the firm: ten years later. *Strategic Management Journal*, 16, 2:171-174. <http://dx.doi.org/10.1002/smj.4250160303>
- Wessels, W. J. (2006). *Economics*. Barron's Educational Series Inc
- Zack, M. (1999). Managing codified knowledge. *Sloan Management Review*, 45-58.