Barriers to Effective Implementation of Vendor Managed Inventory among Supermarkets in Kenya

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Abstract: ***Vendor managed inventory (VMI), also known as continuous replenishment or supplier-managed inventory, is one of the most widely discussed partnering initiatives for encouraging collaboration and information sharing among trading partners (Angulo, 2007).This study seeks to investigate the barriers to effective implementation of vendor managed inventory among retail supermarket in Kenya. The research project specifically sought to establish whether ICT infrastructure and transport network, supplier/buyer relationships, inventory availability and existing procurement procedures affects the effectiveness of VMI implementation. The study adopted a descriptive research design with survey of a total of 15 outlets and applied a random sampling technique to select a sample size of 75 respondents. Questionnaires and interviews were used as the main data collection methods. The barriers of VMI implementation are well known and high percent of the respondents were aware of their existence. 92% was an overwhelming numbers of the majority hence no doubt of some existing barriers to effective implementation of the VMI model. Further the research sought to identify the major causes to these barriers through interviewing the senior management. The major causes as indicated by the respondents were:- procurement procedures, buyer/supplier relationship and information technology among others. The study concluded that that economic order quantity and procurement costs are affected by VIM thereby affecting organizational performance. The study recommends that VIM should be well implemented since it influences the organization performance. Additionally, the study recommends that organization should integrate all its inventory management functions with information communication technology as well as ICT realization. Organizations need to enhance Communication among staff members and customers.***

Keywords: Vendor Managed Inventory, Supermarkets, Barriers, Procurement, Buyer- Seller relationship

1. Introduction

Vendor-managed inventory (VMI) is a business model in which the buyer of a product provides certain information to a vendor or the supplier of that product and the supplier takes full responsibility for maintaining an agreed inventory levels of the material, usually at the buyers preferred location or store(Daughterly, 1999). This model involves making sure that the buyer has the required level of inventory by adjusting the demand and supply in the supply chain. VMI is one of the successful business models and strategy used by Wal-Mart and many other global retailers and supermarkets. Oil companies as well often borrow the VMI technology to manage the gasoline inventories at their service stations. VMI helps foster a closer understanding between the supplier and manufacturer by using EDI (electronic data interchanges) software and statistical methodologies to forecast the supply and demand trends in the market (Blatherwick, 1998).

The growth of supermarkets in Kenya has been attributed to such factors as increased urbanization; a growing middle class and its changing lifestyles; and market liberalization that has led to increased competition in the sector.The supermarket is not a new concept in Kenya, having had the first store of its kind in the 1960s (Neven et al, 2005).

Some of the old players in the retail industry are Uchumi Supermarkets, founded in the mid '70s and Nakumatt Supermarkets, founded in 1987. However much growth was not seen within the retail chains until the mid '90s when supermarkets grew from 5 to the current over 300 stores in Kenya (Kamau et al, 2006). These range from well-established retail chains to independent one store supermarkets.

The dominant players in the sector include Nakumatt, which is privately owned with a turnover of over 20 billion Kenya shillings per annum. It is the leading player in the sector with over 38 branches in the region. Nakumatt has been noted as a ground breaker in East and Central Africa as it is the first retailer to have its stores open round the clock. Tuskys Supermarkets is another major chain in Kenya, ranking second, by sales, in the retail industry. The oldest and once leading supermarket chain, Uchumi, is also a major player in the industry. Other key retail chains are Ukwala, Chandarana and Naivas Supermarkets which is amongst the newest players in the sector. New players are entering the market in a local setting and they still embrace the VMI models in managing their inventories

VMI is an efficient management model widely used in both developing and developed countries in their various supply chains. Implementing this model in the supermarket set up in Kenya has proved to be a challenge. In the Kenyan set up, VMI was introduced in 2002 and since its inception; there has been some teething problems in its implementation (Reardon, 2005).

The research problem in this study was determining the barriers of implementing the VMI in the Kenyan supermarkets. The study scope was sample of Kenyan supermarkets mainly in the city of Nairobi. The research questions in the research scope were; what criterion is required by the vendor in order to use the VMI model successfully and reap the benefits with minimal barriers?

2. Literature Review

The review of literature looked at the theoretical foundation, empirical review, critique of the existing literature, summary and research gaps and Conceptual framework was also developed.

2.1 Theoretical Review

a) Resource Based Theory

According to Resource Based Theory, resources are inputs into a firm's production process; can be classified into three categories as; physical capital, human capital and organizational capital (Crook, 2008). A capability was a capacity for a set of resources to perform a stretch task of an activity. Each organization is a collection of unique resources and capabilities that provides the basis for its strategy and the primary source of its returns. In the 21st-century hyper-competitive landscape, a firm is a collection of evolving capabilities that is managed dynamically in pursuit of above-average returns. Thus, differences in firm's performances across time are driven primarily by their unique resources and capabilities rather than by an industry's structural characteristics (Crook, 2008).

b) VMI Key Success Factors

The major KSF as per (Claassen et al, 2004) are: - Relationship quality, Information quality, Information sharing and the quality of information and communication system. "The fortunes of VMI rely on the philosophy and attitude that both vendor and manufacturer apply to their relationship" (Gardner, 2004).

c) Implementation of VMI Strategy

VMI is a recent phenomenon in the retail supermarkets in Kenya introduced in 2002 and steadfastly growing in the sector. The effectiveness of VMI in the retail supermarkets has been registered in improved stock management, cash flows and risk management. In the Kenyan fraternity, the model has been fully embraced and implemented as a strategy of gaining competitive advantage.

d) Barriers in implementing VMI strategy in Kenyan supermarkets

The effectiveness of the VMI is based on the several factors earlier listed. The barriers faced in implementing the model in the Kenyan retail stores are but not limited to:

- Information Quality and Sharing- lack of good quality information and channels to pass the same information to the players in the sector is a bottle neck to the effectiveness of the model
- Inventory Flow- the supply chain in the Kenyan setting have not been streamlined to ensure a seamless transfer of goods from the manufacturer to the vendor store where the buyers are to collect the same.
- Buyer / Seller relationship- This buyer/supplier relationship ought to be seamless for the effectiveness of the VMI model. Credit advancement and other payment models which boost this relationship are still being streamlined.
- Transport infrastructure- The Kenyan transport network is underdeveloped and this impedes timely deliveries due to traffic snarls ups.
- VMI is reliant on process and technology-relying on particular processes can affect VMI operationally if things go wrong. It only takes one failure on technology and that leads to a breakdown of the whole process.
- A VMI system often requires the vendor to make more deliveries of goods, especially if the customer prefers to keep stocks quite low and this can be problematic. A joined up approach between the vendor and the buyer on batch sizes and process can pay dividends in the long run.
- VMI requires the vendor to take more responsibility overall because they are now responsible for the delivery of items and deciding when the customer needs more goods. This is quite a responsibility and not all vendors are geared up to handling this kind of responsibility, so to some extent, there are some companies for whom VMI is simply in another league.
- VMI is also dependent on the vendor and the customer being able to work together to accurately determine forecasts for demand in both the long and the short term. Without accurate forecasts, the system will simply implode and be unable to cope with peaks in demand and then the 'bull whip' effect takes over and the supply chain becomes more volatile.

2.2 Empirical Review

A study by (Danese, 2007) found out that in many US retail outlets the success of the extended VMI approach has depended on the adoption of a central information system allowing suppliers/manufacturing plants to decide how much and when to deliver taking into account all the necessary information concerning different supply network members. Such a system supports the production planning and order cycle processes within the supply network on two levels, the first based on the sales forecasts of the distribution centers including a horizon of 18 months; and the second based on the suppliers/manufacturing plants decisions concerning the order confirmation within the frozen period, taking into account possible unexpected requirements (Murray, 2007).

A survey by Marketing Research International (2009)revealed that effective integration of information communication technology with inventory functions using inventory management systems such as Electronic Data Interchange and Material Requirement Planning Systems could play a major influence in supporting effective implementation of VMI practice in many retail outlets. Economic order quantity is the optimum size of the order that minimizes the cost of ordering and holding cost. Concern has been raised that Uchumi supermarket management lacked to apply the EOQ as the inventory systems used failed to minimize the cost of ordering and holding stock (Brian, 2008).

2.3 Conceptual Frameworks

In this study, effective VMI is conceptualized as being dependent on the inventory availability, ICT infrastructure, efficient transport network, information quality and timely sharing and buyer/supplier relationships. The dependent variable is the effective vendor managed inventory system as illustrated in the below figure (Fig 2.1)

The strategic use of the VMI framework to boost performance and efficiency in Kenyan supermarkets has some barriers and challenges. The key success factors, in successfully implementing the framework in all supermarket outlets in the country, are also a challenge which has not been critically analyzed. The existing outlet procurement procedures and regulations may impede the successful VMI implementation (PPDA 2005).

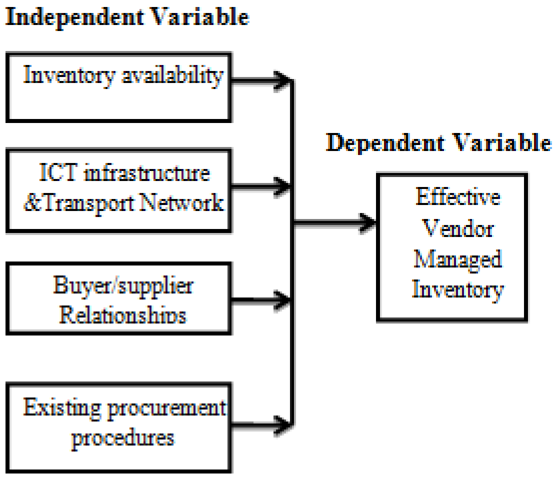

Figure 2.1: Conceptual framework with dependent and independent variables

3. Research Methodology

The research adopted the survey research design with a qualitative approach to analyze the data. A qualitative approach is an approach to gathering information focuses on describing a phenomenon in a deep comprehensive manner. The research targeted Nakumatt holdings, Tuskys, Uchumi, Ukwala, Naivas and Chandarana supermarkets in Kenya.

The main instrument for data collection was close ended and open ended questionnaires and personal interviews. Close ended questionnaires are a question format that limits respondents with a list of answer choices from which they should choose to answer the question. Open ended questionnaires are questions designed to encourage a full meaningful answer using the subjects own knowledge and feelings.

Analysis of data is the process of inspecting, cleaning, transforming and modeling data with the goal of discovering useful information, suggestion and supporting decision making. It has different approaches, encompassing diverse techniques and a variety of names (Sharp et al, 1996).The data collected was analyzed through qualitative approaches. The qualitative approach is gathering information and describing a phenomenon in a deep comprehensive manner.

4. Findings

This research undertook to examine the barriers of implementing vendor managed inventory on organizational performance in supermarket outlets in the Kenyan market with a view of giving recommendation for better implementation. The Specific objectives of the study were to determine whether technology affects the VMI implementation, to determine whether the supplier/buyer relationships affects the model implementation, to determined how the trust factor between the vendor and the management affects the VMI implementation, and to determine the proportionality relationship between VMI implementation and the business size.

The research made use of qualitative research approach with a descriptive survey research design. The descriptive survey research design is applicable where the population under study is large and a sample is taken and findings are generalized to the whole population, this design utilizes data collection tools such as observation, interview or questionnaires. This is a comparative survey study combined both primary and secondary data collection methods to produce a wider scope of coverage and give a wider picture on the barrier parameters of the VMI model.

The primary data were obtained through administration of questionnaires, interviews and observation while secondary shall be obtained from the journals, internet and books. The data obtained was analyzed through qualitative approach. The population was composed of all supermarkets in the Kenyan market. In total the researcher targeted only 49 branches of 3 supermarkets in the Capital city and a sample of 15 supermarkets was examined with 75 respondents being interviewed.

From the research findings gathered, 76% of the population responded positively to the research, this clearly shows that the outcome of research is reliable for duplication in other relevant retail shops or relevant to add on more research work.

The researchers also found out a majority of the respondents were aged 31-40 years of age. This was a clear indication that the supermarkets employed aged people who had experience and enough knowledge on VMI and a bit cautious on the barriers to its success.
The barriers of VMI implementation are well known and high percent of the respondents were aware of their existence. 92% was an overwhelming numbers of the majority hence no doubt of some existing barriers to effective implementation of the VMI model.

Table 4.6: List of Barriers in implementing VMI

Barriers of VMI implementation	*Total*	*Percentage %*
Inventory availability	10	18 %
Procurement procedures	57	100 %
Information Technology	50	88%
Buyer/supplier relationship	57	100%
Transport infrastructure	20	35%
Perishability and Quality of goods	5	9%
Customer Satisfaction Index	43	75%
Inadequate Information	36	63%

Source: Author, 2013

Further the research sought to identify the major causes to these barriers through interviewing the senior management. Prices of products – The prices of the products presented for VMI were promotional prices. After the VMI exercise, the prices change drastically and this affects the purchasing pattern. Consumer Loyalty to existing product brands- Consumers tend to buy the products which they are familiar with and have been in the market for long.

Product quality- Products under VMI are of top quality since they are the first products supplied to promote the brand. As soon as the VMI process is over, the product quality tends to change the Procurement methods which do not support VMI. Some existing procurement methods commonly used by the supermarket do not support VMI due to tendering processes in that prequalification blocks the other suppliers for a specified period.

Supermarket capacity- The capacity of some branches is such that it can only accommodate the procured products and any additional products stands will be stretching the capacity. Organizational culture, values and Code of ethics- The code of ethics and culture adopted by the supermarket blocks the VMI promoters due to the expectations of customer and management. From the lengthy interview with the senior management officers, it is evident that VMI implementation faces some barriers in the market which needs to be addressed for its effectiveness.

Among the possible solutions that were suggested by the interviewed respondents were:-Integrating the VMI model with the existing procurement methods to ensure there is system synergy. This shall ensure that the VMI implementation is effective, development of strong ICT systems and infrastructure to ensure that VMI implementation is apt and creation of capacity through strong warehousing facilities to support the demand for goods. The study sought to also find out the measures and possible solutions proposed by the management in curbing the barriers to effective VMI implementation. From the interview, the solutions brought forward included:

a) Integrating the VMI model with the existing procurement methods to ensure there is system synergy. This shall ensure that the VMI implementation is effective; Development of strong ICT systems and infrastructure to ensure that VMI implementation is apt.
b) Creation of capacity through strong warehousing facilities to support the demand for goods, Encouraging buyer/supplier relationships through CSR .Encouraging the customers to try new products in the market ,Improve quality of information sharing which improve VMI implementation based on trust and reliability, Encourage clear agreements between supplier and supermarkets for defined responsibilities and obligations for both parties involved. This will ensure that VMI execution is done at its best to avoid mistrust and eventual fallout and VMI models should not be implemented impromptu, adequate planning to be done before its implementation.

5. Conclusion

In conclusion, VMI is an effective and efficient inventory management model if implemented, monitored and evaluated well in the supply chain. The VMI model helps firms to reduce operational and procurement costs and also increases customer service levels. Also problems in the supply chain that include stock-outs and inventory carrying-costs are reduced. The effectiveness of VMI in the retail supermarkets would be registered in improved stock management, cash flows, risk management, and management of the bullwhip effects associated with unpredictable swings in demand (Fisher, 1997).

While VMI has been voted best by the retail supermarket managers, it has its shortcomings associated with trust, turnover of suppliers and small scale suppliers who lack financial capacity to implement VMI concepts sustainably (Damanpour, 1992).Barriers to the successful implementation in the Kenyan supermarket, has led to the increased operational and inventory management cost. These barriers affect the market share through the effect on customer satisfaction and service levels on consignment as some goods are one-offs.

6. Recommendation

The study recommends that VMI should be well implemented since it influences the organizational to invest a lot of money in purchasing of inventory. Further the study recommends that stock out costs, Inventory acquisition cost, and inventory holding cost and inventory maintenance cost should be well determined since they affect organizational performance.

Additionally the study recommends that organizations should integrate all its inventory management functions with information communication technology as well as ICT realization thereby increasing organizational performance, Customer service should be maintained at a very high standard since this is a direct link of organizations turnover and performance. Organizations should enhance Communication between its entire staff members as well as the customer. This relates to the literature review (Singhal, 2008) who contended that three factors have strongly impacted change in the importance of information technology in SCM.

First, satisfying in fact pleasing customer has become something of a corporate obsession. Serving the customer in the best, most efficient and effective manner has become critical. Second information is a crucial factor in the managers' abilities to reduce inventory and human resource requirement to a competitive level. Information flow plays a crucial influence in strategic planning (Martinez, 2009).Finally the study recommends that VMI to be well implemented in organizations since it helps in reducing inventory distribution costs.

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