Producer Acting Like Service Provider: a new OEM hybrid Manufacturing-Service TQM Approach

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ABSTRACT
This article is conceptual and it outlines the implications for Original Equipment Manufacturers (OEM) in developing a new hybrid manufacturing service-based marketing strategy. First, by using the Porter's Value Chain model, it will outline how OEMs develop their competitive advantages in a normal context and then run the same theoretical analysis in the context of a homogenous market. The conclusion will show that in order to create competitive advantages without using too much resources, marketing, service and technology could work together and lead OEMs to adopt a more service-based marketing management orientation. Second, the implications of this new direction for OEM will reveal the need to implement internal and external marketing activities in addition to a more traditional external marketing one. The importance of the role played by technology in this endeavor will be established. The implication on the software side will show that a Customer Relationship Management system need to consider internal customers as well as external one. And on the hardware side, the important and relevant role of current innovative information technology trend will be proposed. Finally, the article will conclude on the need to develop a new direction in TQM research for manufacturers posing as service providers in other to help them making their competitive advantage sustainable.

Keywords: TQM, Original Equipment Manufacturer (OEM), Customer Relationship Management (CRM), Service Marketing, Industrial Marketing, Intangible Value, Homogenous Market

1. Introduction: OEM evolving in homogenous markets

The main goal of branding strategies is to help businesses to make a difference in their market. Brand strategy efforts helps companies to grow and develop by gaining more customers and market shares (Keller and Lehmann, 2006). When the market is flourishing, such efforts are not always required. Companies can take advantage of the organic market growth. However, when a market is becoming more saturated or when competitions become fiercer, brand strategy efforts are critical. They must be planned judiciously in order to achieve the intended difference in the market.

Compare to consumer brands in a B2C market, manufacturers have less opportunities to make the difference over their competitors. Manufacturers are organically production and efficiency oriented (Mudambi et al., 1997). Their quest to gain competitive advantages is usually accomplished by producing the best product while optimizing the use of resources. In the context of Chinese OEM, or producers of parts and equipment that may be marketed by another company, competitive advantages are primarily driven by price efficiency. And all functions of the value chain participate actively toward this endeavor.

However, after an era of expansion, several Chinese OEM markets are believe to become homogenous. In such market setting, OEM have difficulties to achieve competitive advantages as customers are not able to differentiate one manufacturer offer from the other. Manufacturers need to acknowledge this situation and focus on areas of the value chain where a sustainable difference can be created. This article proposes a new brand strategy by first analyzing how Chinese OEMs in homogenous market develop competitive advantages and then propose a change in posture from producer to service provider in order to help building suitable competitive advantages. In order to be sustainable, this implications of this change and recommendation for further research will be proposed.

2. Source of Competitive Advantage in Classic Manufacturing

Before considering the effect of a homogenous market on the conception of competitive advantages, it is important to understand first how price advantage is achieved in manufacturing markets. In order to do so,

a value chain's model (Porter, 1985) is presented in figure 1. Through a conceptual analysis, the contribution from all five primary activities and four supporting activities on creating competitive advantage will be performed and analyzed theoretically. Then, the results will be put in the context of homogenous market where OEMs have difficulties creating differences between each other.

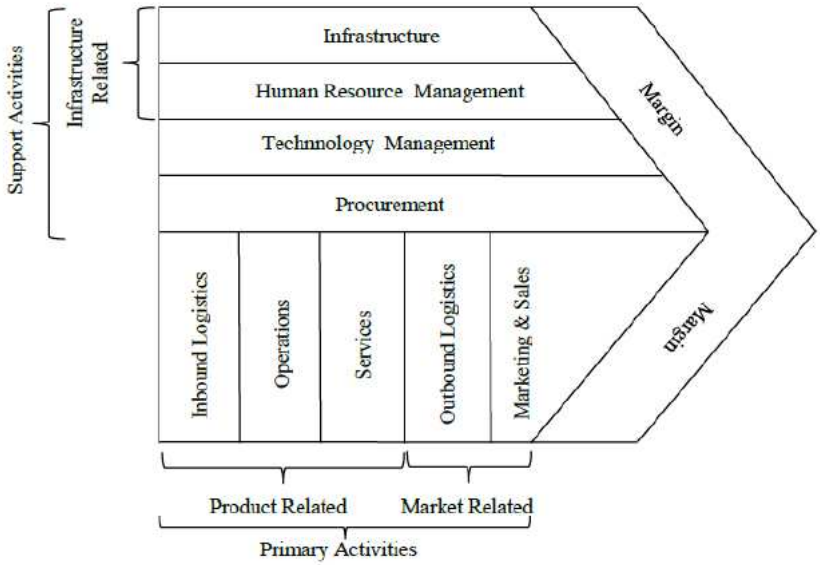

Figure 1: Porter Generic Value Chain (Porter, 1985)

In manufacturing markets:

- Inbound logistics, which includes all receiving, warehousing and inventory management of raw materials for production, helps factories to build price leverage by optimizing and distributing materials to various departments.
- Operation or production, which encompass all efforts needed to convert raw materials into a finished product or service, is controlled by the factories and represent the core of their activities. The leverage would be represented by engineering efforts to optimize production process.
- Services as well as Marketing and Sales are represented in the form of intangible activities. Price leverage can be achieved in reducing efforts (i.e. reducing direct sales).
- Outbound logistics, which happens after all operations are completed and the end-product is ready for customers, could also develop leverage by optimizing product transit from the manufacturer to the customers. In international trade, the latter part is even more important as goods needs to cross borders.
- Procurement is an important cost center directly related to a price competitive advantage. All factory purchases of fix assets or consumables will have an impact of the marginal cost of the production output. The main example are raw materials, machineries, and spare parts, Price leverage is achieved by getting cheaper and consistent products.
- Technology level defines how processes are efficient. Whether a task is performed by hand or by automation will affect the marginal cost of the production output.
- Human resource is particularly relevant in China where labor cost in the manufacturing industry was considered to be low and represented a comparative advantage in the global marketplace. But today the trend has changed.
- Infrastructure represents fix assets purchased by the manufacturer. In many case in China, factories locate or relocate to cheaper real estate areas.

3. Source of Competitive Advantage in Homogenous Manufacturing markets

Therefore what would happen if by reaching market homogeneity, price-based competitive advantage could no more be levered? On the surface, it would mean that all OEMs offer the same deals and values to all customers. To be more specific, it would mean that most primary and secondary parts of the value chain mentioned earlier are becoming uniform across the market and do not provide competitive advantages. The following development shows how this could be interpreted within all value chain functions:

- For inbound logistics, once optimized, it becomes very difficult to improve its process if the OEM does not develop.
- For operation or productions, OEM use similar machinery and production process across the industry. A large amount of resources would be required to invest in better engineering and production machinery, if it is available.
- For marketing and sales, their dependencies are based on the performance of other functions. If the tangible characteristics are at the core of this function, then a competitive advantage would be difficult to achieve due to the market homogeneity.
- For service, it depends on how the OEM management perceive the importance of intangible value.
- For outbound logistics, in a homogenous market or not, OEM selling to customers usually outsource this function. Transportation arrangements and paperwork are handle by forwarders. Their offer is based on the current demands and a price reduction is very difficult to achieve due to the fact that they operate on very small margin.
- For procurement, all competitors have similar costs for raw material and inventory management. In order to get an advantage, OEM would require to have enough resource to achieve economy of scales in buying more raw materials, maximizing use of inventory space.
- For technology related to production, the situation is similar to the operation or production function. However, for technology related to other function of the value chain, the development and the use of a more efficient decision system process can be achieved at relatively low cost.
- For human resource, the salary and related cost (i.e. training, incentive) can be reduced but this could affect other functions. Lower paid employees are less motivated or more reluctant to provide extra efforts to help building competitive advantage.
- For infrastructure, the cost will depends of the location for the OEM. The leverage could be achieved by relocating, but this strategy is easily adoptable by competitors.

From a preliminary examination, the consequence of this market homogeneity could leave the possibility to develop competitive advantages only to manufacturer with the financial means and the sheer size to use economy of scales on the primary and secondary activities of the value chain. Among other things, their size and money guaranty that they can achieve strong leverage with suppliers and logistic parties, and they can also finance technological development to improve production process and get a return on their investment. They could also pay employees better and improve their dedications. This interpretation emphasizes the fact that there is a direct relationship between money and competitive advantage. Therefore, is there any other way (requiring less financial resources) to obtain a competitive advantage?

The overview of the Porter's framework still permits to outline three possible functions for manufacturers in homogenous markets to develop 'cheaper' competitive advantages: marketing activities, services management and technology. Both of those activities have something in common: they have an intangible perspective. And the advantage of intangible values is that their evaluation and worth are inconsistent across customers. For example, customers might agree on how much worth a special packaging (a tangible value). But they might have different evaluation on how much worth a consulting session (an intangible value). Another example; in a manufacturing context, customers might have similar evaluation on the cost of a product characteristic. But they might have difficulties to assess consistently the value of a good customer service before, during and after the production. Although they are not in the core of OEM activities, intangible values could also have the ability to create salient competitive advantages and therefore be useful for OEM in homogenous markets.

The interactions between these functions are actually coherent. Marketing strategies focus on how to build brand equity through the understanding of product values (Aaker, 2009). However, as mentioned earlier, due to the homogenous nature of the market, tangible product values tend to be uniform. Therefore intangible values can be put forward in the marketing planning in order to achieve competitive advantages. And in the manufacturing industries, intangibles are usually represented by services offered

within the supply chain. Finally, a service orientation requires a persistent quality monitoring to implement a service-based-marketing strategy. And technology could support and assist In that matter. It could help centralizing and distributing up-to-date information. From this perspective, in a homogenous market, OEM would need to embrace those three functions of the values chain and to a more service provider orientation.

4. Adoption of Manufacturing Service-based Strategy

The marketing of services involves considerations and tasks that are different than those involved in the marketing of tangible products. In building intangible service values, manufacturers need to adopt a service quality management process in order to reduce the several gaps involved in services marketing. Of course, customers are looking for the best product, but in manufacturing, since the process of finding and purchasing the right product is complex, customers are also looking to get the best experience possible while purchasing. In our context of a homogenous market, where the salience of product values (tangible value) are diminished, services and the values they carry become preeminent. From that perspective, the same process uses in service marketing, could be used to improve the OEM brand equity and develop competitive advantages.

In that direction, the SERVQUAL framework needs to be considered as well as the gaps it mentions. The purpose is to make the service delivery in line with the customer's expectations (Parasuraman, 2004). Manufacturer's management needs therefore to consider the experience around the purchase of the physical product. This does not mean they should forget their main priority, which is producing the best possible output for their client. The idea is to pose as a service provider while producing goods. When contracting a factory, customers could consider the work done by a factory as renting or leasing their resources to obtain a suitable output. This is like a restaurant. It is a service that produces an output: a meal. A customer in this situation is receptive to intangible service value as well as the tangible value of the meal. Such shift toward service marketing strategy offers plenty possibilities in developing values (Matthyssens, 2006). If the product could no more carry values efficiently, several agents, such as the service encounters, the servicescape, and most importantly the employees in contact with the customers, could carry them.

The later agent is believed to be the most important in this context. This is confirmed by the trend where manufacturers use their sales teams to develop strong interpersonal bond with customers (Abdul-Muhmin, 2005). The objective for a new manufacturer service-based strategy would be to synthetize and homogenize the interpersonal interaction or encounters with customers in order to associate them to the brand. Nowadays, the interpersonal relationship is dependent on the individual. In other word, customers see the benefit of a factory by judging the agent they are in contact with. But if these agents leave the company, the values go with them and do not remain in the brand. In order to build a sustainable advantage, it is important that the value created remain with the brand.

5. Implications for OEMs adopting Service-based Strategy

So what would be the implications to implement this strategy? In addition to external marketing, the development of internal and interactive marketing, putting the focus on contact employees to carry values, becomes important for OEMs. These two marketing directions are complementary to the classic external marketing activities. They all together aimed at developing a sustainable and effective service marketing strategy. As OEM are historically producer, their main marketing focus was on external marketing. To accomplish the shift in service-based marketing strategy proposed in this article, the two other directions must be considered. Their definition and their implication in the context of OEMs will help to develop the new manufacturing service-based strategy.

First, internal marketing is an interaction process between the organization and its employees aimed to understand and fulfil employee's needs when doing their job, which in return will enhances employee motivation and retention. By satisfying the needs of internal customers, an organization increase its efficiency to satisfy external customers (Ahmed and Rafiq, 2003). In order to do so, OEMs need to create a process in the form of a dialogue between the internal customers (frontline employees) and the executives (decision makers for all functions of the value chain). This dialogue is information-based and

required appropriate media to carry the information. A new process is therefore needed to monitor efficiently this interaction with the aim to provide better values.

Second, Shankar and Malthouse (2006) definition of interactive marketing provide a very interesting view: "*Interactive marketing is an integrated exchange process by which an organization uses the understanding of customer behavior, technology, and other resources to create and manage customer value and collaborative relationships and enhance shareholder value through relevant brands, products/service offerings, ideas, and messages communicated and delivered to the right customers through appropriate channels and contact points at appropriate times*." A constant monitoring of all customers through multiple communication and delivery channels and contact points is required. OEMs needs to develop processes to perform information monitoring in order to tailor their offer to the idiosyncratic needs of customers (Simon & Schumann, 2001).

6. Role of Information Technology

One way for OEMs to perform this ultra-dynamic monitoring and control the quality of the output is to adopt a constant monitoring of information using appropriate information technology tools. Technology has been outlined as an important factor in service firms. Figure 2 shows that it is at the center to build an osmosis between external, internal and interactive marketing activities required in implementing service marketing-oriented strategy (Parasuraman, 2004).

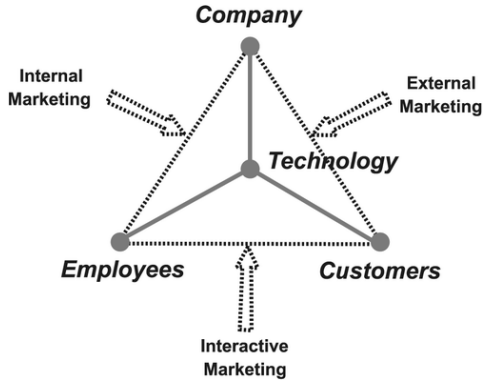

Figure 2: Pyramid model of services marketing (Parasuraman, 2004)

In an internal marketing perspective, information technology could help creating a more inclusive communication process between OEMs decision centers and frontline employees. An IT system could collect and provide up-to-date data for all the functions of the value chain. Those activities are best represented by a supply chain cycle (figure 3) adapted from Li & Fung (2019) which offer a comprehensive solution for international customers to monitors efficiently their trading activities. And their representation of a supply chain shows a more precise representation of all activities or decision centers to monitor, besides production.

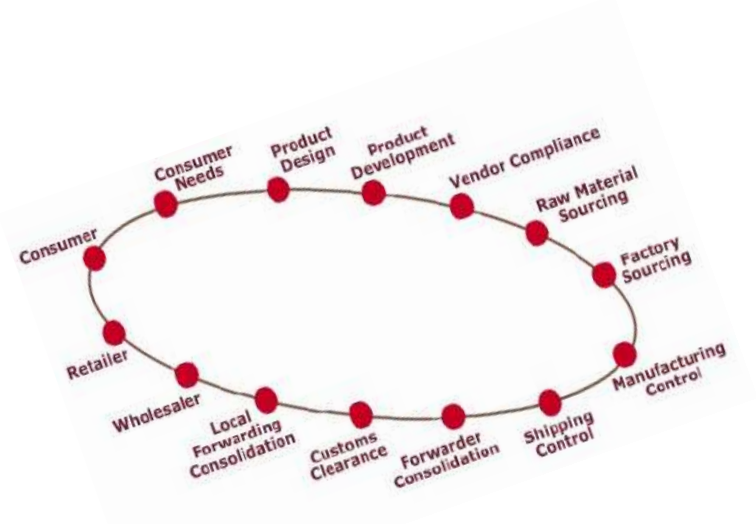

Figure 3: End-to-End Supply Chain
Credit: Adapted from Li&Fung supply chain solution

In an interactive marketing perspective, the pursue of synthetizing and homogenizing the interpersonal interaction or encounters between frontline employees and customers, OEMs usually adopt a Customer Relationship Management (CRM) information system. This has the advantage to provide data and monitoring between customers and a company (Alipour and Mohammadi, 2011). However, instead of limiting it to external customers, this system should also consider centralizing and offering internal customers with up-to-date information from all functions of the supply chain, transforming a classic CRM system into an Internal and External Customer Relation Management system (or IECRM). Such orientation would give to OEMs' executives a better control and monitoring of the intangible value they want provide. And since the quantity and the dynamic nature of data to process represents a real challenge, they would need to deploy an adapted larger range of information technology tools: software and hardware.

Figure 4: Central role of technology in End-to-End Supply Chain
Credit: Adapted from Li&Fung supply chain solution

7. Deployment of Hardware in IECRM System

In CRM, the emphasis is mostly put on the software part. But the management of data coming from a multitude of different activities in the supply chain, at different time, collected from different people, for different purpose and at large quantity requires OEMs to think about more suitable hardware and on how to use them as constant learning tools for internal and external customers. From this perspective, the

efficiency of the CRM system depends on how it is used and how it is updated. While interacting with a CRM system, users either collect information (output) and/or provide information (input). However, if an IECRM system is used, the input becomes critical and require therefore hardware that can allow efficient input. In IECRM, executives would be required to set up process to assess internal customer's experience and needs. And internal customers would be required to provide data not only to executives but also to external customers. So how to identify the appropriate hardware?

In today's world many brand selling IT hardware provide sub-brands especially dedicated to professional. One can ask what the fundamental difference is between and iPad and iPad pro. The answer would be that both allow to consult rich media content but the iPad pro allows more efficient and diverse input of data. In addition, the new trend of IT hardware development goes to device that provide mobility and versatility. Therefore, the use for professional hardware oriented on the input is critical for IECRM. Innovators and early adopters who buy new IT hardware products first, usually recognize the innovative added value. And in many cases those salient values were oriented to professional users. In history, we can acknowledge that the first laptop and even the first desktop targeted professionals rather private individuals. Therefore, by observing today's IT hardware technological development trend, it could be possible to deduce the possibility they could offer.

A first example could be phablet. They are either phone will large screens or new folding phones. Their innovative added values are based of higher mobility and versatility. In IECRM, both values are useful when frontline employees are in roaming and require to provide and consult information. They can assist customers. And they can provide evaluation to executives in order to assess the situation and possibly outline new internal needs. A second example could be virtual reality or enhance reality device. Their innovative added values are based on providing a higher level of rich media. In IECRM, this could be very useful when the customer, the frontline employees or support services want to check prototype or run simulations to assess results. For the customer it is a way to predict quality before starting production. And for frontline employees, it is a way to assess the situation and predict unexpected needs. In here both example of new IT hardware serves as tools that allow a better managing data with the purpose to identify, create, deploy and monitor various values. The better the innovation, the more values it can handle.

8. New TQM approach

For OEMs deciding to manage intangibles values and considering the implementation of service-based marketing strategy with the implications mentioned above, one problem remains: the assessment of quality. In the presented service-based strategy, OEMs will produce their traditional tangible values and deploy their new intangible values. Although they have experience in handling and assessing quality for tangible values, intangible values are different (Parasuraman, 2004). They have a heterogenous nature based on the situation and the customer (heterogeneity) and their delivery requires a constant assessment of the output (inseparability). In order to allow the OEM service-based strategy to be efficiently implemented and create sustainable competitive advantage, it should undergo the same process of TQM assessment as any other area,

However. the body of literature on TQM has focused on manufacturing (Mahmood et al., 2014; Singh and Ahuja, 2014), service firms (Arasli, 2012; Talib et al., 2013; Psomas and Jaca, 2016; Jyoti et al., 2017), in mass services (Woon, 2000), in service and manufacturing separately (Prajogo, 2005; Bouranta et al., 2019). In addition, comparison between manufacturing TQM and service TQM has been covered (Silvestro, 1998; Sureshchandar et al., 2001; Prajogo, 2005).. Furthermore, research on TQM also used to help assessing and developing internal and external customer's satisfaction (Singh et al., 2006; Sit et al., 2009; Bouranta et al., 2019).

9. Conclusion

In the context presented in this article, where a manufacturer poses as a service provider, the process to assess TQM may be different and could offer a new direction in research. The focus could be on the criteria to assess. Can the same criteria used in the study of TQM for manufacturing and for service firm be combined and mixed? For example, soft TQM practices are intangible and are primarily related to leadership, employee empowerment and culture, while hard TQM practices refer to quality improvement

tools and techniques, such as quality management systems, cost of quality and statistical process control, benchmarking (Fotopoulos and Psomas, 2009). Or is it necessary to develop new ones? The door is open to new research that will surely provide strong managerial implications for OEMs and manufacturer in general.

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