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Wastes and Tools in the Lean Marketing Strategy: An Exploratory Study in the Italian SMEs

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Abstract: The lean management is doing more with less by employing "lean thinking." It involves never ending efforts to eliminate or reduce wastes in design, manufacturing, distribution, and customer service processes. This paper aims to: Adapt to marketing the wastes identified in the lean; Propose some tools that can contribute to the reduction or the elimination of wastes present in the marketing strategies; Measure the results of the application of these tools in the marketing strategies in a sample of 10 SMEs. Ten SMEs situated in the north east area of Italy are using this classification to identify the wastes in their marketing strategies. The main results are an increasing customer satisfaction, the standardization of processes and the reduction of process cycle time. Companies use mainly value stream mapping or makigami to eliminate non value added activities in their process. Two companies are adopting some CPFR applications. They reduced the number of out of shelf per month. All enterprises declare that this classification is a useful method to take evidence on non value added activities.

Key words: lean marketing; wastes; small and medium-sized enterprises
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1. Introduction to Lean Thinking

Competitive pressure, and the necessity to respond faster to an increasingly global and changing market, have brought about the need for a new approach to company flexibility. As defined in numerous studies published in literature, flexibility reflects the capacity of a system to respond adequately and quickly to changes that are either within or outside of a system (Upton, 1994; Gupta & Buzacott, 1996). Authors such as Naylor have underlined the need for businesses to develop strategies that make them more agile and lean. This quality has been called Leagility. It involves ensuring the company is ready to make quick changes in response to ever faster changes on the market (Agility), while keeping the company Lean, in other words free of all non-value adding activities that are identified as waste (Naylor et al., 1997).

Ever since the first practical application at Toyota with the introduction of the TPS (Toyota Production System), numerous studies have been published on how these methods can be used not only in a manufacturing context, but also in design and innovation (Chen & Taylor, 2009). Until now, however, there are only few references for assessing the applicability of the basic concepts of lean thinking to marketing. Following analysis

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of the literature, a model is proposed here for framing the concept of waste (muda) — as defined in lean philosophy, and scientifically recognized in the fields of manufacturing, design and innovation — within a marketing context.

Lean manufacturing originated in the Toyota Production System (TPS) adopted in the 1950s, with the goal of reducing and where possible eliminating waste (muda), irregularity of processes (mura) and work that is too difficult (muri) (Ohno, 1988; Imai, 2012). Devised by Taiichi Ohno at the Toyota Motor Corporation, techniques for eliminating waste and excess from production flows were initially introduced to engine manufacturing, then to assembly and subsequently to all company processes, until finally extending application to the entire Toyota supply chain. Some authors claim that lean manufacturing has given rise to a new management paradigm, resulting in the proposal of alternative ways to manage variability and complexity based on completely different principles from those that make up more rigid Western models.

The term “lean” was introduced by Womack and Jones in the nineties only following the application of these new production models; it was seen the first time in the book entitled The Machine That Changed the World, publishing the results of a study conducted by the Massachusetts Institute of Technology (MIT) on the automotive industry (Womack et al., 1990). Since then, lean practices have been applied to different economic sectors and business contexts, from production to design (Choudri, 2002). The basic elements of lean management are very simple, and involve providing customers the highest service or product quality at the lowest possible cost, by eliminating or reducing everything that does not add value. In other words, it is the market that controls production (pull), while companies need to guarantee a flow of activities aimed at meeting demand through a process that makes continuous improvements to the product or service, in pursuit of perfection. Karlson and Ahlstrom (1996) further underline that “lean should be seen as a direction, rather than as a state to be reached after a certain time”. Lean is thus a philosophy (Bhasin & Burcher, 2006), as the more people who buy into the belief, the more improvements are feasible and the implementation process is facilitated. Liker (2004) says that any organization can implement Toyota’s management principles to achieve the same objectives: high quality and high profitability.

2. Lean in Marketing Context

Ohno claims that the system applied by Toyota is not simply a “production system”, but rather an entire business philosophy. Numerous applications of lean philosophy in various company departments are described in literature (Morgan and Likert, 2006): lean manufacturing, lean product development (Mascitelli, 2007), lean accounting (Maskell et al., 2011; Van Der Merwe & Thomson, 2007), lean development (Schipper & Swets, 2009; Ward, 2007). Nonetheless, there are no many studies on the application of lean concepts to marketing. Through examination of the literature, and starting from the model of 7 wastes used in all the contexts, this paper intends to provide one possible model for apply the concept of waste (muda) to marketing activities or procedures that can be considered as non-value adding.

Lowry (2003), for example, highlights how some statistics show that marketing costs account for between 40% and 60% of a good’s selling price. In response to this claim, Lowry focuses on the need to manage marketing activities so as to make them more efficient. This raises the question: “If we can implement a waste reduction process in production, why can’t we apply a similar process to marketing?”

In his article, Lowry states the need to discuss and analyze “Lean Marketing”, creating parallels between the

five principles of lean thinking and marketing mix. According to the author, in fact, there are numerous analogies between marketing and lean thinking, above all the fact that the customer is in both cases the focus of the strategy, and that activities must be organized so as to deliver value to customers. Based on these considerations, Lowry proposes the following table.

Table 1 Lean Thinking and Marketing Mix

Principles of Lean Thinking	Marketing Mix
Identify value	Price
Map the value stream	Place
Create flow	Promotion
Establish pull	Planning
Seek perfection	Product

Source: Lowry, 2003

Jenkins and Gregory (2003), on the other hand, propose a different classification of waste:

(1) Activity: when marketing activities are planned without a clear strategy.

(2) People: too many people involved a planned strategy compared to how many are actually needed.

(3) Processes: all non-value adding activities that are part of the processes of communication, customer acquisition, customer processing and before- and after-sales customer relationships.

(4) Waiting: this refers to the inability to make decisions quickly. Often the communication process is affected by the fact that some parts of marketing process are outsourced.

(5) Excessive communication costs.

(6) Trial and error: some marketing strategies are developed through trial and error.

(7) Excessive lead costs. Reducing these costs can help raise the level of service delivered to existing customers.

In their presentation, Jenkins and Gregory examine aspects relating to waste and the costs of communication and promotion, while they do not for example look at the costs of new product development or distribution. As a result, it would be useful to create a proposal that can adapt the seven types of waste identified in lean production to a marketing context. This aim of this paper then is to propose a model for applying muda to marketing strategies.

3. Wastes and Tools in Lean Marketing: A Proposed Model

In this paper we propose an application of the Ohno's model and their seven wastes in the marketing field. Moreover, we suggest for each waste some tools useful to eliminate or reduce muda. The model is proposed in the Table 2.

3.1 Over-production

Over-production occurs when there is a deviation between what an organization provides in terms of documents, information, materials or functions, and what the market effectively needs. A function introduced on an electronic device that is not used or not needed is waste, because that function is the result of a research and development process, and required a team of technical personnel to design and implement, thus generating unnecessary costs. If there is no demand for a function, document or material included with a device, then it will never become a distinctive feature to help sway customers in the decision-making process.

Table 2 Waste Considered within a Marketing Context, and the Tools Available to Eliminate Wastes

Muda by Ohno	Wastes in marketing	Example of Tools
Over-production	Information, materials or functions that exceed what is actually needed.	Quality Function Deployment
Inventory	No or incorrect demand forecasting. Excess unsold products or stockouts.	Just In Time, Demand Planning
Waiting	Service provision or distribution times exceed what the customer requires. Response times longer than customer expectations.	Value Stream Mapping
Over-processing	Complex procedures in delivering value to customers. Customers perceive much lower value than is actually supplied by the company.	Makigami Process Mapping
Transportation	Logistics systems - from raw materials management, to production, distribution and sale - are poorly integrated and inefficient	Collaborative Planning Forecasting Replenishment; Milk Run; Vendor Managed Inventory; Consignment Stock.
Motion	Products or services have low levels of usability and accessibility	Design For Usability; Design for Manufacturing and Assembly
Defects	Defects in products or service provision that create high costs of non-quality	Failure Mode Effect Analysis; Fishbone Analysis; 5Ws

Designers and engineers come under considerable pressure whenever they work on a new product version, with the outcome that the questions posed on product design and usability are less meaningful than they should be. Moreover, when working on a vast scale it is often impossible to conduct market surveys that are capable of ascertaining exactly how a product is used (Merholz et al., 2008). Bain & Company conducted a survey on the customer experiences at 362 companies. Of the companies surveyed, 95% said they were “customer focused”, and 80% of them claimed to deliver customers “a superior experience”. Yet in only 8% of the cases did customers also rate the experiences as being “superior” (Allen et al., 2005).

Consumer needs evolve, mature and become more refined, and consequently a relationship needs to be established with customers, listening to what they have to say, not criticizing them if they use a product the wrong way, but rather analyzing how they came to use it that way. One tool that can help companies identify effective needs is QFD (Quality Function Deployment), a model used to integrate market requirements into product design (Akao, 1990). QFD offers companies a tool for comparing the voice of the customer against design specifications, all in relation to the competitors’ positioning and products. Analysis performed using this model can help identify which product functions or characteristics should be invested in so as to achieve market differentiation and respond to demand (Govers, 1996).

3.2 Inventory

Inventory represents the result of excess production compared to actual market demand. Sales forecasts are always hard to produce, above all in very dynamic and rapidly changing economies. If not managed suitably, inventory becomes accumulated unsold material and thus an extra cost for the company. It is very hard to make exactly the right quantity to meet market demand, above all in industries where development times are very long or where products need to be developed prior to demand, as in the case of consumer goods.

Companies need to make strategic choices in order to avoid:

- producing too much, with the risk of retaining unsold goods
- producing too little, with the risk of stockouts.

Excess inventory of food products, for example, often becomes waste when reaching the sell-by date or when the product is otherwise considered unsaleable.

Excess production, and consequently inventory, occurs in many sectors:

- One study conducted by Milan Polytechnic shows how each year the Italian food supply chain wastes 6 million tonnes of food across the various stages from production to consumption.
- In Italy, around 6 million items are returned unused each year.

Specific production models have been developed with the aim of reducing inventory along the supply chain. In manufacturing contexts, these strategies are known as ATO (Assembly to Order), MTO or (Make to Order). The basis of these strategies is that no finished products are kept in stock, rather only components (in the case of ATO) or raw materials and components (MTO – BTO). Manufacturing commences when receiving a customer order. These models help reduce the risk of unsold material, and are based around the concept of product modularity. This is a strategic response by businesses to stay competitive, and involves decomposition of a product into building blocks (modules), which are then assembled in different ways using standardized interfaces (Baldwin & Clark, 1997). Numerous other models in addition to those described here can be adopted to reduce inventory; indeed, there are many demand forecasting methods available, as well as systems such as Just in Time, which is widely used by Japanese companies.

3.3 Waiting

Waiting is the period of time that elapses before customers receive the desired value. If unplanned, waiting is usually viewed as waste. From the customer's viewpoint, this period is never seen as being pleasant. Waiting rooms or waiting lists generally arouse negative thoughts or feelings. Moreover, nowadays time is considered to be a precious resource, so waiting is seen as a "waste of time". How time is perceived, in addition to how long actually elapses, is a fundamental element in providing a service or selling goods to a customer (Bateson, 1983).

Service delivery or customer response times can be reduced through careful analysis of flows throughout the process leading from customer request to fulfilment. One useful tool is Value Stream Mapping (VSM), a lean technique for analyzing and planning the flow of value (Rother & Shook, 1999).

3.4 Transportation

Transportation of material within a supply chain does not create value, as the product is not processed in any way; nonetheless, transportation is essential in making products available to customers. Continuously analyzing and examining material flows from the source of raw materials to the place of consumption, above all in a global economy, can help reduce this form of waste. The extent of this muda can be seen in logistics costs, an expense item that not only concerns transport companies, but all operations in which goods need to be moved from one place to another.

Reductions in logistics costs have been pursued over the years though outsourcing. Cost reductions can be achieved by action in different areas and not only by reducing inventory. Some elements that can help bring down logistics costs are summarized as follows: Reduce ordering costs by streamlining purchasing procedures, Reduce inventory holding costs, Reduce procurement lead times by selecting more punctual and reliable suppliers, Make combined/group purchases, Provide and request forecasts, and Centralize storage. Vendor Managed Inventory and the Collaborative Planning Forecasting and Replenishment are tools that can reduce the need of transportation (Holmström et al., 2002).

3.5 Over-processing

This occurs when complex solutions are chosen over simpler ones, in relation to any process. In practice, it means more resources are used than needed. This type of waste is hard to identify and eliminate. Lean principles can be applied to the marketing planning process, making sure the right resources are used, without unnecessary waste. Long-term market research, for example, conducted without truly understanding customers and their

desires, can lead to solutions being developed that are quite different from those that are needed. Lean methods, on the other hand, would emphasize:

One suitable tool for analyzing processes is Makigami (in Japanese this literally means “roll of paper”). Conceived in 1996 by Okamura-san in Fujico, this visual tool shows: the activities or tasks carried out by different company departments; the documents or means of communication used; the time required; the main critical areas. The purpose of the tool is to analyze processes in places where the “product” is not visible or physically available, such as in the office. Makigami Process Mapping is used to analyze and visualize any business process and is most effective in places where processes are usually not very “transparent” (Tonkin, 2009).

3.6 Motion

Every time a person moves their body as part of an action or task that does not directly add value to or perceive value from a product, such motion is considered unproductive. Take for example an ecommerce website: a purchase procedure that requires several “clicks” before completing the transaction can be considered wasteful, as it creates unnecessary motion or may even annoy the customer the extent where they decide to abandon the procedure. Another example is when consumers need to carefully analyze a product before working out how to use it. This concept is referred to as usability and accessibility. ISO 9241-171 defines accessibility as the usability of a system by the largest possible range of users (Petrie, 2009). This definition falls within the scope of broader concepts, such as “universal design” or “design for all philosophy”: a type of design centered around people with disabilities, involving the design of environments, products, services and systems that are sufficiently flexible as to be used directly (i.e., without having to make modifications or additions) by people with the widest range of abilities, in relation to the highest possible number of situations that may occur throughout the lifespan of the designed system (Mace, 1985; Preiser & Smith, 2011).

3.7 Defects

Defects in a product are never viewed by consumers as being positive. Defects are a form of waste, and occur when the system (product, service or environment) does not meet the specified quality conditions.

The costs of non-quality are not easy to forecast nor determine directly, and are often completely or partly underestimated, above all without systematic assessment of business risks. In addition, the costs of non-quality are almost never entered on the balance sheet, unlike the costs businesses spend on quality assurance or control. Finally, it is interesting to examine the concept of cost of quality as summarized by Crosby (1980). The author states that: “Quality is free. It’s not a gift, but it is free. What costs money are the ‘unquality’ things - all the actions that involve not doing jobs right the first time”. One very useful tool for identifying and eliminating process and product defects is Failure Mode Effect Analysis (FMEA). This method is used to systematically analyze reliability and assess the effects of failures on systems and subsystems. Failures are classified based on their severity, frequency and likelihood of occurring, and the probability of being detected before the customer becomes aware of them. This method of analysis is used to systematically examine all the ways in which a failure may occur (El-Hail and Roy, 2005). Other methods to identify and remove some defects are the 5Ws (five whys) or the fishbone analysis.

4. The Methodology

The research was carried out on a sample of ten Italian SMEs localized in the north east area. This geographical area is considered one of the most productive in the country and it’s characterized by a high

concentration of small and medium-sized enterprises (over 99%). Because one of the objectives of this research is to test the model applicability on different industries, ten companies have different business, like manufacture and mining equipment, manufacture of wood stoves, and cars dealing (see Table 3). The companies were selected on a voluntary basis.

In every company the research is structured on the PDCA phases: Plan) Semi-structured interviews with Chief Executive Officers (CEOs), sale force, R&D, and customer service aim to identify the main wastes. The interviews highlight which aspects of the product or process no add value. Do) Tools identification, presentation to company's functions and application (in the case of more wastes and different tools to use, we adopt the quick-and-dirty approach, so we choose the most rapid and the cheapest way to improvement); Check) Two months after the start of the project, we control the results through interviews with Chief Executive Officers (CEOs), sale force, R&D, and customer service; Act) process standardization and extension of the solution to other areas of the company.

We make the same questionnaire to the customer before and after the development of the project; this allow us to detect if he reveals a change. The project duration was about a year and a half, seven companies continue to apply the model proposed to develop new improvement, while others continue to use the tools identified.

Table 3 Companies Analyzed, Tools Used and Main Results

Company	Wastes	Tools	Main Results
Manufacture and sale of construction and mining equipment, utilities, forest machines and industrial machinery	Waiting, Over-processing	Makigami e Value stream Analysis	Reduction of time of delivery of the finished goods to the customer from 15 to 11 days. Increased level of customer satisfaction. Increase inventory control and reduction of WIP.
Manufacture of brazing alloys and brazing fluxes	Over-processing	Makigami	Delivery within 24 hours of your order for a selected number of items. Increased level of customer satisfaction.
Auto dealer (the biggest in the north east area)	Waiting, Over-processing	Makigami e value stream analysis	Reduction of the number of vehicles deposited in a pivot parking with a consequent reduction of costs. Reduction of time of delivery to the customer from 2 to 1 week through a review of the sales processes.
Design and manufacture of Wood stoves, fires and pellet stoves	Over-production	Quality Function Deployment	Revision of projects and development of a new product able to meet the needs of the customer. Registration of a new patent.
Design and manufacture of industrial humidification and ambient air control systems.	Defects	Failure Mode Effect Analysis, Fishbone Analysis	Reduction of the number of defects; Reduction of time of maintenance of components.
Production of air conditioning plants for large spaces.	Inventory	Consignment Stock, Milk run system	Reduction on delivery time from 25 to 22 days. Reduction of Stock outs. Reduction of defect rates.
Production of fillings and parts made of flexible and integral polyurethane, and PVC, chairs. Automotive spare parts.	Transportations, Inventory	Collaborative Planning Forecasting and Replenishment	Increased goods quality, reduction of WIP, increased control of inventory.
Fastening systems	Transportations, Inventory	Consignment stock	Increased customer satisfaction; New service developed for customers.
Production of chain and belt conveyor systems.	Waiting, Over-processing	Makigami	Reduction of time from the request for quotation to quotation.
Complete plants for bricks and roofing tiles with particular focus on preparation, storage and extrusion equipments.	Motion, Defects	Design For Manufacturing and Assembly	Reduction of components per product; Modularization of product; Reduction of cycle time. Reduction of defects in finished goods

5. Conclusions

The first result is that the Ohno's classification of wastes should be valid in marketing context. Secondly, the relationship between waste and the proposal tools helps companies to manage the improvement. The companies involved in the project have a positive verdict on the model. In particular, the companies say :

- The model helps to identify more quickly which tools use to improve the level of customer satisfaction;
- The model presents some tools that the company did not know;
- The model increases the level of knowledge of customers;
- The model increases the level of customer satisfaction;
- The model has a positive effect on other business functions such as warehouse and R & D.

Unfortunately the model needs a good knowledge of the target market, obtainable through regular survey on customers. In order to improve the application of the model is necessary to identify a rating system to give priority to the various improvement projects that are identified in a company. The tools presented are not exhaustive because other tools can be useful to reduce some type of wastes, other researches should complete the relation.

At the end of the project, all ten SMEs are using this classification to identify the wastes in their marketing strategies. The main results are an increasing customer satisfaction, the standardization of processes and the reduction of process cycle time. Companies use mainly makigami and value stream mapping to identify and eliminate non value added activities in their process. Two companies are adopting some CPFR applications, one the QFD and one the DFMA. All enterprises declare that this classification is a useful method to take evidence of non value added activities.

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