Supply Chain Knowledge Creation Contribution to the Performance of State Corporation in Kenya

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Abstract:
Purpose – The purpose of this paper is to determine supply chain knowledge creation contribution to the performance of State Corporations in Kenya. Knowledge is considered as the ability to undertake effective action when required. An organization that encourages information sharing and creation of new knowledge among its members is likely to establish effective and efficient processes as well as improve its organizational life. New knowledge creation and transfer plays a major role in the performance of state corporations. It is this created knowledge when transferred from one individual to another that helps in the effective execution of complex tasks and duties in any organization.
Design/methodology/approach – A cross-sectional survey and descriptive research design was used in this study. Cross-sectional survey is a method that involves the analysis of data collected from a population, or a representative subset, at one specific point in time.
Findings – An effective company is a knowledge-creating company, and one which is able reliably to create new knowledge and distribute it throughout the company. The study therefore concludes that the creation and transfer of new knowledge in an organization is a critical factor in an organization's success, competitiveness and its overall performance. The study findings also revealed that the transfer of supply chain created knowledge improves the performance of state corporations as an increase in generation of new ideas, and proper defined methodology in operations increases performance.
Keywords Transfer, Creation Knowledge, Skills, Learning, Performance.

Paper type: Research paper

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I. Introduction

The learning effect can be represented by a line called a learning curve, which display the relationship between the total direct labor per unit and the cumulative quantity of a product or service produced (Armstrong & Fukami, 2008). The learning curve relates to a repetitive job or task and represents the relationship between experience and productivity: The time required to produce a unit decreases as the operator or firm produces more units. A learning curve is a graph of an individual’s competence over time, showing the relationship between time spent in learning and the level of competence attained.

Laurie (2012) says that both change and learning are natural processes that continue throughout life. Individual learning is a lifelong process that is essential if people are able to cope with the changing nature of work organizations. It is common for people to say that they are ‘on a steep learning curve’ when they have to acquire a lot of new knowledge in a short period of time. The standard learning curve is initially steep, leveling out towards proficiency. But in practice, the curve typically shows a variable pace of learning.

The curve for acquisition of manual skills, for example, typically shows a slow start, because the trainee has a lot to take in, then gains momentum. There may be one or more plateaus where output levels off for a while, reflecting the trainee’s need to consolidate what he has already learned (Laurie, 2012). Momentum then typically gathers again, until the trainee reaches proficiency level, where the curve will level off, unless there is an injection of new equipment or methods, or flesh motivation, to lift output again.

Learning results when information is stored in memory in an organized, meaningful manner (Peggy & Timothy, 2013). Learning curves can go down as well as up, for example, if the learner is unable to apply newly acquired skills and forgets them, or suffers disorientation as a result of major job change. An up-and-down transition curve is common in cases where an individual changes job roles or work methods. Organizational learning involves gaining experience with products and processes, achieving greater efficiency through
automation and other capital investments, and making other improvements in administrative methods or personnel.

Productivity improvements may be gained from better work methods, tools, product design, or supervision, as well as from individual worker learning. These improvements mean that existing standards must be continually evaluated and new ones set. Learning curve theory is used in explaining how supply chain knowledge acquisition as a process takes place and the contribution of the acquired skills toward innovation and innovative thinking of the players and the general performance of the firm and the extended supply chain.

Theoretical Background

Knowledge management as a sustainable competitive tool consists of the creation, acquisition, gathering, transforming, transfer and application of knowledge to achieve organizational objectives. Bernard et al (2004) indicates that knowledge is recognized as a durable and more sustainable strategic resource to acquire and maintain. Knowledge is a resource that forms the foundation of the company’s capabilities. Capabilities combine to become competencies and these becomes core competencies when they represent a domain in which the organization excels.

The importance of knowledge and its contribution to sustainable competitive advantage for any nation or organization was illustrated in Lisbon, when European Union leaders declared that by 2010 the EU would be the most competitive and dynamic knowledge-based economy in the world, capable of sustaining economic growth with more and greater jobs and greater social cohesion (Maria, 2010).

According to Armstrong & Fukami (2005) a holistic approach to knowledge management involves: acquiring knowledge; generating or creating new knowledge; transforming information into new knowledge; capturing unspoken, internal or tacit knowledge; storing knowledge; sharing or disseminating knowledge throughout the organization; protecting distinctive value adding knowledge; and developing knowledge to develop core capabilities. Knowledge can be acquired from environmental scanning, market research, purchasing research, benchmarking exercises, modeling and networking with like-minded individuals and organizations.

New information can be transformed into new knowledge by compiling, combining, analyzing, interpreting or reformatting the already existing pool of knowledge present in the organization. According to Bernard et al (2004) knowledge assets interact with each other to create capabilities and competencies, and it is often this interaction which delivers a competitive advantage because it makes these assets difficult for competitors to imitate or replicate. Non-imitable competencies are critical for any organization that want to stay at the top, for it shields the organization from ordinary competition.

All organizations are member of a supply chain. The supply chain encompasses all the organization on both the upstream and downstream of the supply spectrum. Ismail et al (2006) defines a supply chain as a network of organizations that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services in the hands of the ultimate customer. The supply chain is endowed with great specialized knowledge that can be of great use to all the members of the supply network. But to leverage this supply chain knowledge, the supply chain members must transfer this knowledge on either side of the chain.

Global Perspective of Supply Chain Knowledge Transfer

Creating and replicating knowledge is important for all organizations. These abilities are especially critical for firms that compete in dynamic environments. Such firms require flexibility to coordinate internal resources and adaptive capacity for managing environmental challenges; innovation becomes an important determinant of survival (Laura et al, 2009). Knowledge sharing in a supply chain is beneficial for removing knowledge barriers, strengthening supply chain synchronization and thereby enhancing knowledge level, knowledge capability, knowledge innovation and the overall competitive advantage of a particular supply chain (Peyman et al 2014).

In their study entitled, “Knowledge transfer between globally dispersed units at BMW,” Stephanie & Andreas, (2009), discovered that the search for and transfer of knowledge depends foremost on the applicability of context-specific knowledge rather than its complexity. They majored their research on two opposing views namely, the social network view and the product innovation perspective on knowledge transfer. They further argued that close inter-unit integration and frequent and direct interaction between subunits are directly linked to increased innovation.

Argote & Ingram, (2000), states that knowledge transfer between units has been understood as the process through which one unit (e.g. group, department, or division) is affected by the experience of another. This has the implication of using one specific type of knowledge for different aspects of work. Stephen & Andreas (2009), continue to state that knowledge transfer is often referred to as the most important, yet most challenging knowledge activity due to the high complexity it possesses. It is much complex when it comes to
sharing or transferring knowledge from one organization to another. They explain that this complexity stems from the fact that knowledge is not only created by and rests within individuals, but is also embedded in particular ways of thinking and acting.

In their finding Stephen and Andreas found that there are five specific elements that are most influential to effective intra-organizational knowledge transfers between individual members of the business units. These specific elements are: strength of network ties; formality of network ties; absorptive capacity; learning adaptiveness; and communication channels. In conclusion, Stephen & Andreas (2009) stated that knowledge transfer effectiveness requires different strengths and formalities of social network ties in an intra-unit setting. Effective knowledge transfer between units in Multi-National Corporations (MNCs) depends foremost on the context specificity of knowledge. The influence knowledge transfer drivers such as the strength and formality of network ties, absorptive capacity, learning adaptiveness, and communication channels have on the knowledge transfer process stem directly from the applicability of valuable knowledge created within each unit.

Globally, a lot of research has been carried out on the field of knowledge management and knowledge transfer. Most of these researches have been conducted in relation to human resource management and in technology transfer between different countries. However, there is little literature or empirical studies on supply chain knowledge transfer and its contribution to the performance of organizations.

State of Knowledge Transfer in Kenya

Godfrey, Stephen, & James (2015) rightly argue that the resource-based view (RBV) considers firm-specific factors as a source of competitive advantage for organizations. This is important because it implies that competitive organization must rely on what they already have to exploit the opportunities accorded to them by the environment. They further indicate that the RBV assumes intangible assets such as knowledge, innovation, and intellectual properties as value drivers and sources of company’s competitive advantage. Knowledge transfer and exploitation is a new concept in the Kenyan environment.

However, as highlighted by Godfrey, Stephen, & James, some commercial banks in Kenya have been exploiting knowledge as a valuable resource in their competitive strategy. In their study investigating the influence of knowledge transfer and knowledge conversion on performance of Commercial Banks in Kenya, they found out that knowledge transfer has a positive influence on performance of organizations. They further recommended that the management of Commercial Banks should ensure that information is more available and accessible, and that it flow should be enhanced in order to facilitate transmission of tacit knowledge. Tacit knowledge which resides in people can only be valuable to organizations through knowledge transfer (Darwin, 2003). There is limited literature available on knowledge transfer in Kenya and especially in supply chain domain and its contribution to the performance of these organizations.

Supply Chain Knowledge Creation

New knowledge can be created through idea generation processes like brainstorming and think-tanks, research and development, stakeholder consultation and earlier supplier involvement (Stave & Hopper, 2007). The creation and transfer of knowledge in an organization has become a critical factor in an organization's success and competitiveness (Pirnay-Dummer et al, 2010). Many organizations are now concentrating their efforts on how knowledge, particularly tacit knowledge that exists in the organization, can be transferred across the organization (Syed et al, 2004). A successful company is a knowledge-creating company, one which is able consistently to produce new knowledge, disseminate it throughout the company and embody it into new products or services quickly (Tan, 2000).

Nonaka and Takeuchi (1995) affirms that knowledge creation takes place at three levels: the individual, the group, and the organizational levels within the company. The difference in how a company is viewed affects the knowledge creation process. To create knowledge, a number of different conversions or syntheses need to take place. These include a conversion or synthesis across: tacit knowledge and explicit knowledge; levels (individual, group, and organizational) within the company; functions, departments, and divisions within the company; layers (top-management, middle manager, and front-line worker) within the company; knowledge inside the company and knowledge outside the company created by suppliers, customers, dealers, local communities, competitors, universities, government and other stakeholders (Ahmadjian, 2004). These synthesizing capabilities make or break the knowledge creation process.

Syed et al (2004) advises that organizations should identify where tacit and explicit knowledge resides when designing strategies, to ensure that knowledge is created and transferred to the right individuals. However, knowledge, particularly tacit knowledge, is very difficult to transfer. Knowledge creation will mostly depend on those who holds the knowledge and their willingness to share it with others within their organization in particular and the supply chain in general. It is difficult to transfer tacit knowledge because most of tacit knowledge is acquired thorough learning by doing and this makes it idiosyncratic to the particular constellation.
of people, technology, structures and environmental conditions within which it was acquired.

**Experiential Learning Theory**

Experiential learning is learning by experience or learning by doing (Kolb, 2005) Effective knowledge transfer could start, not just from abstract concepts or theories, but from concrete experience. Kolb formulated the ‘experiential learning cycle’ to demonstrate how everyday work experiences can be used for learning, transfer of knowledge, personal development and performance improvement, through the process of ‘learning by doing’. The experiential learning cycle has four stages namely: act; analyze; abstract; and adjust. These four stages help the learner to undertake the task at hand through a process of continuous repetition and progress to the specific requirements of the task (Armstrong & Fukami, 2008). To start with, the learner may have concrete experience of the technique or concept to be learned.

A good example of the four stages of the experiential cycle would be a trainee supply chain manager being given an opportunity to chair a meeting with suppliers (Armstrong & Fukami, 2008). After chairing the meeting, the trainee supply chain manager thinks back over the experience he had and notices that the meeting split into side issues on several occasions. After pondering what would have allowed this to happen. Using theory and experience, he develops some abstract concepts and sets up a hypothesis for future action. He realizes that the facilitator should be responsible for controlling the meeting and that this can only be achieved only by being the focus of all communications. He then applies and tests this hypothesis in new situation by planning to facilitate the next meeting, by requesting that all communications to be routed via him as the chair. The trainee is thereby supplied with a new or adjusted concrete experience or knowledge from which to begin the cycle all over again.

Trial and error is an important knowledge transfer process. It basically involves doing something and if you do not get the desired results, doing it again differently. This is the foundation of experiential learning, where every work situation particularly mistakes and problems can become a learning opportunity (Kolb, 2005). A safe environment is required in order to allow practice and to genuinely encourage error-making as part of supply chain knowledge transfer. A negative consequence for errors demotivates learning and creates a downside risk for the supply chain, where knowledge transfer involves real-life tasks or resources.

Experiential learning allows any experience or situation to become an opportunity for learning and development, enabling the learner to manage his own learning. It also provides a systematic and effective approach to learning to learn and emphasizes the nature of learning as a continuous process (Laurie, 2012). Experiential learning builds in knowledge transfer or application of learning from the original learning context to other contexts reinforcing and embedding learning on the job through experimentation, practice, theorizing, watching and reflecting. Experiential learning theory can be used to explain the process of new supply chain knowledge creation and how this important process affects the performance and the competitiveness of any organization.

**Resource-Based Theory**

Spender (2003) states that a knowledge management approach to the firm, focuses on the processes by which its knowledge is generated, moved, stored, and applied to create a competitive advantage. This theory treats knowledge as an organizational asset, seldom represented on the balance sheet, but as needing to be managed as any other organizational asset. Spender continues to state that it costs money to produce or acquire knowledge, thereby making knowledge a strategic factor of production. Teece (2000) assert that knowledge has now become the most strategic factor of production in any given firm. Knowledge must be shared and applied to the generation of goods and services for it to be a tool of competitive advantage.

The Resource Based View (RBV) of the firm establishes the possibility for researchers to link the resources of the firm (including knowledge) to its sustained competitive advantage. This theory identifies the existence of rivalry between firms that present differences in efficiency due to resources heterogeneity. Industry equilibrium is based on the productivity differentials between firms. The RBV of the firm considers that the differences in efficiency between firms within the same industry persist due to the difficulty in imitating the resources each firm possesses (Seth & Thomas, 1994). This means that systematic variations in profit and performance have their origins in particular firm factors (Amit & Schoemaker, 1993).

Much of the knowledge necessary for the firm’s functioning comes not from outside, prior to the firm’s existence, but from the creativity of the workers within the firm. This is the stock of knowledge created and accumulated as workers undertake their works and responsibilities. The knowledge based view helps us to see the supply chain not only as a spender of knowledge but as a creator of knowledge also. The firm’s knowledge is harvested by rigorous observation and evaluated by trained staff, and articulated into the tools and procedures to be followed by those to who is transferred (Spender, 2003).

Organizational knowledge is a strategic resource in the supply chain (Hult et al, 2003). To be strategic, a resource must meet three criteria. First, the resource must be valuable, meaning it helps create outputs that are
important to customers. Knowledge appears to surmount this hurdle, particularly in the supply management context (Das & Teng, 2000). Implementing a fast cycle time climate requires adopting a paradigm focused on learning, where flexibility, responsiveness, creativity, and timeliness are stressed. From this perspective, knowledge is a valuable resource to supply chain in that it subtly but persistently steers innovation and behavior toward effectively satisfying the needs of customers. A strategic resource must also be rare, meaning that the resource is found infrequently and that close substitutes are not available. Supply chain knowledge is a complex concept, encompassing both a process and a structure (Hult et al., 2003).

The process of learning refers to the development of new knowledge that has the potential to change behavior and altitude. Thus, supply management organizations stressing learning must learn and then behave accordingly to be effective (Hult et al., 2003). Resource based theory knits together the entire process of supply chain knowledge transfer by highlighting how the different aspects of knowledge transfer works together to produce a competitive advantage for any firm. When supply chain knowledge acquisition, knowledge creation, innovative thinking, skill development and core competencies development are combined and made to work together in harmony, they become a dynamic resource that directly contribute to the performance of any organization.

II. Research Model and Methodology

A research philosophy is a belief about the way in which data about a phenomenon should be gathered, analyzed and used in interpretation. The term epistemology (what is known to be true) as opposed to doxology (what is believed to be true) encompasses the various philosophies of research approach. The purpose of science, then, is the process of transforming things believed into things known.

Positivists believe that reality is stable and can be observed and described from an objective viewpoint, that is, without interfering with the phenomena being studied (Saunders, 2003). They contend that phenomena should be isolated and that observations should be repeatable. This often involves manipulation of reality with variations in only a single independent variable so as to identify regularities in, and to form relationships between, some of the constituent elements of the social world. Predictions can be made on the basis of the previously observed and explained realities and their inter-relationships. It is so embedded in our society that knowledge claims not grounded in positivistic thought are simply dismissed as unscientific and therefore invalid.

The over-riding concern is that the research undertaken should be both relevant to the research hypotheses (Ridenour Jr & Newman, 2008), and rigorous in its operationalization. Overall positivist philosophy is required for this purpose, i.e. the understanding of how supply chain knowledge transfer takes place, specifically how this affects the performance of state corporations in Kenya. Recognizing the lack of objectivity sometimes associated with interpretivist research methods, this research adopted a positivist, quantitative approach to the development of the research instrument.

Research Design

Research design refers to how data collection and analysis are structured in order to meet the research objectives through empirical evidence economically (Chandran, 2004). A research design is a set of logical procedures that enables one to obtain evidence to determine the degree to which a theoretical hypothesis is correct. Research design constitutes the blueprint for the collection, measurement and analysis of data (Kothari, 2005). Across-sectional survey and descriptive research design was used in this study. Cross-sectional survey is a method that involves the analysis of data collected from a population, or a representative subset, at a specific point in time (Orodho, 2003). The choice of this design was appropriate for this study since it utilizes a questionnaire as a tool of data collection and helps to establish the role of supply chain knowledge transfer in the performance of state corporations.

Target Population

The study population of this study comprised of one hundred and nineteen (119) State Corporations in Kenya as listed in Office of the President website (Public, 2016). The sample frame for this study comprised of supply chain managers from the four core supply chain division that include: transportation & logistic, tender, contract and Inventory Managers from 119 state corporations in Kenya. Supply chain knowledge transfer is relevant to the entire supply chain function hence the choice of these four core supply chain division. The sample size of this study was 55 respondents from each of the four core supply chain division in the 119 state corporations in Kenya, bringing the total number of respondents 220.
**Data Analysis**

A descriptive analysis of the construct supply chain knowledge creation was performed and presented in the table below.

<table>
<thead>
<tr>
<th>Statement</th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Knowledge transfer is crucial for better performance of state corporations</td>
<td>1</td>
<td>7</td>
<td>19</td>
<td>82</td>
<td>67</td>
</tr>
<tr>
<td>Buyers should collaborate with suppliers to create new knowledge</td>
<td>0</td>
<td>13</td>
<td>19</td>
<td>72</td>
<td>72</td>
</tr>
<tr>
<td>New knowledge creation contributes to sustainability</td>
<td>1</td>
<td>2</td>
<td>14</td>
<td>89</td>
<td>70</td>
</tr>
<tr>
<td>New knowledge creation is key to effectiveness (i.e. responsiveness)</td>
<td>0</td>
<td>6</td>
<td>17</td>
<td>110</td>
<td>43</td>
</tr>
<tr>
<td>New knowledge creation improves efficiency (i.e. cost reduction)</td>
<td>0</td>
<td>3</td>
<td>19</td>
<td>72</td>
<td>82</td>
</tr>
<tr>
<td>New knowledge creation enhances quality of products &amp; services</td>
<td>0</td>
<td>6</td>
<td>9</td>
<td>56</td>
<td>104</td>
</tr>
<tr>
<td>New knowledge creation is key to effectiveness (i.e. responsiveness)</td>
<td>1</td>
<td>6</td>
<td>9</td>
<td>56</td>
<td>104</td>
</tr>
</tbody>
</table>

Key: SD=Strongly Disagree; D=Disagree; N=Neutral; A=Agree; SA=Strongly Agree; and %=Percentages.

As regards supply chain knowledge creation, it was observed that 84.7% of respondents affirmed that new knowledge transfer is crucial for better performance of state corporations. This position was supported by respondents who affirmed that; new knowledge creation contributes to sustainability (90.4%), new knowledge creation is key to effectiveness (i.e. responsiveness) (86.9%), new knowledge creation improves efficiency (i.e. cost reduction) (87.5%), new knowledge creation enhances quality of products & services (90.1%) and finally that buyers should collaborate with suppliers to create new knowledge (81.8%). It can be argued that an effective company is a knowledge-creating company, and one which is able reliably to create new knowledge and distribute it throughout the company. This finding confirms Pirnay-Dummer et al. (2010) who avers that the creation and transfer of knowledge in an organization has become a critical factor in an organization's success and competitiveness.

**III. Conclusion**

The study sought to evaluate how supply chain new knowledge creation affects the performance of state corporations. Knowledge creation is evidenced by generation of new ideas, defining methodology while undertaking tasks and the development of new knowledge that was not domiciled within the organization. Almost all the respondents affirmed that new knowledge transfer is crucial for better performance of state corporations. Majority of the respondent agreed and strongly agreed that; new knowledge creation contributes to the sustainability of state corporations and that this new knowledge as created was crucial to the effectiveness of these organizations.

Similarly, majority of the respondent affirmed that new knowledge creation improves efficiency thereby leading to cost reduction in the production processes. These respondents also strongly agreed that, the creation of new knowledge within these corporations enhances quality of products & services as there were few errors and down time in all the processes as people embraced best practices in tasks performance while collaborating with suppliers to create more knowledge. An effective company is a knowledge-creating company, and one which is able reliably to create new knowledge and distribute it throughout the company. The study therefore concludes that the creation and transfer of new knowledge in an organization is a critical factor in an organization's success, competitiveness and its overall performance.

The study findings also revealed that the transfer of supply chain created knowledge improves the performance of state corporations as an increase in generation of new ideas, and proper defined methodology in operations increases performance. This therefore means that the transfer created knowledge is crucial for better performance of state corporations. New knowledge creation makes organizations to be relevant in a changing environment.

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**Table 1.0: Sample Frame 1**

<table>
<thead>
<tr>
<th>Population</th>
<th>Target Population</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportation &amp; Logistic Managers</td>
<td>119</td>
<td>55</td>
</tr>
<tr>
<td>Tender Managers</td>
<td>119</td>
<td>55</td>
</tr>
<tr>
<td>Contract Managers</td>
<td>119</td>
<td>55</td>
</tr>
<tr>
<td>Inventory Managers</td>
<td>119</td>
<td>55</td>
</tr>
<tr>
<td>Total</td>
<td>476</td>
<td>220</td>
</tr>
</tbody>
</table>
world thereby ensuring their sustainability. New supply chain knowledge transfer helps organization to be both effective and efficient and aids in reduction of production costs as organizations adopts best practices.

New knowledge can be created through idea generation processes like earlier supplier involvement. A successful company is a knowledge-creating company, one which is able to consistently produce new knowledge, disseminate it throughout the company and embody it into new products or services quickly. This study recommends state corporations to put mechanisms in place that will make it possible for new knowledge to be created within their boundaries.

References