

Barriers of Supply Chain Management Practices in Manufacturing Companies in Republic of Yemen: Pre-War Perspective

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Abstract— Supply chain management (SCM) is a backbone of manufacturing firms, it enable them to manage all tasks throughout business process. Therefore, investigating the barriers for supply chain management has become significant to assist them for better practicing for SCM. However, the main aim of this paper is to describe the current technology, relationship, and alignment barriers within manufacturing companies in Yemen. A quantitative method was adopted using a questionnaire and a sample of 65 Yemenis respondents who belong to the medium management level of the manufacturing companies in Yemen. Data was analyzed using the SPSS Generally, the findings revealed that Suppliers' and customer geographical distance from own facilities represent the most barriers to manufacturing companies in adopting SCM in Yemen. Discussions of the findings, implication and limitation of the study were also included.

Keywords— Supply Chain Management, Technology Barriers, Relationship Barriers, Alignment Barriers, Manufacturing, Yemen

1. Introduction

Competitive capabilities are the aspect sought by organizations as they allow them to meet customers' expectations and boost the performance of the market and finance [1], [2]. The supply chain management (SCM) was long overlooked as a potential area for achieving sustainable competitive advantage despite the importance of a number of supply chain activities in cost containment [4].

Due to the fact that manufacturing companies in Yemen are seeking for the competitive position and organizational performance improvement, the current study carries the goal to test empirically the hindrance of supply chain management (SCM) practices in these manufacturing companies. To date, however, SCM has seen the shift of its role from being passive cost control, to a proactive role in steering the managers into recognising that building effective supply chains can provide the opportunities to create sustainable competitive advantage [5], [6]. There are significant advantages because SCM gives an impact on key competitive dimensions such as product availability and customer service. One would be quick to point out that the advantages are sustainable because success requires diverse and sometimes conflicting groups to integrate within the organization and between organizations to attain common goals [3].

Manufacturing in Yemen is plays an important role in Yemeni economy as indicated by the following facts number of employs in the industry sector was (162750) employee and export volume for the industry sector was (9.85%) of the total exporting volume in 2005 [7]. Furthermore, it is regarded as one of the newest manufactures that is described by its vigorous weaknesses and propriety nothingness of the vertical and horizontal level, and it doesn't have forward and backward linkage like what is known in strong and effective manufacturing. It largely depends on imported intermediate and raw material in production. Also, it faces much external and internal strangulation and challenges which form constrain of its prosperity and developing. So it is expected that Yemen manufacturing in general

and transformational in particular will face new troubles in continuity because of strong and disproportionate competition from imported products [8]. In addition to that, there is wake role of forward and backward interrelation in national economic in general and manufacturing sector in particular [9]. Thus, it is necessary to adopt broad and extensive motive system directed to motivating manufactures that are depending on local raw material, labors density, and forward and backward interrelation and integration with other national economic sectors [10]. This research will discuss the supply chain management practice and empirically describe the SCM practice obstacles that face manufacturing in Yemen, it includes the used methodology and findings followed by conclusions.

2. Literature review

1.1. Supply chain management

Supply Chain Management is the integration of key business processes from end user through original suppliers that provides products, services, and information that add value for customers and other stakeholders, and it refers to the firm alignment that brings products or services to market [5], with the involvement of the transporters, warehouses, retailers, and customers [12]. To be completely effective in today's rife competition, firms must also get the engagement of both customers and suppliers [13]. As the superior supply chain management's impact on a firm's operational and financial performance [14]-[16], its capabilities become a source of competitive advantage [17], [18]. Companies have to employ the SCM for their benefits and future growth, although it is likely that they will face obstacles to practice supply chain management.

2.2. Barriers of Supply Chain Management Practice

Due to the fact that the potential benefits of SCM seem substantive, it is understandable why a company may want to pursue SCM to take certain advantage of these benefits. However, benefits can only be gained if the barriers that hinder these benefits are overcome [19]. SCM barriers fall under managerial complexity or misalignments in bringing together firms' processes, structures, and culture [20]. Under the managerial complexity barriers, poor measurement systems, and

conflicting organizational structures and culture are included [21]-[23]. Among these barriers, there are three types of barriers established: technology deficiencies, relationship challenges and alignment barriers [19]. Following Harland, [24] "lack of strategic alignment of information technology; lack of awareness of potential benefits of supply chain technology and the lack of motivation are the main barriers to supply chain information integration among SMEs". Moreover, management practices, human resource capabilities, customer service, external orientation, internal communication, innovation and employee motivation have been confirmed to be the barriers to the implementation of supply chain management strategy that has been outlined in the South African public sector [25].

1.1.1. Technology Barriers

What proves to be the vital barrier to greater SC Collaboration and cooperation is the inadequate information systems. Poor information systems support proves to be a critical barrier since essentially collaboration is highly dependent on information. Coordinating value-added activities across functional and organizational boundaries without shared information are considered to be next to impossible. Moreover, it is important to have the ability to communicate and the availability of accurate, timely, and relevant information to supply chain efforts to reduce inventory, boost asset productivity and customer service [19]. Information and technology integration in supply chain management would be advantageous to organisational performance [26].

There is a double dilemma to the inadequate information systems. We begin with the complexity of managing complicated supply chain network that necessitates the collection and study of large data. The computer technology advancement has led to much greater use of data warehouses that compile and store vast quantities of data concerning various aspects. However, collecting data is not too much of a hassle compared to analysing it correctly and distribute it to the people who will use it to make decisions. Secondly, data only become priceless asset when it is in the hands of the 'right' people - those who need it and know how to use it. If all participants in a supply chain arrangement do not have ready access to vital information, opportunities cannot be and trade-offs cannot be

analysed. Consequently, the full benefits of SCC will not be realized [27].

1.1.2. Relationship Barriers

With regard to relational issues, clearly, shifting from a transactional and often a win-lose relationship poses a significant challenge. Alliance relationships are difficult to establish and it does not only require a change in philosophy but also a change in practice [28]. The importance of guidelines is that it can determine (1) which relationships would elevate the partnership status, (2) the intensity of specific relationships, (3) how key resources are developed, shared, and protected, and (4) when an alliance should be modified or stopped. Proven guidelines would help alliance management a great deal. It is not easy establishing relationships based on shared risks and rewards [19], and it is found that culture and attitude are important if companies need to execute the supply chain [29].

Most companies, especially those that possess market power, find the daunting task of sharing the economic benefits of alliance relationships. Despite this, dominant supply chain members show off the desire to disseminate the risks of uncertainty with alliance partners [19]. It is also a fact that sharing risks appears to be much more appealing proposition than sharing rewards. Moreover, even when it is decided that risks and rewards are equally shared, identifying and quantifying them can pose an exceptional challenge. Another important relationship barrier is the fact that people are not willing to share information. It also serves as a barrier that stems from the tensions that exist among channel members. Not having the trust makes it difficult to share information deemed sensitive. Many managers simply feel that they cannot afford to share proprietary information [19]. Unfortunately, without open information sharing, strategic and tactical supply chain decisions will definitely be sub-optimized and future collaboration efforts will be at stake [33].

1.1.3. Alignment Barriers

Inconsistent goals and poor measurement practices are also two factors that serve as barriers against successful SCC. Misalignment and fragmentation creates a problem to supply chain [29]. Divergent goals lead managers to make self-interested decisions that are always against those made by

other supply chain members. Collaboration is therefore stunted. Only when the various members of a supply chain are “pulling in the same direction” or working toward common goals that the competitive product/service offerings can be developed and managed for long-term success [19].

Also, while organization pursues different projects based on its own priorities, its supply chain partners have the tendency to become frustrated. In this scenario, mismatched goals will lead one or more members of the supply chain team to regard the other members as only partially committed to the “team.” In other words, the different value structures make collaboration daunting as each firm may struggle with valuing strategic directions and goals not similar to their own [30]. Also, measurement barriers create challenges in terms of the design and the daily management of supply chains. If a company fails to cost a process accurately, identifying the best supply chain partners would constitute a problem. Similarly, it will be difficult to define, and therefore share cost savings. Furthermore, without accurate costing, managers cannot set correct priorities effectively for ongoing improvement projects [19]. Non-aligned performance measures are also barriers deemed substantial for SC Collaboration. Poorly aligned measures leave the same counterproductive impact as inconsistent goals, where managers modify their behavior to maximize performance in the area being measured. Non-aligned measures thus become the precursor to conflicting decision making. Once again, different members of the supply chain team would pull in divergent directions. Similarly, when a supplier works under one set of measures while a customer is using another set of measures, there is the certainty that performance gaps will come into the picture.

The typical result is evident in the channel conflict and perhaps even the dissolution of the relationship. Poorly aligned measures can also cause customer dissatisfaction even when the supplier is dedicating tremendous resources to cater for the customer’s needs. Unfortunately, the disparate measures lead the supplier to lay an emphasis on the performance that the customer really does not value. A company can invest every bit as much effort into achieving mediocrity as it would to become a supplier of choice. The key is to know what is truly valued and then bring on the right measurement for it [27].

Not having a systematic approach to assess customer requirements can also impede collaboration. In the case where a company does not have accurate customer information, it cannot tailor its value-added processes to customer needs and requirements. Trying to guess customer needs is a very ineffective approach. Superior supply chain design decisions are dependent on knowing what customers really value. The final measurement issue rests in the difficulty to assess the contribution made by each supply chain member. One vital SCM proposition is that companies liaise with the best customers, suppliers, and service providers possible. It indicates that companies must be able to oversee the value-added contribution and capabilities of potential "team members." As supply chain practices mature, this issue will have the tendency to take on a greater role in supply chain design and management [5].

3. Methodology

This research use quantitative approach, it used to descriptive the common obstacles of SCM practice. As it provides detailed data about reality of research topic or phenomenon. The data was collected via a questionnaire designed on relevant literature, the adopted instrument that measure hindrance to SCM is adopted from [31], it distributed to the study sample. Industrial organizations of the republic of Yemen (listed in the Ministry of the Manufacturing and Trading) constituted the population of this study. A sample is taken on a geographical cluster (in five Governorates; Sana'a, Taiz, Hodeida, Aden, Hadramout) to represent this population. For each organization to be included in the sample it should be in business for at least 5 years, classified as a large organization 25 employees and more, [7]. A total of (48) questionnaire were distributed to the study sample and collected back, the data was collected in 2007.

4. Results and Discussion

The obstacles that hinder manufacturing companies in the process of practicing SCM is analysed means and standard deviations scores for items concerned the obstacles involved in the questionnaire. Table 1 shows some of obstacles that hinder supply chain management adopting. The item (1) is discussed the suppliers' geographical distance from organizations as an obstacle for practicing supply

chain management. Its mean score is 3.36, which represents a median degree of acceptance by surveyed response as an obstacle for them. That is supported by consistency in their opinions concluded form standard deviation score (0.96).

Item (2) represent an obstacle related to information system "lack of sophisticated information system for information sharing among supply chain members" has 2.77 mean score. It represents median degree of acceptance among surveyed managers. That lack information system is an obstacle faces them when they need to practice SCM in their Organizations. By considering standard deviation score (1.22) it seems their opinions are not consistent. Items 3 and 4 are lack of ability in managing inventories throughout the entire supply chain, and firm's lack of leverage within the supply chain. They have median degree of acceptance of surveyed managers with mean scores 2.59, and 2.59, respectively. That mean the obstacles have median degree of hindrance face them when they need to practice SCM in their organizations. There is inconsistency in opinions of the sample concluded from standard deviation scores are 1.09, 1.02 respectively.

Table 1. Means and Standard Deviations of Hindrances to SCM Items, (n=39).

Item	No	Mean	Standard deviation
Suppliers' geographical distance from own facilities	1	3.36	0.96
Lack of sophisticated information system for information sharing among supply chain members	2	2.77	1.22
Lack of ability in managing inventories Throughout the entire supply chain	3	2.59	1.09
Firm's lack of leverage within the supply chain	4	2.59	1.02
Lack of trust among supply chain member	5	2.33	1.03

Lack of cooperation among supply chain member	6	2.38	1.07
Lack of interest among the suppliers or customers to participate in the supply chain	7	2.74	1.14
Competition from other supply chains	8	2.82	1.10
Customers' geographical distance from the facilities	9	3.18	1.10
Overall average			2.75

Items 5 and 6 are the lack of trust among supply chain member, and lack of cooperation among supply chain members. They have low degree of acceptance with mean scores recorded to be 2.33 and 2.38. It indicates that the surveyed organizations have low degree of suffering from lack of trust and lack of cooperation among supply chain members. Moreover, these items show standard deviation scores which are 1.03 and 1.07 respectively.

Nevertheless, the responses suggest that there is inconsistency in surveyed managers' opinions. Items 7, 8, and 9 denote the lack of interest among the suppliers or customers to take part in the supply chain, be in a competition with other supply chains, and customers' geographical distance from the facilities. They have median degree of acceptance with mean scores are 2.74, 2.82 and 3.18 respectively. That mean, the surveyed organizations have median degree of suffering from these items 7, 8, and 9. As, hinders for using SCM in their organizations. But we found inconsistency in surveyed managers' opinions concluded from spreading in standard deviation scores are 1.14, 1.10, and 1.10.

5. Conclusion

Little attention has been paid by researchers to supply chain management practice in the region including Yemen. Therefore, this fill in part the gap which exists in literature, it explored the reality of obstacles that prevails in manufacturing in Yemen, as they play main role in enhancing the economy. It

contribute to reduce the ambiguity regarding the barriers of supply chain management practice in factories in Yemen, and the result provide a clear view that may help Yemeni organizations in this regard. The most obstacles found is suppliers' geographical distance from organizations as an obstacle for practicing supply chain management. The most important barrier to the implementation of supply chain management is both suppliers' and contractors' lack of information technology infrastructure [32]. Therefore, managers must terminate the obstacles hinder SCM practicing through providing sophisticated information system for information sharing among supply chain members, enhancing the cooperation among supply chain members, motivating suppliers and customers to have participate in the supply chain and adapting new techniques in managing inventories throughout the entire supply chain. Moreover, there is need to conduct further research to investigate the status of current practice of SCM in the same study context, there is an initiative by current researchers to conduct this critical issue.

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