# DEVELOPMENT OF A MATURITY MODEL TO ASSESS SUPPLIER RELATIONSHIP MANAGEMENT (SRM) PRACTICES IN EGYPTIAN FOOD PROCESSING SECTOR

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**Introduction**

Supplier Relationship Management (SRM) is a business process that provides a structure for relationships between buyer and suppliers and indicates how these relationships will be developed and maintained (Lambert and Schwieterman, 2012). SRM is one of the capabilities that a firm need to achieve competitive advantage in today’s fast paced business environment (Forkmann *et al.*, 2016).The effect of SRM practices have proven on different operational performance measures, including quality performance, delivery, flexibility and cost performance (Prajogo *et al.*, 2012). Relationships with suppliers exist with different maturity levels and the level of maturity determines the extent of benefits that a firm can achieve.

The food processing sector in Egypt is the least affected by the economic changes due to the wide base of consumption. This sector has attracted global players, who, with their improved supply chain management practices, are aiming to expand their presence in the Egyptian market. The local producers face severe competition with the arrival of global players in Egyptian food processing sector. Therefore, local food producers find it increasingly difficult to survive this competition unless they recognise that the supply chain collaboration is a core strategy, and develop adequate supplier management strategies and continuously follow up and monitor their supplier performance.

# Literature Review

**Supplier Relationship Management**

SRM, over the decades, has been viewed in different ways. In the 1960s it was a traditional relationship, then a logistics relationship in the 1980s, then it developed into a partnership relationship in the 1990s (Imanipour, Rahimi and Akhondi, 2012).

Different types of buyer supplier relationships were identified by several authors (Cox, 1996; Robert, John Jr. and Niklas, 1998; Trent, 2005), the latest was the one introduced by Rahimi *et al.* (2008) which is described in the following table.

|  |  |
| --- | --- |
| Transactional | Short-term relationship  Allocating limited resources to supplier  Simple buy-sell relationship  Change supplier easily  Local suppliers  Standard commodities  No need for innovation  Stability of demand  Lack of tendency to investment |
| Friendly | Suppliers depend on buyers  Multi suppliers for every product  High competition between suppliers  Necessity of high-ranked engineering experiences |
| Business partnership | Buyers depend on suppliers  Development of supplier’s competition power by buyer  High level value of buying  High level creativity of supplier Supplier’s technology ownership  High-ranked bargaining power of supplier Variety of supplier’s product |
| Familiar | 1. Long-term relationship 2. Buyer’s investment on supplier’s innovation 3. Powerful joint venture with supplier 4. Development of supplier’s technical skills by buyer 5. High level of purchasing value 6. International suppliers 7. R&D planning for suppliers 8. Complex commodity’s production 9. High competition power of suppliers 10. Extensive cost of changing supplier 11. Product development planning 12. Limited number of suppliers |

Table 1: Types of buyer supplier relationships (Rahimi et al., 2008)

## Supplier Relationship Management Practices

Various aspects of managing relationships with suppliers have been identified in the literature. Bemelmans et al. (2012) identified some aspects that are important in determining the effectiveness of buyer supplier relationship (BSR). Those aspects included optimisation of supply base in terms of number and quality, managing supplier relationships, integrating supplier into operational and value creation process and finally developing suppliers.

Kumar and Rahman (2016) argued that sustainable BSRs include three tasks: supplier selection, supplier development and supplier performance review.

Kam and Lai (2018)investigated the factors that can affect BSRs and he listed them as the use of contracts, transaction specific investment, trust, cooperative norms, social bonds, long term orientation and information quality.

Other SRM variables are commitment, cooperation, dependence/power, communication, functional conflict, shared values/mutual goals, relationship termination costs, and opportunistic behaviour (Chen, Smith and Thomchick, 2017) .

# Maturity Models

Maturity models, also known as stages of growth models, stage models, and stage theories, are used by different industries and disciplines to measure the level of sophistication of their organisational processes and facilitate the implementation of the best practices (Cienfuegos, 2013).

A maturity model can be defined as a staged structure of maturity levels, which defines the extent to which a specific process is defined, managed, measured, controlled and/or effective, assuming the organization develops and adopts new processes and practices, from which it learns, optimizes and moves on to the next level, until the desired level is reached. Thus, are enlisted the following objectives of the maturity models: (1) to measure the maturity of the process under consideration,

i.e. assign a level to the existing process; (2) to compare the maturity of an organization to other organizations and with best practices; and (3) to provide a mechanism of learning to improve the maturity level (Randeree, Mahal and Narwani, 2012).

Supplier Management Group in 2008 developed an SRM maturity model. The model is intended to assist companies, regardless of industry, through providing methods for assessing and developing capabilities that enhance an organization’s ability to manage its suppliers successfully, consistently and predictably in order to accomplish the mission of the organization and improve organizational effectiveness. The model measures five categories; spend visibility, supplier segmentation, collaboration, performance and risk management across five levels of maturity: limited, need identified, implemented, utilized and leveraged (Birmingham, 2008).

Bemelmans *et al.* (2012) developed a maturity model to assess the BSRs in the Dutch construction industry. The model assessed the maturity level of five constructs which are optimizing supply base, managing supplier relationships, integrating suppliers into operational process, integrating suppliers into value creation process and developing suppliers. These aspects were measured though four levels of maturity identified as: project level, regional level, business level and corporate level.

Another maturity model designed to assess the SRM in the construction industry was the one developed by Zhang et al. (2010). The model measures six categories: trust, objective, cooperation, risk allocation, capability of communication and procuring across four level of maturity: traditional rivalry, limited partnership, short term cooperation relationship, long term cooperation relationship.

PricewaterhouseCoopers (PwC) introduced a maturity model in 2013, the model that measures seven categories: strategy and governance, structure, processes, people, technology, performance management and risk management. They identified four different levels of maturity which are No SRM, Exploring, Established and World Class SRM (PwC, 2013).

Through comparing the four models, it was possible to detect the following areas and indicators of high levels of SRM maturity.

|  |  |
| --- | --- |
| **Areas of Maturity** | **Indicators of High Maturity Levels** |
| Spend visibility | Aligns with enterprise strategy  Insight into total cost of ownership |
| Supplier Segmentation | Drives behaviour of sourcing organization |
| Collaboration | Continuous improvement efforts  Advanced relationship |
| Performance | Recognition program in place  360 evaluations |
| Risk management | Monitor supply chain risk status and contingency plans. |
| Strategy and Governance | Full focus on value creation  SRM strategy fully integrated with business strategies |
| Process | SRM process fully integrated  Partnership strategy jointly defined and managed |
| Structure | SRM through centralized SRM office with SRM roles and responsibilities |
| People | All SRM stakeholders have deep SRM competences and there is tailored SRM training |
| Technology | Real time exchange of operational, tactical and strategic information |
| Performance management | Performance measures are jointly developed with suppliers and cover all SRM aspects |
| Risk management | Full visibility on relevant risks  Mitigation approach developed with suppliers |
| Optimize supply base | Differentiated commodity/product group strategies in place to optimize the supplier base and to maximize performance with the correct number and correct suppliers. |
| Manage Supplier relationships | There is a formal alignment of mutual future plans on technologies, objectives, and strategies.  Complete openness to share future product and technology information. |
| Integrating suppliers into the operational process | Information systems allow information sharing across the full supply chain with multiple tier suppliers and clients.  Cross-organizational supply chain benchmarking resulting in permanent improvement programs |
| Integrate suppliers into value creation process | Preferred supplier lists are available per product group, supported by worldwide searches, continuous industry monitoring, and joint technology roadmap discussions. |
| Develop suppliers | Supplier assessment and joint/mutual trainings are organized to learn in two directions and to establish common improvement programs (with targets and follow-up).  Trained and dedicated personnel are accessible for supplier quality and development. |
| Trust | Emphasize and build the high trust mechanism and mutual assistance mechanism |
| Objective | Goals are consistent not only in a single project, but also in the process of long-term cooperation |
| Cooperation | Both sides play their roles actively, and maintain close cooperation and exchanges to promote their cooperative performances through mutual learning and innovation |
| Risk allocation | Establish fair and reasonable profit-sharing and risk-allocation mechanism |
| Capability of communication | Close relationships with suppliers  Deep sharing and cooperation in the aspect of information resource, seek ways to solve problems. |
| Procuring | Deep sharing and cooperation in the aspect of material resource |

Table 2: Indicators of SRM maturity

# Problem

Supplier relationship management is an area of immense importance in supply chain management as it plays an important role in reduction of cost and optimisation of supply chain performance in manufacturing firms. This research is motivated by two gaps. The first is that literature includes relatively few studies on maturity models in the area of supplier relationship management (Birmingham, 2008; Zhang et al., 2010; PwC, 2013). The second gap is most of the studies conducted in this area have focused on investigating the application of SRM practices either in automotive sector(Turnbull, Oliver and wilkinson, 1992; Wang, 2004; Imanipour, Rahimi and Akhondi, 2012; Brandes, Brege and Brehmer, 2013; Imam, Hussain and Raza, 2015) or in construction industry (Jiang, Henneberg and Naudé, 2011; Bemelmans, 2012; Pala *et al.*, 2012; Nikinosheri and Staxang, 2016). Meanwhile, the applicability of SRM in Food processing sector is not clear enough.

This research currently in progress is seeking to fill in these gaps through developing a maturity model to asses SRM practices in the food processing sector in Egypt and answering the following research questions.

RQ 1: What are different practices of supplier relationship management?

RQ 2: How mature are the supplier relationship management practices in the food processing sector in Egypt?

The investigation will be conducted on Egypt’s food processing sector. This sector is a very dynamic sector, accounting for five per cent of the country’s GDP and averaging a compound annual growth rate of 12 per cent in the last five years as indicated by the Global Agricultural Information Network (GAIN) in its latest report in 2015.

With the exception of the chilled processed food sector, the food processing industry in Egypt, in contrast to many other countries, is not controlled by a few big players (Vasquez and Mohamed, 2015). The industry is classified based on ownership to publicly owned factories, private factories and jointly owned factories. Domestic food production is dominated by micro, small and medium-sized family owned companies. Only 11 are listed on the stock exchange.

The food processing sector in Egypt is one of the industries that has proven to be immune against economic changes. The food industry enjoyed a good run from 2012 to 2016 as consumer prices did not increase enough to affect the consumption patterns. However, in 2017, the inflation rated for food increased from 14% to 40% which lead consumers to start minimising the amounts of foodstuff consumed (Hafez, 2018).

In a new competitive business environment, the Egyptian food processing companies face challenges on many fronts. These companies now need to concentrate on providing niche filling products rather than using their existing products portfolios. Another issue facing the food industry in Egypt is food safety. Media has been giving considerable coverage to food safety recently due to the increasing number of safety problems in food production and the rejection of food shipments sent to US and EU. The fear of reduction in consumption and the food safety concerns can both be faced through managing supplier relationships which can grant food processing companies an advantage and bring benefits in areas of growth and innovation, sustainability, risk management, product quality, safety and long-term cost (Donnan *et al.*, 2014).

# Research work

**Proposed SRM maturity model**

In the guide issued by the institute of internal auditors (2013), the process of developing a maturity model was explained. Three steps were included in the process starting with determining the purpose of the model then determining the scale and developing the expectation for each component level (Rose, 2013).

The purpose of this model is to compare an organization’s existing SRM practices with the best practices, this will be achieved through:

1. Defining key SRM practices
2. evaluate the maturity of the organization’s existing SRM practices through the proposed model
3. provide guidance to organizations to improve their application of SRM

# Assessment indicators:

Based on the four models reviewed, an integrated framework is currently developed. In this phase, the framework incorporates contents of the reviewed models. In the second phase of this research, focus groups will be conducted including purchasing experts in the food processing sector for the purpose of prioritising the assessment indicators through assigning a relative weight for each of them. Experts can add new contents to the model as well. The content of this framework is the activities and practices that best capture the maturity of buyer supplier relationships.

*Supplier selection and optimising supply base:* It includes the process the firms undertake to select their supplier and determine their targeted supply base number.

*Integrating supplier into operational process:* This includes different perspectives of integration between buyer and suppliers which are: technological, supply, information technology, process, logistics, collaboration and lean perspective (Bennett and Klug, 2012).

*Governance:* This describes the manner in which supplier relationships are managed either formally or on a relational basis.

*Control: T*his indicates the level of control exercised in buyer supplier relationships, which is classified into private control and collective control. Three structural conditions characterize the level of control which are the goal congruence, power asymmetry and justice (Liu *et al.*, 2017).

*Risk management***:** This indicates how the firm identify and deal with supplier related risks before starting any kind of collaboration.

*Supplier development:* Supplier development was defined as any effort of a buying firm on a supplier to increase the performance and capabilities of the supplier to meet the buying firm’s short and /or long-term supply needs (Krause and Ellram, 1997). This indicator will identify the strategies adopted by the buying firms to develop their suppliers.

*Spend visibility:* Better visibility of supplier spend is a critical requirement for the success of today’s supplier management programs. This indicator will assess to what extent is the buying firm is involved in spend analysis of their suppliers.

*Structure and People:* This will indicate the role and responsibilities of procurement department in managing relationships and the readiness of staff to manage SRM programs.

*Performance management:* This indicates the process undertaken by firms to measure their supplier performance and KPIs they use whether these were administrative or performance KPIs.

# Measurement and Scale:

An assessment tool would be developed that indicates the level of maturity of SRM application in the food processing sector in Egypt. Firms are expected to rate their level of implementation on a scale from 1 to 4 indicating the different levels of maturity. Based on the previously developed models, the four levels of maturity will be as follows: No SRM, Initial SRM, Established SRM and Advanced SRM.

Level 1 “NO SRM”: This level indicates that the firm is unaware or is not applying any of the SRM practices.

Level 2 “Initial SRM”: This level indicates that the firm is applying some of the SRM practices but in an isolated way.

Level 3 “Established SRM”: This level indicates that the firm is applying all of the SRM practices but more integration between practices is still needed.

Level 4 “Advanced SRM”: This level indicates that the firm is applying all of the practices in an integrated way which characterise the firm as a world class model.

# Conclusion

This paper outlines the development of an SRM maturity model and highlights the area of its implementation. Once this research is complete, it will have both theoretical and practical implications. The maturity model developed in this study will help researchers as it provides a framework that defines the different level of SRM maturity in the food processing sector which was not clearly presented in the literature. Practically, this research will allow purchasing practitioners to assess their SRM practices and direct them to methods of sound implementation of these practices which will eventually affect their whole supply chain performance.

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