Total Supply Chain Quality Management: A Viable Integration of Supply Chain Management And Total Quality Management

Suzari Abdul Rahim, Joel Gurpreet Singh and Yudi Fernando
Senior Lecturer, Graduate School of Business (GSB), Universiti Sains Malaysia (USM), Penang Malaysia

INTRODUCTION

Supply Chain Management, commonly referred to as SCM, has always been and remains the cornerstone of every organisation globally, particularly in the manufacturing industry. SCM’s generic definition refers to the integration of the various activities which procure materials and services, transform them into either or both intermediate and final products, and the distribution or delivery of these products to customers. There are 4 main elements of SCM which this paper seeks to identify, namely demand management, communication, integration and collaboration.

Total Quality Management (TQM) refers to the emphasis on quality that encompasses an entire organisation from end-to-end (supplier to end-customer). This concept placed due emphasis on the organisation’s commitment to a continuous drive towards quality excellence in all aspects of products and services that are important to it’s customers. It is a comprehensive and structured approach that seeks to continuously improve the quality of the organisation’s offering with regards to the continuous feedback it has been receiving.

This paper seeks to explore the integration of total quality management into supply chain management, and how this can prove to be a viable integration that subsequently benefits the organisation as a whole. Although the concepts of supply chain management and total quality management have been around for some time now, there still seems to be quite a number of gaps in its implementation. This discrepancy between the concepts proving effective in theory, and the lack of its practical implementation, probably stems from the fact that most organisations are currently cooped up in their “comfort zones” and enjoying the benefits from these concepts being practiced separately. However, it would be so much better and in line with the objective of increasing an organisation’s profitability, to reap the enhanced benefits that would result from integrating total quality management into supply chain management in all facets possible.

Both supply chain management and total quality management gained prominence in the late 1980s
and early 90s and became the main buzzword in operations management. From an initial definition that included integrating business processes and all activities involved from sourcing, procurement, conversion and logistics management, supply chain management became increasingly identified with customer satisfaction later on, with the main purpose of creating value for customers and stakeholders.

Total quality management, on the other hand, started from the initiatives of the United States Navy and went on to be adopted across the industrial world. Due emphasis was placed on quality being defined by customer’s requirements, increased quality coming from systematic analysis and improvement of work processes and establishing quality improvement as a continuous effort conducted throughout the organisation, with top management bearing direct responsibility for it. In the current decade, TQM has come to a host of different meanings, but with a shared platform that emphasises on quality, thorough organisational commitment and customer satisfaction.

Both concepts of SCM and TQM have seen their respective implementations side by side since their introduction into the industry, but have very rarely, or even consciously, been integrated as one total, complete process. There may have been instances, ad-hoc in nature, when both concepts were looked into as one process, but as far as being ad-hoc goes, it is but a temporary measure used only during a limited timeframe to solve a particular issue. We have yet to see both SCM and TQM being integrated as a whole and this is where the organisation’s these days are sadly lacking. It makes perfect business sense to conform to an integrated process of SCM and TQM, where the benefits far outweigh the cons in the long run. This integrated concept would also go far in ensuring the sustainability of an organisation in this dynamic environment.

2.0 Literature Review:

There has been a wealth of research done on both supply chain management and total quality management concepts as of today, but in comparison, nothing much as yet on integrating both concepts as one workable model. Supply chain management, in essence, covers a broad spectrum of factors and business processes and transactions. Some researchers have been using both supply chain management and purchasing concepts in parallel, but Lamming (1996) expanded the notion of supply chain management to a broader extent. With the growing prevalence of SCM among organisations worldwide, there is now a trend towards the conscious examination and rationalization of supplier networks and the development of “collaborative” or “partnership” relationships between buyers and suppliers (Balakrishnan, 2004).

Total quality management relates to a wide set of management and control processes designed to ensure the entire organisation and its respective members engage total focus towards providing products and services that thoroughly satisfies the customer’s requirement. Basically, the TQM concept corresponds to the continuous improvement of organisational processes which would ultimately result in products and services of the highest quality.

Over the years, researchers have shown increased interest in the study of QM from the perspective of SC. Current research has indicated that for an organization to achieve excellence in terms of business processes and product and service quality, the roles of quality management and supply chain management cannot be separated. Indeed, to achieve a level of excellence, the scope of quality management has to be broadened from total quality management to total supply chain quality management (TSCQM) (Kamran Rashid M.M. Haris Aslam, 2012). All business activities which are related to fulfilling the requirements of the organization’s customers will be planned together and executed by the supply chain partners.

Total Supply Chain Quality Management (TSCQM) is an integrated management philosophy which currently gaining traction in the industrial sector. This integrated philosophy comes from the best of both parent philosophies, namely Supply Chain Management (SCM) and Total Quality Management (TQM). Total Quality Management and Supply Chain Management are indeed critical tools in achieving competitive advantage and as well solidifying the competitiveness of an organization (Sila, et al., 2006; Vanichchinchai and Igel, 2009). Total Quality Management’s main focus is enhancing customer satisfaction (Gunasekaran and McGaughey, 2003) whereas Supply Chain Management is viewed as an approach towards improving competitiveness of the organization by integrating its internal functions and linking this with the external environments that is made up of customers, suppliers and other members of that particular supply chain.

Kamran Rashid M.M. Haris Aslam (2012), suggested that SCM and QM efforts improve each other’s performance and integration between the two functions can be beneficial for an organisation in many ways. It makes perfect sense to integrate both concepts as both are interrelated. Organisations are unable to achieve better quality without supply chain integration, and initiatives to improve quality on a continuous basis would usually produce a higher level of integration between all the supply chain actors involved. Relevant research indicates that by integrating quality management concepts throughout the supply chain, via TSCQM, the industry will get to enjoy the enhanced benefits of both SCM and TQM. The alignment of quality management practices across the supply chain with a common focus could lead to joint quality policy making and strategy execution, a phenomenon which could be
referred to as Total Supply Chain Quality Management (Kamran Rashid M.M. Haris Aslam, 2012). A relationship of such nature would result in higher levels of confidence in the firm’s supplier’s quality, marked reduction in the level of inspection, increased delivery speed, and responsibility for quality being borne by suppliers as well (Levy, et al., 1995).

Although there has been some work and research on integration between supply chain management and total quality management in previous years, there is still a need to develop a well-structured framework for quality management throughout the supply chain. The alignment of SCM and TQM towards a common focus would enable the execution of joint quality policy making and strategy implementation. This relationship between the many actors in a supply chain would result in a higher level of confidence in supplier’s quality, reduction in the levels of inspection, higher delivery speed, and suppliers taking responsibility and ownership for quality (Levy et al., 1995).

According to Sila et al. (2006), supply chain management and total quality management have both played an increasing role in strengthening organisational competitiveness. However, they stand to achieve much more significant results in integration rather than by themselves. The integration of these two concepts resulted in the formalising of the term supply chain quality management (SCQM) which emerged as a relatively new management concept where aspects from both concepts were combined and integrated (Sila et al., 2006, in Ross, 1998; Robinson and Malhotra, 2005). With this integration, the business processes and organisational structure will have, no doubt, become more complex and multi-faceted.

Each actor in a supply chain is both a customer and a supplier at any one time. Espousing a corporate vision which is customer-focused would very much aid and encourage the successful implementation of an integrated concept of supply chain quality management (SCQM). While still focusing on internal quality issues, organisations will now expand the quality initiative to include the entire supply chain. According to Kaynak (2008), SCQM can now be seen as the latest stage on the total quality movement. This would lead to a number of competitive advantages for the supply chain by improving productivity, reducing inventory and cycle time, and boosting customer satisfaction, market share and profits (Tan et al., 1998).

3.0 Proposed Integrative Framework:

Supply chain management and total quality management are two very powerful operation concepts and tools which remain very much in use to this day in industries and organisations worldwide. There has been an increasing body of research which has been advocating integrating both supply chain management and total quality management into one, all-encompassing model. Theoretically, the benefits derived from this integrated model far surpasses what organisations receive from applying both concepts separately, and there have also been tentative successes so far, in this endeavour.

The framework of Total Supply Chain Quality Management (TSCQM) would require information integration between the members of a particular supply chain. Conceptual framework refers to a structure of concepts, assumptions, expectations, beliefs, and theories that supports and informs a research and is an essential part of research. It represents a less formal structure and is commonly used for studies or research in which the existing theory is inapplicable or insufficient.

The framework is based on specific concepts and propositions which are derived from empirical observation and intuition. The conceptual framework for this paper is illustrated in figure 1 as below:

![Fig. 1: Total Supply Chain Quality Management (TSCQM)](image-url)
4.0 Research Methods:

This study employs the qualitative research, mainly because it is done to gauge the awareness of and adoption readiness of the integrated concept of Total Supply Chain Quality Management (TSCQM). Organizations may already be actively utilizing the concepts of Supply Chain Management (SCM) and Total Quality Management (TQM) in separation, however, they may not be aware of the integrated concept of Total Supply Chain Quality Management (TSCQM), or they might already be implementing a similar concept, albeit unconsciously and in an unstructured form.

During the course of this research, both primary and secondary data sources were utilised. The primary source of data was gained through interviews with industry professionals, whereas the secondary source of data gleaned from published journals, research papers and related publications. For the course of this research, the source of primary data will be semi-structured interviews with a selected number of industry professionals from the supply chain management background. There will be few face-to-face interviews with supply chain management personnel from the manufacturing industry. It aim to procure a decent picture of the current level of acceptance or, at the very least, the willingness, to explore the possibility of integrating both supply chain management and total quality management. The reason researcher have selected supply chain personnel for this interview is because we are looking into incorporating the concept of total quality management into each level of the supply chain. The source of secondary data, on the other hand, will be the journals and other research publications which have started research into the viability of this integration.

Discussion:

The parent philosophies of Supply Chain Management (SCM) and Total Quality Management (TQM) are such strong and effective principles which govern the operations of most organizations today. No organization would need these two philosophies better than those in the manufacturing industry, and for the sake of this research, the electronics manufacturing industry in particular. The applications of these concepts have revolutionized operations when it was first introduced, and still continues to support the industry to this very day.

The possibilities of continuous improvement are endless, which is why the integrated philosophy of Total Supply Chain Quality Management is a very interesting subject matter. It basically takes the best out of both worlds (namely the principles of SCM and TQM respectively) and integrates them into a concept that delivers far superior results than any of the parent concepts used on its own. However, both concepts have only seen separate implementations to date, with the principles of supply chain management and total quality management being applied independently in the industry. There is a lack of proof to suggest that as of now, a viable integrated model of Total Supply Chain Quality Management (TSCQM) is being practiced among the organisations locally. Some are not even familiar with this concept, which is quite understandable as even from a global perspective, supply chain quality management is still being cautiously practiced and more often than not, without a clear definition.

The integrated concept of Total Supply Chain Quality Management (TSCQM) currently being looked into unfortunately varies between the different organisations which are progressive enough to test the waters. Although it may seem that industry players are trying to play it safe when it comes to something relatively new, a more robust and visionary attitude is needed if organisations are to remain in and grow their respective industries. This would be the key to sustainability, thus ensuring that the business is able to sustain itself with a positive outlook down the road. Through the sets of interviews conducted with the respondents, there is evidence that an organization which practices the philosophy of Total Supply Chain Quality Management (TSCQM), or something akin to it, ultimately possess a relatively high level of competitive advantage compared to companies who dilute the importance of quality in their supply chains.

Conclusion And Further Research:

Supply chain management and total quality management have been relevant aspects of industries since their inceptions in the 1980s. Supply chain management refers to the integration of the various activities which procure materials and services, transforming them into either or both intermediate and final products, and the distribution or delivery of these products to customers. Total quality management, on the other hand, refers to a comprehensive and structured approach that seeks to continuously improve the quality of the organisation’s offering with regards to the continuous feedback it has been receiving.

There has been previous research initiated into the viability of integrating both supply chain management and total quality management, as per the literature review earlier. However, the concept is still unfortunately still in it’s infancy when it comes to practical implementation, as organisations seem quite unaccustomed to the idea as of now. The industry players need to understand that they must constantly be thinking “out of the box” if they are to remain sustainable moving forward. This includes the need to continuously improve its business processes and willingness to adopt new best business practices.

This research managed to draw comparisons between business processes of some organizations,
specifically focusing on the management of its supply chain and if it incorporated quality as one of its core considerations at every stage. Some organisations was found to have already implemented a quality-focused supply chain; although it was not identified formally as TSCQM but the fundamentals were similar. However some of the organisations on the other hand had a basic supply chain management process in action, and one which had significant gaps and issues to contend with. Quality was not central to its supply chain, focused instead sole on the quality department.

Organizations which have been successful in implementing the principles of Total Supply Chain Quality Management (TSCQM) could look forward to offering consultations and value-added services to either its suppliers or customers. Supplier and customers of the said company, once aware and benefitting from TSCQM philosophy of the company, could be interested in implementing the principles in their own organizations. This is where the company would be able to further strengthen its strategic partnerships through knowledge sharing and assistance on the philosophy.

REFERENCES


