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Challenges of Supply Chain Integration: The Case of Soap and Detergent Manufacturing Companies in Ethiopia

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Abstract- The main objective of this study was to investigate the challenges of supply chain integration in Ethiopia soap and detergent manufacturing companies. To address the research objective, the quantitative survey approach was followed, and target unit of analysis of the study was 25 soap and detergent manufacturing companies. The questionnaire was administered to 75 target respondents to collect the primary data (each company represented by three informants). To analyze the data obtained from respondents' simple descriptive statistics were applied. Finally, the study found that inflexible organization system, lack of channel trust and commitment, resistance to change and lack of top management commitment were found as supply chain integration challenges in soap and detergent manufacturing firms. In general, the conclusion obtained from this study may not be used to generalize to overall supply chain network performance since its focus is only from the manufacturer's points of view.

Keywords: *supply chain integration, internal and external integration, challenges.*

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I. Introduction

The current business environment is often described as intensely competitive, increasingly dynamic and globalized in. To remain competitive in such a challenging environment, organizations should not only continue to leverage their internal sources of competitive advantage but also should strive to tap into the synergies across the multiple supply chains that they are part of(Natour, et al, 2011). Many authors agree that integrative practices and a high level of integration have a positive impact on corporate and supply chain performance. Recent empirical work (Frohlich and Westbrook, 2001; Vickery et al., 2003; Childer house and Towill, 2003) shows convincing empirical evidence for the relationship between integration and performance.

On the other hand; Van Donk & Van der Vaart (2005) disagrees with the assumption that more integration is always better. Based on both theoretical perspective and empirical evidence they show that it is significant to understand the influence of business conditions on the level of integration and integrative activities implemented. The main factor is the influence of demand characteristics or uncertainty on the type of practices employed: an issue also addressed by Fisher (1997), Mason-Jones and Towill (1998) and Childer house and Towill (2002). This argument indicates the need for more research to empirically test how supply chain integration affects business performance in a different business scenario. For that reason, the researcher of this study interested to examine the effect from the context of developing countries which is surrounded by different market challenges specifically on Soap and detergent manufacturing firms found in Ethiopian.

As to the knowledge of the researcher in Ethiopia, there are few papers that are conducted on supply chain management which only assess the practice in different sub-sectors. For instance, a study made by Berhane (2007) to model supply chain management system in Ethiopian manufacturing industry indicate different problems such as Poor strategic alliance, longer lead times (procurement, conversion, distribution) which results in unnecessary inventory and more value is not given to increase customer service level and product expectation, which result in loss of customers that have large economic impact on the organization. The same author concludes that one of the problems which contributed a lot towards the above limitations and backwardness of the sector could be the lack of conceptual framework and basic knowledge of supply chain management amongst the business practitioners. A study conducted by Asfaw (2012)also concludes that modern supply chain management theories and practices are not well understood and practiced as a means of improving organizational performance. Therefore, the study aimed to investigate challenges of supply chain integration in soap and detergent manufacturing firms' in Ethiopia. Based on the gap identified and discussions made on empirical and theoretical evidence, the following basic research questions were formulated.

- To what extent Ethiopian Soap and detergent manufacturing firms integrate with their supply chain partners (supplier & customer).
- What are the challenges that affect the supply chain integration of Ethiopian Soap and Detergent Manufacturing firms.

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II. Literature Review

a) The Concept of Supply Chain Integration

In a supply chain context, integration is defined as a process of interaction and collaboration in which companies in a particular supply chain work together to arrive at mutually acceptable outcomes (Pagell, 2004). Most supply chain literature considers supply chain integration as the collaborative effort in linking functions and supply chain networks in terms of process, information and physical flow (Sabath, 1995; Lambert et al. 1998; Frohlich and Westbrook, 2001; Mentzer et al. 2001; Fawcett and Magnan, 2002; Romano, 2003; Pagell, 2004; Zailani and Rajagopal, 2005). Mentzer et al. (2008) concluded that coordination and collaboration with suppliers and customers is the key element of supply chain integration. Therefore, coordination, collaboration, interaction, information flow linkage and business process linkage become the key components of supply chain integration for this research. The supply chain literature seems to have arrived at an agreement that supply chain integration is required internally within and across functions, as well as externally across suppliers and customers (Steven, 1989; Morash and Clinton, 1998; Frohlich and Westbrook, 2001).

i. *Internal integration*

Internal integration is defined as a process of inter-departmental interaction and collaboration that brings departments together into a cohesive organization (Kahn and Mentzer, 1996). Moreover, to achieve greater customer satisfaction, II is characterized by full system visibility within an organization from the point of purchasing through to distribution. In practice, special attention must be given to the interactions between functional areas such as procurement, production, logistics, marketing, sales and distribution (Steven, 1989; Morash and Clinton, 1998; Birou et al., 1998). An organization is considered to have a high level of integration when the information systems used by different functions are linked together with all functions able to access accurate and real-time information from other functions, and there are also effective means of communication across functions (Sabath, 1995; Frohlich and Westbrook, S. Boon-itt 2001). Furthermore, there should be seamless links between functions regarding business processes as well as strong relationships which support interaction and collaboration across the functions (Steven, 1989; Morash and Clinton, 1998).

ii. *Supplier integration*

Supplier integration refers to the process of interaction and collaboration between an organization and its suppliers to ensure an effective flow of supplies. It is also called 'backward' integration (Froehlich and Westbrook, 2001). An organization is considered to have a high level of SI when its information systems are linked with those of the suppliers, both parties can access accurate and real-time information, and there are effective means of communication between the two parties (Liker et al., 1996; Ragatz et al., 2002; Koufteros et al., 2005). Furthermore, there should be seamless links between them regarding business processes as well as the strong supplier-customer relationships which support interaction and collaboration (Handfield, 1993; Gilbert and Ballou, 1999). Integration with suppliers represents a change from an adversarial to a cooperative attitude, commencing with product development, the supply of high-quality products, the processing and incorporation of changes in specifications, technology exchange and design support.

iii. *Customer integration*

Customer integration refers to the process of interaction and collaboration between an organization and its customers to ensure an effective flow of supplies. To achieve a high level of CI, a company needs to penetrate deep into the customer organization to understand its products, culture, market and organization, so that it can respond rapidly to the customer's needs and requirements. Another important goal of CI is the improvement of demand planning and visibility in supply chains (Fisher et al., 1994); without information sharing from one end of the supply chain to the other, tremendous inefficiencies in customer service may occur (Lee et al., 1997).

b) Challenges and Obstacles of Supply Chain Integration

To achieve efficient supply chain integration for the processes or activities; organizations should recognize and understand all the integration challenges of supply chain. Awad & Nassar (2010b) explained that neither it was easy to integrate the supply chain strategies among organizations and nor it was easy to integrate the supply chain strategy of an organization with its corporate strategy. The following are major challenges that associate with supply chain integration explained by different authors;

Change and Culture: Karkkainen & Ala-risku (2003) argued that every organization had an organizational culture that defined its values, mission, structure, and strategy. Organizational culture was unique for every organization. The most difficult challenge that confronts the corporations is the culture and change because culture defines the relationships within an organization such as relationships among suppliers, customers, employees and other stakeholders. Therefore, an organization might need a cultural change to integrate its supply chain strategy with another organization. Cultural change is not an easy task at it changes everything such as values, mission, structure, strategy and relationships and it the biggest challenge faced by organizations while integrating their supply chains (Cited in Awad & Nassar, 2010b).

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Globalization: Awad & Nassar (2010b) argued that world markets were moving towards globalization and commoditization. Therefore, different challenges were raised by these factors as it became difficult for organizations to cut costs and integrate their business processes internationally. They further stated that companies look for new markets and production processes during the industrial age but now they looked for economies of scale. It was difficult for organizations to rely solely on supply chain integration to cut costs and it was not easy to integrate different supply chains systems globally or internationally. Thus, globalization is another challenge for supply chain integration.

Business process integration: Awad & Nassar (2010b) argued that there was a need to coordinate business processes in such a way that they should improve performance and service. They further exclaimed that the modern e-commerce practices had enabled the organizations to link their internal processes with those of external stakeholders. But, there were certain compatibility challenges among organizations such as technical, operational, strategic and political/legal challenges that could become an obstacle in business process integration among different organizations.

Transaction costs: Awad & Nassar (2010b) described that integration of supply chain sometimes required outsourcing of certain activities that would involve uncertainty and risk (such as revelation of trade secrets and performance breakdowns). There is a transaction cost involved in outsourcing certain activities. These transaction costs could become a challenge for supply chain integration.

Strategy and Planning: McDermott & Chan (1996) argued that strategy and planning itself became a challenge for supply chain integration among different organizations. It was because different organizations had different organizational or corporate objectives for which they strategize and plan. Supply chain strategy of an organization is integrated with its corporate strategy to reach its corporate goals and objectives.

Thus, supply chain integration means integration of corporate strategies among different organizations which is a challenge because corporate goals and objectives of different organizations are different and unique. It is not easy or possible to integrate corporate strategies of two different organizations. (Cited in Awad & Nassar, 2010b)

Customer order management: Boxall (1992) explained that customers were becoming more demanding and their needs and wants had changed in the modern world. Needs and wants of customers had become dynamic as well as diverse. The basic purpose of supply chain strategy was to identify and satisfy the needs and wants of customers effectively and efficiently. But, when needs and wants are changing, it was not possible to integrate supply chains for a longer period of time as market dynamics used to change rapidly. Therefore, it seems that supply chain integration was a short term orientation. (Cited in Awad & Nassar, 2010b)

Operations Management: Awad & Nassar (2010b) different operations' strategies were employed by different organizations to satisfy the needs and wants of target customers. Supply chain was a part of operations strategy. Another challenge for supply chain integration arises in operations as it is important for different organizations to integrate their supply chain management only if their operations are flexible enough to allow this integration.

Business standards: Finally, business or trade standards for operating in different industries are different. Sometime, the value chain for a specific product or service is scattered across different industries. Therefore, in such case, it becomes difficult to integrate supply chains because of the difference in industry or business standards. (Awad & Nassar, 2010b).According to R. Shukla& D. Garg & A. Agarwal (2012), there are barriers which affect not only coordination in the supply chain, but also influence one another. It is, therefore, important to understand their mutual relationship so that those barriers that are at the root (called driving barriers) and those which are most influenced by others (called driven barriers) are identified, so that management can take appropriate action.

III. Methodology

This study fall under quantitative survey research design that focus on examine challenges of supply chain integration in Soup and Detergent Manufacturing firms in Ethiopia. A total of 25 companies have been selected as a target unit of analysis for this study. To obtain list of manufacturing companies, the researcher used ECSA 2010 report and data on lists of manufacturing firm which obtained from ministry industry. After selecting the target companies questionnaire was distributed to the 75 respondents (three from each company) who typically have a title such as SC (supply chain) manager, CEO/president, vice president or director, and knowledgeable about the company's SC processes. For this study as a primary data questionnaire has been designed and distributed to collect information from selected sample respondents. A set of questions on each aspect of the supply chain integration have been derived from extensive literature review and almost majority of instruments that measure Supply chain integration were adopted from Baofeng Huo, (2012). All questions have been organized of using Likert scale ranging from 1 to 5. The perceived operational performance also addressed through questionnaire. Moreover, items related to supply chain integration challenges have been objectively organized based key measures obtained from SCM literatures (e.g R. Shukla& D. Garg & A.

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Agarwal (2012)). After collecting the relevant data for the study, Statistical Package for Social Science (SPSS-20) software was used for input/output analysis of descriptive statistics.

IV. Result and Discussion

a) Intensity towards Supply Chain Integration

This section focus on the intensity of Ethiopian soap and detergent manufacturing firm's towards supply chain integration and associated challenges. Therefore, data related to each of the of supply chain integration dimensions: Internal integration, customer integration, and supplier integration are summarized and the results are presented below.

Table 2: Internal Integration

		Responses	
		N	Percentage
Internal Integration	Strongly Disagree	6	1.1%
	Disagree	32	6.1%
	Neutral	112	21.4%
	Agree	228	43.6%
	Strongly Agree	145	27.7%
Total		523	100.0%
N=75			

Table 2 indicate the summary frequency distribution that the internal integration of firms based on the intensity of respondents toward their respective judgement about their company. Therefore, the majority of respondents responses reflect that (43.6% agree and 27% strong agree) on the reliable items that measure Internal Integration that takes place in their organizations. This shows there is somewhat good internal integration of major functional units within the organization such as procurement, production, marketing, inventory management and distribution. Others around 22% remain neutral and small percentage of respondents responses (7.2%) indicate that they disagree on the measurement items provided. These indicate non-existence a perfect internal integration and timely exchange of information between functional units or departments within the organizations.

Table 3: Customer Integration

		Responses	
		N	Percentage
Customer Integration	Strongly disagree	20	9.2%
	Disagree	10	4.6%
	Neutral	57	26.3%
	Agree	82	37.8%
	Strongly agree	48	22.1%
Total		217	100.0%

Like that of internal integration, Table 3 show the summary frequency distribution of respondents' response toward firms' intensity in working with major customers in an integrated manner. As it is exhibited in the above table 37% agree plus 22.1% strongly agree on the measurement that evaluates the existence of external relationships with major customers. These shows that soap and detergent manufacturing companies have to some extent good communication with their customers on research activities and new product development, they have transparent information exchange with their customers about their inventory status, they exchange production plan information with their customers, they collaborate with their customers" development program, they are aware of their customers medium and long-term policies and strategies, they share technical information with their customers, they have long term relationship with their customers. However, around 13.8% of respondents' responses shows disagree and strongly disagree on the issue of customer integration. This shows the availability of some gaps in achieving better customer integration with downstream partners. Finally, the remaining 26.3% found to be neutral concerning to the measurement items.

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Table 4: Supplier Integration

		Responses	
		N	Percentage
Supplier Integration	Strongly Disagree	19	2.9%
	Disagree	36	5.5%
	Neutral	129	19.8%
	Agree	290	44.5%
	Strongly Agree	177	27.2%
Total		651	100.0%

As we can see in Table 4, more than 70% (27.2%+44.5%) agree and strong agree on major items that measure supplier integration process in Ethiopia Soap and detergent manufacturing firms. This figure indicates that these companies have somewhat good communication with their suppliers on research activities and new product development; they have transparent information exchange with their suppliers. On the other hand, around 8% of respondents' response failed to agree on the existence of an outstanding relationship between their company and its suppliers while 19.8% remain neutral. This lead the research to reconsider that major technological issues like implementation of ERP system and development of webpage or other IT infrastructures in collaboration with suppliers might not be as such good. Even the results obtained from independent item response also indicate this gap.

Yet, based on the majority of respondents response it is possible to say Ethiopia soap and detergent firms are aware of their supplier's medium and long-term policies and strategies, they share technical information with their suppliers, they have long term relationship with their suppliers, and they also help their suppliers for best performance.

Generally, based on this result it is difficult to generalize that Ethiopian Soap and detergent manufacturing firms have outstanding supply chain integration with both up and down steam supply chain network members. Because achieving outstanding supply chain integration is not as such easy task even in developed or industrialized courtiers.

b) Supply chain integration challenges

As it is mentioned in the literature Awad & Nassar (2010), explained that neither it was easy to integrate the supply chain strategies among organizations and nor it was easy to integrate the supply chain strategy of an organization with its corporate strategy. According to R. Shukla & D. Garg & A. Agarwal (2012), there are barriers which affect not only coordination in the supply chain, but also influence one another. It is, therefore, important to understand those challenges so that management can take appropriate action. The researcher of this study identified twelve supply chain integration barriers from literatures and asked respondents to rank the identified challenges based on their observation from the context of their own organization. Their response ranked on the basis of the mean score of each challenges & it's presented in the following table 5.

Table 5: Supply Chain Integration Challenges

Challenges	Mean	Rank
Inflexible organizational systems and process	8.5161	1
Lack of channel trust and commitment	8.3226	2
Resistance to change and adopt innovation	8.1613	3
Lack of top management commitment	7.4839	4
Cross functional conflict	7.0000	5
Resistance to share information	6.6774	6
Difference in organizational culture	6.45	7
Lack of clear alliance guidelines	6.4194	8
Poor supply chain planning	6.0968	9
IT deficiency	5.9032	10
Lack of coherent contract	4.5806	11
Lack of meeting, cooperation and technical assistant	4.1935	12
N=75		

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As we can see from table 5, the major top challenges that hinder the supply chain integration process ranked by respondents based on their degree of severity. Rank 1 indicates very critical challenge and rank 12 represent very less critical challenge. As shown in the table the barriers were identified on the basis of their mean score. Basically, respondent who represent Ethiopian Soap and detergent manufacturing firms identified inflexible organization system and process, lack of channel trust and commitment, resistance to change and adopt innovation, lack of top level management commitment and cross functional conflicts were identified as the top five critical challenges for adopting and implementing supply chain integration process. On the other hand respondents ranked information technology deficiency, lack of coherent contract and lack of meeting, cooperation and technical assistant as the least critical challenges for integration. In a USA based study, the continual existence of functional silos, resistance to change, and poor communication are identified as barriers to adopting collaborative relationships between supply chain partners (Mentzer et al., 2001). Here there is one thing that surprise the researcher of this study IT deficiency is taken as the least challenging which is far from truth on the context of Ethiopia because IT infrastructure is poor and it is nationwide problem.

V. Conclusion

This empirical study was conducted in Ethiopia Soap and detergent manufacturing firms to investigate the challenges of supply chain integration. The challenges with internal and external integration, the researcher adopt twelve critical challenges from literature and asked respondents to rank in accordance with their degree of effect. To begin with extent of firms' intensity towards supply chain integration, the study found that Ethiopian Soap and detergent manufacturing firms are somewhat in a good position. However, their internal integration or collaboration of each departmental unit within the organization is better than external integration with customers and suppliers. Yet, in terms of information technology usage it was found weak in the firms under the study. Finally, the study find that inflexible organization system and process, lack of channel trust and commitment, resistance to change and adopt innovation, lack of top level management commitment and cross functional conflicts were identified as the top five critical challenges for adopting and implementing supply chain integration process in the manufacturing firms under the study. To this end, reducing the extent of such challenges and implementing supply chain integration expected from managers of each company to enhance their competitiveness. In this study data were collected from manufactures, not include supplier and customer. The study validly generalizability only from manufacturers point of view. Hence, it is highly desirable in the future research to have more than one respondent and consider it to incorporate customers and suppliers.

References Références Referencias

1. Awad, H. A., &Nassar, M. O. (2010a).Supply Chain Integration: Definition and Challenges. International Association of Engineers:
2. Awad, H. A., & Nassar, M. O. (2010b). A Broader view of the Supply Chain Integration. Challenges. International Journal of Innovation, Management and Technology, 1 (1), 51-56.
3. Central statistical agency (Ethiopia). 2010. Report on large and medium scale manufacturing and electricity industry survey.
4. Childerhouse, P. & Towill, D. R. (2003), "Simplified material flow holds the key to supply chain integration", Omega, vol. 31, pp. 17-27.
5. Childerhouse, P. & Towill, D.R. (2002), "Analysis of the factors affecting the real-world value stream performance", International Journal of Production Research, vol. 40, no. 15, pp. 3499-3518.
6. DerejeAsfaw (2012). The impact of supply chain management practices on the organizational performance of basic metal and engineering industries in Ethiopia.
7. Fawcett, S.E. and Magnan, G.M. (2002), "The rhetoric and reality of supply chain integration", International Journal of Physical Distribution & Logistics Manage- ment, Vol. 32 No. 5, pp. 339-61.
8. Fisher, M. (1997), "What is the right supply chain for your product?", Harvard Business Review, March-April, pp. 105-16.
9. Frohlich, M.T. and Westbrook, R. (2001), "Arcs of integration: an international study of supply chain strategies", Journal of Operations Management, Vol. 19 No. 2, pp. 185- 200.
10. Handfield, R.B. and Bechtel, C. (2002), "The role of trust and relationship structure in improving supply chain responsiveness", Industrial Marketing Management, Vol. 31 No. 4, pp. 367-82.
11. Kahn, K.B. and Mentzer, J.T. (1996), "Logistics and interdepartmental integration", International Journal of Physical Distribution & Logistics Management, Vol. 26 No. 8, pp. 6-14.
12. Lambert, D. M., Cooper, M. C., and Pagh, J. D. (1998), "Supply Chain Management: Implementation Issues and Research Opportunities," International Journal of Logistics Management, 9(2), pp. 1-20.
13. Lambert, Douglas M., James R. Stock, and Lisa M. Ellram (1998), Fundamentals of Logistics Management, Boston, MA: Irwin/McGraw-Hill, Chapter 14.
14. Mentzer, J.T. (2001), Supply Chain Management, Sage, Thousand Oaks, CA.

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15. Morash, E.A. and Clinton, S.R. (1998), "Supply chain integration: customer value through collaborative closeness versus operational excellence", Journal of Marketing Theory and Practice, Vol. 6 No. 4, pp. 104-20.
16. Narasimhan, R. and Kim, S.W. (2002), "Effect of supply chain integration on the relationship between diversification and performance: evidence from Japanese and Korean firms", Journal of Operations Management, Vol. 20 No. 3, pp. 303-23.
17. Stevens, G.C. (1989), "Integrating the supply chain", International Journal of Physical Distribution & Logistics Management, Vol. 19 No. 8, pp. 3-8.
18. Van der Vaart, T. and Van Donk, D. (2008), "A critical review of survey-based research in supply chain integration", International Journal of Production Economics, Vol. 111 No. 42, pp. 42-55.
19. Vickery, S.K., Jayaram, J., Doge, C. and Calantine, R. (2003), "The effects of an integrative supply chain strategy on customer service and financial performance: an analysis of direct versus indirect relationships", Journal of Operations Management, Vol. 21 No. 5, pp. 523-39.
20. Williamson, Oliver E. 1985. The Economic Institutions of Capitalism. New York:
21. Zailani, S. and Rajagopal, P. (2005), "Supply chain integration and performance: US versus East Asian companies", Supply Chain Management: An International Journal, Vol. 10 No. 5, pp. 379-93.

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