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# Knowledge Acquisition and Sharing: A Sustainable Source of Competitive Advantage in Supply Chains

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**Abstract:** The level of success enjoyed by an organisation is dependent upon the level of competitive advantage it enjoys over its competitors. Competitive advantage is known to be a function of the extent to which an organisation adapts and applies its resources in the exploitation of prevailing market conditions; and this is in turn dependent on the level of knowledge about existing market conditions, modern production techniques and processes. Although it was previously believed that tangible or physical economic assets of an organisation were the major sources of sustainability and profitability, there has, however, been a gradual but steady change in perception of a firm's real source of competitive advantage, sustainability and profitability. The contemporary view is that sustainability, profitability, as well as competitive advantage no longer come from tangible economic assets but rather from sources that ensure adequate utilisation of the knowledge or intellectual capital inherent in an organisation. While it is possible that several organisations may have access to the same or similar knowledge at the same time, the level of utilisation of this knowledge varies from organisation to organisation. It is this variation that holds the key to sustainable competitive advantage. Although more of a theoretical and qualitative work, this paper shall, through a literature review of competitive advantage, knowledge acquisition and sharing, learning, partnerships and networking, supply chain management, as well as citing results from earlier research surveys, as well as PhD research conducted by the author, highlight how organisations in supply chains can improve their competitiveness by leveraging on the intellectual capabilities and resources of their partners. Sustained competitive advantage through improved customer relationship/loyalty, greater awareness of business processes and performance, faster and better management decision making, as well as effective product/service development are some of the motivations for engagement in knowledge acquisition and sharing activities by organisations.

**Keywords:** competitive advantage, competitors, competitiveness, knowledge acquisition, knowledge sharing, supply chain, learning, sustainability, partnerships, networking

## 1. Introduction

There has been a relative increase in the number of organisations and this has increased the level of competition for consumers of these goods and services among organisations. Nonetheless, firms can still out-perform others in terms of sales margins, and retention of more customers. Competitive advantage is ordinarily ensured by factors like cost, quality, novelty, handiness, circulation network, as well as level of customer support. Competitive advantage is simply an advantage enjoyed by an organisation over others, derivable from the ability to offer consumers greater value for money through reduced prices or the provision of services/products that may justify higher prices.

It was previously believed sustainability and profitability were solely dependent on tangible or physical economic assets of an organisation. There has been a change in awareness of the real source(s) of sustainability, profitability, and competitive advantage. Consequently, sustainability and profitability of a firm is dependent on the level of competitive advantage over its competitors; the more sustainable a competitive advantage is, the harder it is to be neutralised. Because sustainability, profitability, and competitive advantage are no longer determined by tangible economic assets, it should, then, emanate from an ability to adequately utilise inherent knowledge or intellectual capital.

Porter (1998) suggests that sustainable competitive advantage can be attained either through cost leadership, differentiation approach, or focus approaches. The contributions of tangible and intangible resources to the competitiveness of organisations have been compared. Arising from these, it has been argued that competitive advantage is more likely to emanate from intangible resources (e.g. knowledge) than from tangible resources because intangible resources ensure that value is added to inward factors of production, (Hitt *et al.*, 2001). A resource is a scarce, non-substitutable, hard to copy, non-tradable, durable, advantageously rent-generating asset which provides superior firm performance (Teece *et al.*, 1997).

While Shepherd (1970) believes that many forms of competitive advantage cannot be sustained indefinitely as they will invariably be duplicated by competitors, D'Aveni (1994) alluded to this in his

hypercompetitive model. Consequently, Wessels (2000) notes that a sustainable competitive advantage is only created when the value-creating processes and position of a firm have neither been replicated nor copied by other. It is doubtful that any process cannot be replicated, or any position not equalled or surpassed. But, through a continuous learning culture or habit, new knowledge and skills on how existing processes and practices can be improved upon are acquired, ensuring the maintenance of a market leader position. This is because inherent knowledge is often harnessed and transformed into processes and activities that become norms, often peculiar to an organisation, and representing the source of its core competencies and capabilities. The process through which knowledge is acquired and transferred varies from organisation to organisation (Autio *et al.*, 2000). It is this variation that makes knowledge a valuable, unique, and non-substitutable resource (Barney, 1991), capable of ensuring a sustainable competitive advantage (Prahalad and Hamel, 1990). However, knowledge is not self-creating. It must be acquired through a learning process.

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, such that large firms have more resources to spend on Research and Development (R&D) than small firms. Again, there are pointers that the ability to apply knowledge is also affected by the size of a firm, perhaps because large firms are more likely to engage in expenditures that are associated with strategic and operational changes, and can also boast of having the calibre of human resources to understand, implement, and manage such changes (Finch, 1986; Gargeya and Thompson, 1994).

## **2. Knowledge and learning: Two sides of the same coin**

It is observed that knowledge is enhanced by learning (Terra and Angeloni, 2003), and learning is the process of developing and enhancing routines over time (Harberberg and Rieple, 2001). Learning increases the ability and enthusiasm of individuals and groups to gain and creatively apply new knowledge and skills towards successful adaptation to changes and challenges as well as growth. Learning is a lasting practice that enhances the ability to be smart, increase problem solving abilities, and the capacity to anticipate and adapt to changes. While learning enhances the capacity to take action (Kim, (1993), the ability of organisations to change and expand their boundaries are dependent on the generation and effective utilisation of knowledge (Barney, 1999). Furthermore, 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 (Keating *et al.*, 1999). Again, learning enhances the ability to survive 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 *et al.*, 1995).

Studies aimed at identifying sources of a firm's competitive advantage have been carried out on those unique and value-adding characteristics that are capable of being transferred between firms (Coplin, 2002; Peteraf, 1993; Porter, 1985). This led to the development of resource-based and knowledge-based theories that examine the association among core resources, capabilities, sustainable competitive advantage, and above average performance (Njuguna, 2009). It is generally accepted that learning plays a central role in the success or otherwise of organisations. Subsequently, according to Jorma Ollila (see Harung and Gustavsson, 1994), the only source of sustainable competitive advantage available to an organisation is the rate at which it learns, and this has pushed many organisations into adopting continuous learning (Goh, 2003) as survival strategies.

Knowledge is simply a fluid mix of framed experience, values, contextual information, and expert insight that provides a structure for evaluating and incorporating new experiences and information, and often becomes embedded in documents, repositories, organisational routines, processes, practices, and norms with the mind of the knower serving as the origin and centre of application (Davenport and Prusak, 1998). Knowledge dwells in the mind of an individual and describes the combined effect of human experience and reflection based on a set of individual and collective beliefs (Terra and Angeloni, 2003).

Polanyi (1967) distinguishes between tacit and explicit knowledge. A knowledge that cannot be adequately expressed or articulated is known as tacit knowledge (Nickols, 2000) as it is based on individual experiences, and involves personal beliefs, perspectives and values (Polanyi, 1967). Implicit Knowledge is knowledge that can be articulated but is yet to be and can only be inferred from observable behaviour or performance (Nickols, 2000). Knowledge becomes explicit if it has been

articulated and stored in a form that can be transmitted. 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.

Irrespective of the differing views on tacit and explicit forms of knowledge, competitive advantage is determined more by tacit knowledge than by explicit knowledge (Grover and Davenport, 2001), probably because the uniqueness in how things are done that makes it difficult to copy is ensured by the knowledge that is resident in individuals that ensures the. Despite the differing views, Alavi and Leidner (2001) note that tacit and explicit forms of knowledge are not two dichotomous states of knowledge, but are reciprocally dependent and reinforcing qualities of knowledge. This reinforces an earlier view that the structure necessary to develop and interpret explicit knowledge is built around tacit knowledge (Polanyi, 1967). The author believes that explicit knowledge contributes more to performance improvement in organisations than tacit knowledge because knowledge can only bring about improvement in performance if it has been captured, organised, disseminated, and used appropriately (Wagner, 2003).

Consequently, learning and knowledge are major means of responding to the uncertainties of the business environment (Antonacopoulou, 1999) and the attainment and sustenance of a competitive edge over competitors are affected by the possession and effective utilisation of requisite knowledge. The impact of learning and knowledge on survival of organisations is more pronounced in innovation drive sectors (Terra and Angeloni, 2003). This corroborates the result of the Third Community Innovation survey which shows that 23% (comprising 35% innovating companies and 13% non-innovating companies) of industrial companies forged partnerships or alliances for knowledge acquisition (Sessi, 2002).

### **3. The connection between knowledge and competitive advantage**

The attainment of sustainable competitive advantage by an organisation depends on the recognition of knowledge as a strategic resource to be created and harnessed effectively. Furthermore, the acquisition and preservation of superior performance which ensures competitive advantage depends on the level of available resources and capabilities (Aaker, 1989). This situation depends on inherent knowledge because knowledge resources and capabilities, broadens an understanding of the peculiarities of any business environment, and improves the ability of individuals and organisations to respond to different circumstances (Sinkula, 1994), and sustain its competitive position over their competitors (Spender and Grant, 1996). The ability to continuously acquire, assimilate, disseminate, share and use knowledge is determinant to success as it leads to innovation of products, better product development procedures, improved quality, flexibility in a dynamic market and improved customer service (Huber, 1991; Senge *et al.*, 1994). The ability to convert intellectual resources into a chain of services in a form useful for customers differentiates successful enterprises (Quinn, 1992), and for optimum performance and growth, there is need for organisations to integrate and share knowledge (Zack, 1999). Survey result shows that firms believe that there are substantial rewards from sharing knowledge (Economist Intelligence Unit, 2005). This implies that the establishment of customer loyalty, improved turn-over, increased profit, as well as competitive advantage requires an ability to recognise changes, identify customer behaviour patterns, and adopt appropriate measures to address these. Although, the ability to understand customers' needs, and predict changes in their behaviour could create a decisive advantage over competitors, this is an area where firms' knowledge-management capabilities are often weakest (Economist Intelligence Unit, 2005).

Possession of assets does not create sustainable competitive advantage; this comes from the ability to control assets and use these to formulate and apply value-enhancing strategies (Barney, 1991; Wernerfelt, 1984). A firm's ability to create and apply knowledge are key to creating and sustaining its competitive advantage (Grant, 1996a; Nonaka, 1994; Teece, 1998, 2000; Teece *et al.*, 1997; Wernerfelt, 1984, 1995). Liebeskind (1996) attributes this to the fact that competition has become more knowledge-based, causing a shift in focus from physical or labour resources to knowledge resources as the real sources of sustainable competitive advantage. Again, the effective application of knowledge leads to a sustainable competitive advantage (Grant, 1995, 1996b), and determinants to successful implementation of business strategies by organisations are the acquisition and development of knowledge (Doz, 1996). In view of this, in the contemporary global economy, knowledge has become a pre-requisite to achieving a sustainable competitive advantage (Chakravarthy *et al.*, 2003) and the proper management of intellectual capital plays a fundamental role in improving the competitive advantage of leading organisations (KPMG, 2000).

Knowledge, however, must flow into actions for it to be useful and profitable (Demarest, 1997). 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 acquired knowledge that make profits (Spender, 1994). This implies that learning new skills alone cannot create needed competitive edge over competitors; this comes through the translation of acquired skills/knowledge into new technologies, goods/services, and 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 *et al.*, 2003).

There is a belief that the discrepancy in the level of inherent knowledge accounts for performance differences among firms. Kogut and Zander (1992) note that the heterogeneous and inimitable nature of knowledge resources makes knowledge the primary source of value as well as a determinant of performance differences across firms. Thus, only firms that can create new knowledge at a lower cost and a faster rate, and apply this knowledge more effectively and efficiently than their competitors, become successful at creating competitive advantages. So long as knowledge continues to remain the most important resource that a firm can possess, the continual creation of new knowledge remains critical to a firm's sustainability (Liebeskind, 1996; Nonaka, 1991). Although Bierly (1999) argues that for a knowledge competence to remain unique to a firm, it must not be obtained from a source which is also available to competitors, but should be internally developed, it is 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 (Spender, 1994; Teece, 2000).

While the observation by Droge *et al.* (2003) that empirical research does not always support the claimed positive effect of knowledge on performance could the desire to learn and acquire of knowledge (Gold *et al.*, 2001), it should be noted that the acquisition of new knowledge has an anecdotal positive effect on performance. This discrepancy between empirical and anecdotal evidence is attributable to the fact that what was empirically measured was applied knowledge, whereas it is applied knowledge (not knowledge creation) that is related to performance (Droge *et al.*, 2003). Nonetheless, knowledge creation and firm effectiveness are hypothesized to relate positively (Droge *et al.*, 2003). This contribution of knowledge to improved performance comes from an increased speed of product/service delivery at lower costs and higher profit margins (Nonaka, 1994).

#### **4. Networking and partnering for improved competitiveness**

One way of developing and sustaining knowledge is through research and development (R&D) programmes (Hitt *et al.*, 2000). However, Diugwu (2008) shows that lack of resources deter firms from embarking on improvement initiatives, including R&D. Under this circumstance, creating/enhancing knowledge can be through training offered by training providers or business associates. Mentzer *et al.*, (2000:550) describe partnership as "inter organizational entity developed between two independent organizations in a vertical relationship within a supply chain". Learning in partnership arrangements could involve learning about one's partner, where most of the information is tacit; learning about tasks, predicated upon established objectives and goals expected of the partners; and learning about the outcome of such relationships (Doz, 1996). 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). Partnerships and networks facilitate the pooling together and interaction of complementary skills to produce a shared understanding that was neither previously possessed individually nor could have been acquired single-handedly (Schrage, 1990). Partnering and networks add value to an organisation's activities and also help in the improvement of its competitiveness through an effective sharing of information, skills and resources (Department of Trade and Industry, 2004). By offering through better access to complementary skills and knowledge (Clark *et al.*, 1991; Powell, 1987), partnering and networks offer direct benefits to organisations and remain the most significant channels of improving performance of organisations (Larson and Drexler, 1997). Also Chen *et al.*, (2006) note that social and electronic networks were important channels through which firm acquire knowledge.

Knowledge has a positive impact on the creation and sustenance of competitive advantage and profitability of organisations (Grant, 1991). Consequently, as important as learning/acquiring new knowledge is the establishment of structures capable of sustaining this new knowledge over time (Black and Boal, 1994). Again, enhancing competitive advantage through partnerships needs concerted efforts because facilitating/coordinating learning in organisational networks made up of discrete and independent entities having different cultures is not always easy because of difficulties in

establishing setting up systems that promote the development and implementation of knowledge sharing (Lehaney, 1999). Learning is facilitated by shared norms and values (Wagner, 2003); hence the importance of establishing partnerships or joining networks sharing similar norms and values.

Reasons why organisations establish co-operative arrangements with other organisations include the creation of internal knowledge (Richter and Vettel, 1995). Siekman (2002) highlights where improvement between programme launch and first delivery time was achieved owing to improvements in organisational capabilities brought about by collaborations. Furthermore, Gold *et al.* (2001) show a positive relationship between knowledge application and firm effectiveness, while Tan *et al.*, (1999) observe a positive relationship between growth and financial performance of organisations and their ability to integrate and apply knowledge from major supply chain members.

## **5. 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). Thus, the creation of an environment that facilitates learning and adaptation of skills and knowledge than competitors' becomes a great source of sustainable competitive advantage. This is because learning and knowledge improves the ability to respond to uncertainties of the business environment.

Organisations ought 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 leads to ingrained skills that are difficult to copy. 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 engender improved competitiveness through effective sharing of information, skills and resources.

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