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**LEAN MANAGEMENT IN CASE OF A LOGISTICS SERVICE PROVIDER
COMPANY**

Lean menedzsment egy logisztikai szolgáltató vállalat esetében

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Abstract

One of the most significant steps during the last one and a half centuries was the formation of mass production. Its success lay in the fact that industry recognized the importance of economies of scale, and have thus gained competitive advantage and cost effectiveness. The method has met expectations as far as the market listed ahead of the quantity of specific needs (exists) as opposed to other versions of the product (what). Let us remember Henry Ford's famous sentence, "Any customer can have a car painted any colour that he wants, so long as it is black."

Today, volume is no longer everything in the world of consumer society and abundance of products; competitive advantage can be achieved only if we are able to respond to individual needs but it can be understood that manufacturers are unwilling to give up the benefits of economy.

This combination seems impossible at first sight, but "customized mass production", Lean management, and the use of IT tools predict that particular benefit. Customers expect low price, good quality, wide range and products or services adapted to their individual needs. In our study we present answers to these specific needs with solutions and approach offered by Lean production philosophy.

Many consider Toyota Production System as the base for Lean (slimming) which has evolved from many decades of experience and intention of resolute improvement and that has been proven in practice. The name is somewhat misleading since we would think that it definitely has something to do with a sort of reduction, abandoning things; although leaning (slimming) mainly applies to the excesses and expenses (losses) while the transparency of technology is often improving. Yet the latter is not a necessity. It is neither simply clear whether this technology-based concept would also work in services.

However, this area of the management sector has begun a rapid growth not long ago, and more and more people are using the so-called Lean office concept, proving the grounding of the idea. "*The challenge in applying Lean to services is the lack of widely available references for implementing Lean in a service organization.*" (Damrath, 2012)

Other researchers (like Arfmann and Topolansky, 2014) claim that there are such big differences between production and services so it needs to be thought over and asked whether application attempts can be referred to as Lean or not. In recent times more and more authors and even experts doubt if Lean management can be applied in case of services, or if these attempts can be called Lean at all. This scientific uncertainty raises more questions

in the area of the interpretation of practical applications as well as the re-interpretation of conceptual bases. Should the principles be modified or should the practical methodologies be broadened?

Without joining this scientific debate, in this paper we will examine (show to managers) in the framework of a case study how a given service process may be improved with the help of Lean thinking. We are confident that a scientific polemic sets back the spread of practical application references. In our opinion, as for applications the point is not that we should insist on the classical methodology in each part but understanding the concept itself is more crucial so there is a need to go back to the basics. We also would like to prove in practice that concerning individual steps Lean philosophy may be more important than the set of the recommended methods. In our mainly theoretic research doing a comparative analysis through a case study example we present an application of Lean concept in the process of a logistics service provider.

Keywords:

Management, Lean, Value Stream, Lean Office, Toyota Production System

JEL Code: M11, O14, L23

Összefoglalás:

Az utóbbi másfél évszázad egyik legjelentősebb lépése a tömegtermelés kialakulása volt. Sikere abban rejlett, hogy az ipar felismerte a méretgazdaságosság jelentőségét, és ezáltal költséghatékonyságra és versenyelőnyre tett szert. A módszer eleget tett a várakozásoknak mindaddig, amíg a piac előrébb sorolta a mennyiséget (van) a sajátos igényekkel, termék változatokkal szemben (milyen). Emlékezzünk Henry Ford elhíresült mondatára: „Vevőink minden színigényét ki tudjuk elégíteni, feltéve ha ez a szín a fekete.”

Ma a volumen már nem minden a mai termékbőség és fogyasztói társadalom

világában, a versenyelőnyt úgy lehet elérni, ha az egyéni igényekre is reagálni tudunk, viszont érthető, hogy a gyártók a gazdaságosság előnyeiről sem akarnak lemondani. Ez a kombináció első hallásra lehetetlennek tűnik, ugyanakkor a „testreszabott tömegtermelés”, a Lean menedzsment és az IT eszközök alkalmazása pont ezt az előnyt ígéri. A vevők alacsony árat, jó minőséget, nagy választékot, és az egyéni igényeikhez igazodó termékeket, vagy szolgáltatásokat várnak el.

Jelen tanulmányunkban a különleges igényre adott válaszok közül a Lean termelési filozófia nyújtotta megoldásokkal és szemléletmóddal foglalkozunk.

Sokan a Lean (karcsúsítás) alapjának a Toyota Termelési Rendszerét tartják, amely sok évtizedes tapasztalatokból és elszánt javítási szándékból nőtte ki magát, mely a gyakorlatban is bizonyított. Az elnevezés kissé félrevezető, hiszen azt gondolnánk, hogy mindenképpen valami csökkentésről, dolgok elhagyásáról van szó, ám a karcsúsodás főleg feleslegekre és a költségekre (veszteségekre) vonatkozik, bár sokszor a technológia átláthatósága is javul. Ez utóbbi azonban, nem szükségszerű. Szintén nem egyértelmű, hogy a technológiai alapokon nyugvó koncepció a szolgáltatásokban is beválna-e?

A menedzsment ágazat ez utóbbi területe azonban az elmúlt időszakban rohamos fejlődésnek indult, és ma már egyre többen használják az ún. Lean office fogalmát is, bizonyítva az elképzelés megalapozottságát.

„A szolgáltatások esetében a Lean alkalmazása terén a fő kihívás az, hogy hiányoznak a széleskörű alkalmazási referenciák.” (Damrath, 2012)

Más szerzők (Arfmann – Topolansky, 2014) szerint olyan különbségek vannak a termelés és a szolgáltatások között, hogy az is kérdéses és újragondolást igényel, hogy alkalmazási kísérleteket Lean-nek lehet-e nevezni. Az elmúlt időszakban egyre több szerző, sőt szakértő kérdőjelezi

meg, hogy lehet-e a Lean menedzsmentet alkalmazni a szolgáltatások esetében, vagy egyáltalán lehet-e ezeket a kísérleteket Lean-nek nevezni. Ez a tudományos bizonytalanság több kérdést is felvet, mind az gyakorlati alkalmazások értelmezése, mind az koncepcionális alapok újraértelmezése terén. Vajon módosítani kell-e az alapelveket, vagy bővíteni kell a gyakorlati módszertanokat?

Anélkül, hogy csatlakoznánk ehhez a tudományos vitához, tanulmányunkban egy esettanulmány keretében vizsgáljuk meg (mutatjuk be a vállalatvezetők számára), hogy a Lean gondolkodás segítségével hogyan lehet javítani egy vizsgált szolgáltatási folyamaton. Meggyőződésünk, hogy a tudományos polémia hátráltatja a gyakorlati alkalmazási referenciák terjedését.

Véleményünk szerint az alkalmazások terén nem az a lényeg, hogy minden elemében ragaszkodjunk az klasszikus módszertanhoz, sokkal lényegesebb a koncepció megértése, ezért vissza kell térni az alapokhoz. A gyakorlatban is bizonyítani szeretnénk, hogy egy-egy lépés tekintetében a Lean-filozófia fontosabb lehet, mint a javasolt módszerek összessége. A következőkben a főként elméleti jellegű kutatásunkban egy eset tanulmány példán keresztül összehasonlító elemzést végezve mutatjuk be a Lean koncepció alkalmazását egy logisztikai szolgáltató tevékenységi folyamatában.

Kulcsszavak:

menedzsment, Lean, értékáram, Lean office, Toyota Termelési Rendszer

1. SPREAD OF LEAN PHILOSOPHY

The **Toyota Production System** (also referred to as TPS) has its roots go all the way back to Sakichi and Kiichiro Toyoda's work while Taiichi Ohno (Toyota Motor Corporation's production organizer) played a decisive role in its organization process as a system.

Toyota's production in the 1940s was characterized by conveyor belts and large batches in accordance with the Japanese market. The conveyor belt system soon proved to be not flexible enough due to the fact that shift between different models took too much time and made overall efficiency worse while the output volume required the standardization of products and processes as well as automation.

Toyota has recognized the changes in needs just in time, and drew its attention to low costs, high quality and a wider range of products than ever before. Thus there was a need for such a flexible response system that could be able to satisfy a variety of needs at the same time. Besides fast production turnaround, a fast rotational speed of capital became also necessary. While visiting Ford factories Toyota's engineers did not only adopt useful elements such as continuous production, standardization and automation from their western colleagues but also further developed and applied them at a much higher level.

Taiichi Ohno created the TPS in the spirit of continuous improvements namely **Kaizen** and **JIT** (Just in Time) principles. A number of studies on examining the Toyota System conclude that the establishment of the Toyota System requested Toyota's determined managers, external conditions (market, society, culture, tradition) (Tanaka, 2011), American relationships as well as committed employees. It was necessary that giving some space to their ingenuity they could help in implementing and for decades refining these ideas coming from a higher level.

In professional literature **Lean management** has a significant power in increasing efficiency meanwhile its adaptation to business is not an easy task. One of the key steps in Lean improvement projects is the so-called **process analysis** which can be used to filter out losses

present (in the form of time or materials) in the process. Frequent applications of Lean approach are non-routine but common in production yet completely unusual in the service sector and hiding several new challenges. Applying Lean takes place not only in service companies but also in office environments, and this is what we call **Lean administration**.

1.1. INTERPRETATION OF LEAN

Lean Production System is often interpreted in many ways such as Lean manufacturing, Lean management, and Lean methodology. Since the English word 'lean' also means 'slim', sometimes 'slimmed production' can be heard but nowadays it is increasingly popular to use Lean for short. Companies applying Lean Production System are often referred to as **Lean companies**. In his work "Lean Production" Tóth (2007) gave the following definition: "*Lean minimizes or eliminates the existing but not value-added operations in the processes, and uses only the most necessary resources providing the customer with the particular product, service, or information at the quality, price, and deadline he wishes.*" A bit more free but illustrative interpretation comes from Németh (2008):

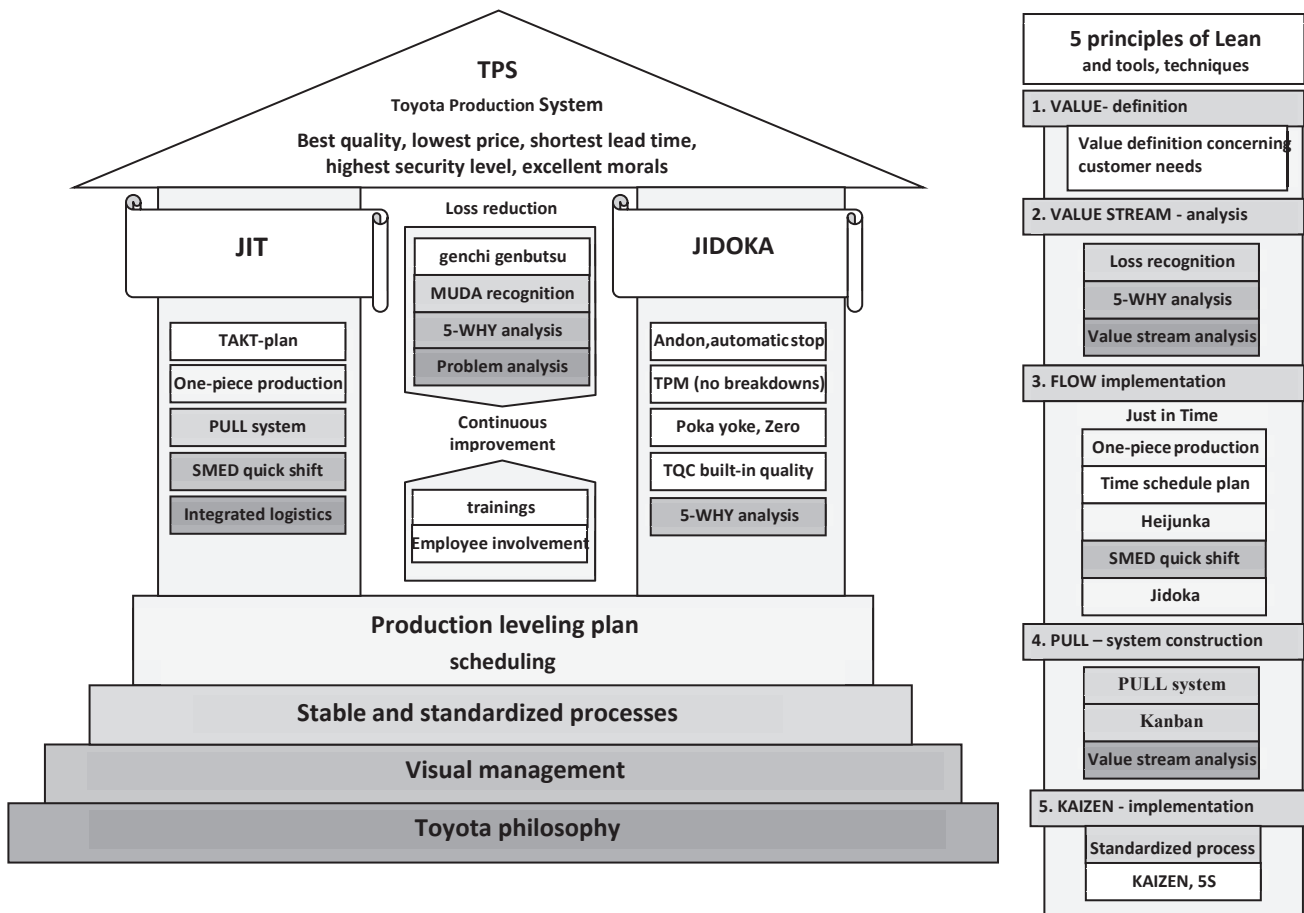
"A Lean organization is not thin or anorexic but fit and flexible, free from unnecessary burdens, manages its power well and develops it with training." "The meaning of Lean stems from the continuous pursuit to create more and more from less and less by eliminating losses."

However Lean principles came from the Japanese manufacturing industry. The term was first coined by John Krafcik in a Fall 1988 article, "Triumph of the Lean Production System," published in the Sloan Management Review Krafcik (1988).

Lean manufacturing, lean enterprise, or lean production, often simply, "Lean," is a **production practice** that considers the expenditure of resources for any goal other than the creation of value for the end customer to be wasteful, and thus a target for elimination.

In 1996, Womack and Jones released their book *Lean Thinking*. Based on their work, it is clear that Lean methodology includes the TPS and the Toyota method but in today's practice these two are not completely equal. (Figure 1) The principle as a concept is still developing and expanding, and not only in the Toyota System, for example Mike Rother and John Shook (2003) developed the so-called value stream mapping method from Toyota's material and information flow diagram, which is now considered as a fundamental starting tool in Lean improvement. However, it is important to note that Lean is **more than the set of tools**, since in order to apply appropriately the philosophy itself should penetrate the whole organization, and these tools do not exclusively belong to any principle or introduction step. Every tool can affect the entire system as well. (Figure 1)

Figure 1: Comparing the Toyota Production System (House model) and Lean



Source: own construction, based on Liker (2008)

1.2. LEAN PRINCIPLES

The first and most important thesis of Lean method is that it cannot be simply imitated or learned, but rather it **must be integrated into everyday practice**, which requires the company's organizational culture and the dominant approach to be radically transformed. It is important that each and every organization member should be committed towards Lean. The management can contribute to this if the top managers fully identify themselves with Lean philosophy and show their commitment to the employees. Consequently the company as a unit can work for the most efficient operation while producing higher and higher customer value (Vojnisek, 2008). The first and most important task is to create Lean approach as well as to develop a new organizational culture suitable for being accepted.

In the course of establishing Lean management it is also important to consider that Lean is not a sort of complex system rather more than that because it always tries to **apply the most appropriate method**, whatever it may be in practice (see Figure 1). The methods currently in use are grouped around certain Lean principles and this way form more or less well-defined 'subsystems' with some overlapping. The steps or in other words principles in a possible Lean improvement are the following based on Womack and Jones (1996):

1.2.1. Value

It must be determined what represents value for the customer and what does not in relation to a particular product or service. It makes sense to talk about value only if the price and date of that product or service meets the customer's needs (Womack and Jones, 1996). An objective of Lean management is to eliminate waste totally. In Lean concept this is defined as any human or other activity that uses resources but creates no value (surplus value) that the customer evaluates. For example, the customer is not willing to pay one cent more just because something is accounted skillfully or has been safely stored earlier. For him, these are not values, so these activities are losses. In Japanese the word 'muda' means losses or waste. In a Lean organization muda simply means "the enemy". According to LEAN Dictionary (Kosztolányi- Schwahofer, 2012), a broader meaning of muda is "any human activity that uses resources but creates no value". (Like unnecessary activities, unnecessary moves, unnecessary waiting, repair, control, even the necessary administration and direction.)

1.2.2. Value stream mapping

According to the traditional (otherwise mistaken) way of thinking value is created by the manufacturer or the producer. From this point of view, in many cases it is very difficult to determine what value is and what is not. Service providers often misunderstand their customers and assess wrong what the real value is for them. Determining what value really is should be made consciously and most frequently based on the dialogue with the customer. Based on customer needs, the value-added steps satisfying them become identifiable, and these together are called value stream. Determining a value stream is carried out by value stream analysis; and for the analysis of errors the 5-why technique is used which is one of the tools of built-in quality (JIDOKA). In value stream analysis, three types of activities can be identified:

- **Value-added activities:** activities that contribute directly to the features of a product or service which are evaluated by the customer.
- **Necessary but non-value-added activities:** activities that do not create value in the sense above, but for some reason, are absolutely necessary. For example some support activities or meeting regulations.
- **Non-value-added activities:** these are absolutely wasteful. Professional literature mentions several types of wastes (1. overproduction, 2. waiting for information, materials, transportation, 3. unnecessary or excessive transportation, 4. excessive, unnecessary or inappropriate activity, 5. stock, 6. unnecessary movement in the workplace or between workplaces, 7. faulty/reject product, 8. poor communication, 9. unexploited knowledge). The most important goal of value stream analysis is to reduce and ultimately eliminate the non-value-added processes.

1.2.3. Implementing Flow

The new concept must be implemented so the product could continuously move forward in the value-added process. Typical methods are here Just-in-time, one-piece flow, lead time planning, heijunka (production leveling), SMED (quick shift), and Jidoka (built-in quality). In this phase of improvement the task is to match subprocesses representing value together in a way that the flow of service should be maintained continuous. A common problem occurs

when regular and fixed actions halt a new way of thinking. For instance it is often impractical if following a traditional way of thinking, activities of similar types are placed next to each other, instead the processes in time sequence are organized, or perhaps in favour of a more even flow the actions are grouped in an unusual way. In other cases the spatial layout must be considered by drawing in the third dimension; or the tools, products must be redesigned so that the process should be easier, faster and more free from errors. In a value stream, continuous flow can be achieved with implementing the following steps in a sequence:

- Setting the target value stream.
- Eliminating 'mudas' included.
- Supporting the flow with Lean tools.

1.2.4. Creating pull production

The next element in Lean management concept is when the manufacturing process must be adapted to customer needs. The goal to reach is that the processes must be directed by real needs, thus avoiding harmful surpluses. Typical methods here are pull production (PULL, JIT), supermarkets and kanban. Only the thing and the amount should be produced what and how much the customer orders (Womack and Jones, 1996). The customer pulls the product from the company rather than the company is trying to push the products towards the customer. The process described above has a big advantage that stocks go away completely, which may result very large savings for the company. In the pull system how much time the customer actually needs to wait for the product to receive depends on the coordination of the processes in time sequence. Implicitly, only a faster than usual process is capable of performing in response time needed, which requires a number of accelerations, eliminations of shift and waste times. A high risk of implementing this concept lies in if there are no buffers (stocks) in the flow, then a breakdown of a department may affect the work of other departments since they are incapable of further production.

1.2.5. Continuous improvement and refinement

A characteristic feature of Lean concept is not only to focus on developing the "system" but also to expect continuous improvement during operation and the process never ends. Typical methods here are stable and standardized work processes, kaizen and 5S. One of the most important tools of implementing Lean management is the so-called kaizen which denotes on the one hand continuous improvement and on the other hand the consistent application of the method also means the uniform involvement of employees and managers into the well composed background system that properly and promptly evaluates, motivates, and applies improvement recommendations. Those who agree with the kaizen principle have the opinion that a lot of small improvements bring an outcome pointing more ahead than some big improvements (this is also referred to as the principle of small steps).

One of the biggest drawbacks of this method is that it can be often implemented only if we change the entire organizational culture.

1.3. CHALLENGES AND OPPORTUNITIES CONCERNING LEAN

The setup of Lean Production System cannot be interpreted as a character of improvement project; it is more likely that the decision is final and requires complete commitment. Most

Lean improvements need long-term thinking, commitment and huge stamina. In many cases they do not necessarily return in the short term. Introducing a certain tool such as 5S is not difficult, however, important results can only be achieved if used together with other tools; it is not long-lasting on its own and brings along low results.

If a company wishes to be really efficient, there is a need for coordinated organization, shared goals, philosophy, and consistent management which does not select between different methods of increasing quality and efficiency concerning implementation.

Errors possible during implementation can be classified in three main groups (Leancenter, 2007):

- errors at management level;
- difficulties at employee level;
- external obstacles.

A typical **management error** is when the managers do not recognize the importance of Lean, if they are not committed enough, if they only see targets of prestige or during improvement they look at it with a project approach, and if the feedback assessment is inappropriate. A further problem may arise if in the hands of the participants there is a lack of power needed for a change, or if the responsibilities stop at some points and therefore unwanted logistics barriers (discontinuities) appear.

In the second group **employee level difficulties** are primarily about bad mentality, attitude that is not only the employees' fault, it may also be a management error, social or other external circumstances, bad experience, prejudice and mistrust.

The third group means **external obstacles** that may bring difficulties for the operation of the advanced system, for instance errors of the supplier system could threaten operations with minimum stocks.

After all of these it is very important to think over whether Lean management can be applied in case of service organizations or not. *"The majority (of the researchers) states that the basic principles of Lean are universally applicable, because Lean methodology is focused on the process itself and not on the process's output in the first place."* (Caterall, 2008)

"...It is essential to investigate in the first place about the opinion presuming in the scientific community whether and if, to which extent, Lean is applicable to service industries." (Damrath, 2012)

1.4. THE CASE STUDY METHOD USED

In the following applying the case study method we will look at the case of an imaginary logistics service provider how Lean approach can be used to improve service processes. Due to limited space, in applying the method **our target is to analyze one main process** instead of presenting a holistic practice. *This study aims to show that Lean approach can also be applied in case of service processes and by which correctional actions can be defined in the selected processes.* Of course, **the direct application of Lean tools presented earlier is not practical in services; a flexible interpretation of tools and concepts would be more appropriate instead.**

Grönroos (2000) states it is hard to imagine that Lean method can be applied in manufacturing and services in the same way since they have different characteristics. Yet Swank (2003) claimed that Lean can be definitely beneficial for most service processes.

Evidently, as we have previously seen considering process characteristics on its own does not contradict the application of the Lean approach. Based on this, it is necessary to take the major differences into account:

- **Some concepts may be missing**, such as PULL principle since services themselves cannot be interpreted without any order.

- **Some categories will have different meaning**; think about for example rejects or stocks which should be occasionally defined in different ways.

Hereinafter, we will follow the logical outline (“steps”) presented earlier as we interpret the **principles and methods** of Lean philosophy **regarding services** including an example of a logistics service provider (freight forwarding) business.

2. RESULTS

2.1. CREATING LEAN PHILOSOPHY

As the first and most important step of creating Lean philosophy and as the base for Lean management the Lean approach basics should be created for the company, and for this purpose a new organizational culture should be formed. What is meant by this new organizational culture? First, this means that it is practical in the company’s operation if every task appears in a standardized form with an appropriate technical background. On the other hand, it is obvious that having suitable information, the managers must be committed to these changes, and accordingly they have to start training the employees to take in the new approach. Introducing the 5S method may be a good starting point to accommodate this new approach **for a service provider company**; this appears in every work phase and can be followed by everyone.

5S elements to the creation of “well organized” workplaces (Vojnisek, 2008):

- **Seiri**: Separating necessary and unnecessary things. Removing unnecessary working tools from individual sites.
- **Seiton**: Based on priority working tools are placed in the work area depending on the usage frequency. In our case this generally takes place in the office environment but this should be done in the warehouse and in the maintenance department as well.
- **Seiso**: It means cleaning out the work area with the intention of leaving behind a clean and organized area at the end of each shift. The goal is to have everything in a designated area, in its place and function (ready for use, in perfect condition).
- **Seiketsu**: Standardizing the three steps above in everyday use.
- **Sitsuke**: Keeping up existing improvements. It is important to underline that this arranging and cleaning should be gradually integrated into the daily routine.

Creating the organizational culture desired is not a single task rather than starting a process instead, meaning **one of the most important and essential conditions for implementing and maintaining** Lean method. Lean culture goes beyond production and car manufacturing, the values and beliefs inside serve the base for applying Lean principles in any sector. (Imre, 2011) On the one hand the organizational culture desired is based on the requirements of the **learning organization** (Garvin, 2008) (see the first three aspects), on the other hand

concerning the continuous improvement concept it is much more than that (see the last aspect, Imre, 2011) The aspects summarizing the organizational culture desired are:

- **organizational culture supporting continuous improvements** (in which the focus is long-term way of thinking (Liker, 2008), the importance of human relationships, respect, commitment mainly of managers, co-operation, protecting and taking care of workplace environment, continuous adaptation skill, customer value in the focus, innovative intellect);
- **supporting management** (in which the focus when managers look at colleagues as equal partners, besides hard requirements giving a high degree of freedom and responsibility, integrating attitude, operating a recommendation system, process concept, decision-making on consensus, personal participation in problem solving, (Liker, 2008), attitude conveying instruction and organization goals (Liker 2008; Graban, 2008), attitude assessing and reacting standardized tasks, rewarding results, revealing and correcting but not punishing errors);
- **development learning and knowledge transmission process** (two-way open communication channels, intense information flow, right for reacting in both ways, meetings requiring regular preparation, use of feedback and visual management tools, continuous colleague development, peer learning, identifying errors and self-criticism, organizational learning)
- **finding opportunities for continuous improvements** (strive for perfectionism, seeking co-operation with other supply chain members, need for eliminating losses, appreciate the organization's internal environment).

Hereafter, considering the steps of a possible Lean project we follow the logical structure by Womack and Jones (1996).

2.1.1 Value

It is necessary to define what represents value for the customer. For customers service performed according to the parameters of agreements means value. Thinking further value addition can be interpreted if we develop service as close to customer expectations as possible for example by creating a shorter delivery cycle. In a transportation activity value is exact transit time that is exact delivery, giving correct information, avoiding any delay, fast administration including fast reaction to the request for quotation as well. The personal communication of the contact person can also mean value since in case of his error due to his any recklessness the customer is unwilling to pay partly or fully. The features of defining “**service value**” are as follows:

- The product is in the focus of production while in services value is represented by an **activity executed in an impeccable way**.
- In case of services, the most important value is having **information**, and the human resource handling it. Obviously the result is utility perceived by the consumer.
- **Services cannot be stored**; they provide value only when the consumer has actually received them. (Gelei - Gémesi, 2010)
- **The consumer is involved** in the process which he will evaluate then.

During determining values the interpretation of wastes (mudas) can be seen in Table 1 according to Lean principles (based on Bichen – Holweg, 2009; but rewritten in a different way):

Table 1: Types of wastes and errors in production and services

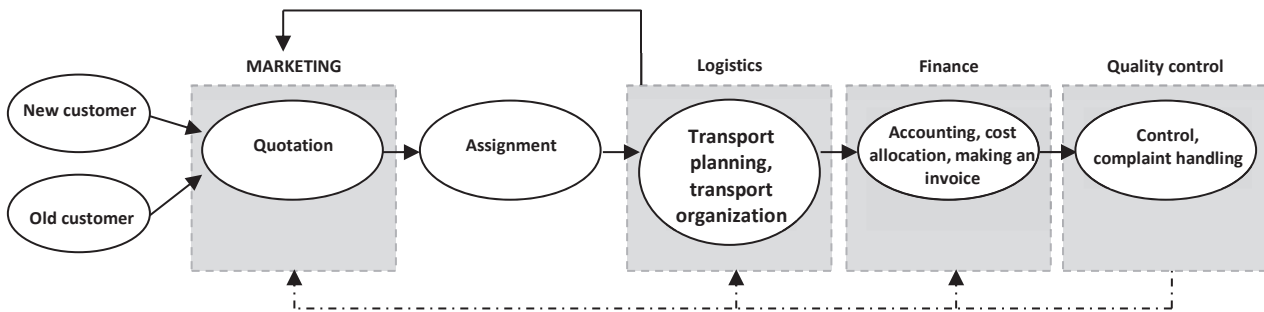
7 types of wastes in production (Womack- Jones, 1996)	7 types of wastes in service
overproduction (not for needs)	unnecessary duplications (not obligatory)
unnecessary waiting (for the next step or machine etc.)	unnecessary waiting (for the next step or anything which means unnecessary delay)
unnecessary transportation (transporting products which does not necessarily create value)	unnecessary transportation (transporting customer or colleague which does not necessarily create value)
unnecessary activities (e.g. control, administration, direction)	unnecessary activities (e.g. control, administration, direction)
unnecessary storage (waiting for future needs)	None (no errors like this)
unnecessary movements (concerning products)	unnecessary movements (concerning customers)
faulty product (cannot be sold and needs new work, repairing or re-production)	faulty service (not paid and cannot be always repaired, sometimes fatal)

Source: own construction

3.1.2 Value stream mapping

In value stream mapping the most important goal is to recognize and eliminate non-value-added processes as soon as possible. A theoretical scheme for logistics transportation is the following (Figure 2)

Figure 2: Main process of transport organization



Source: own construction

In services particular subprocesses often take place logically in chains, however, it is worth paying attention to the hierarchical relations of individual processes as well.

During mapping of the process hierarchy the following five levels can be examined.

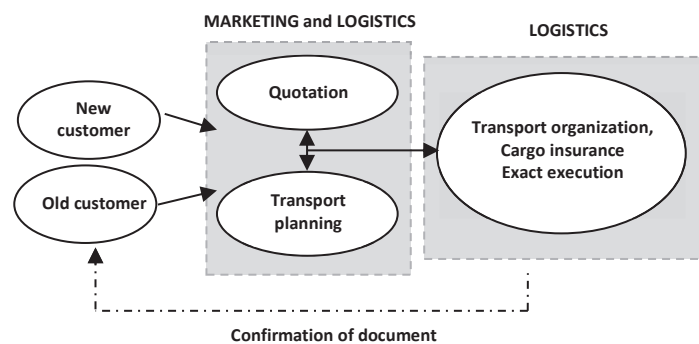
- Business processes;
- Main processes;
- Subprocesses;
- Activities;
- Operations.

A **business process** can be a complete transportation process. Within this the **main process** is transport organization. The **subprocess** within that can be the customs control assignment. An **activity** is issuing an assignment inside the subprocess, and finally a simple order is marked on the registration form at the **operation** level. The key factor regarding the value stream is as

a fast response as possible depending on the information contact between logistics (transport organizing colleagues) and marketing departments because sales managers need their professional knowledge. This chain above has many participants, and typically each of them has to wait for other participants' work and documents. They are usually waiting for faxes, e-mails, feedbacks and calls of one another. A frequent example is when the transport organizer asks for some additional document from the customer but the answer does not come immediately, so the delivery task may halt for several days causing significant waste. Of course, other mudas may occur and should be analyzed and interpreted in categories for every element of the examined process and for any other process.

Concerning the appointed main process the following figure (Figure 3) presents only the value-added processes from the customer's point of view. Some structural changes were also made. As shown the process is much slimmer than earlier. (Figure 3)

Figure 3: Value stream



Source: own construction

One can see that all the processes which do not give value for the customer were left out from the figure (Figure 2). Furthermore, we can observe that in the old process the sales manager has unnecessary work when he consults with the customer in advance and consults again after consulting with experts. **A series of indirect communication should be eliminated** with the two-way communication (Figure 3) recommended in the new value stream or with further **standardized communication**. With these solutions it can be avoided that the sales manager should wait for the fee calculated by the transport organizer, and the customer for the quotation.

2.1.3 Implementing flow

In carrying out the process flow (our goal is to analyze this flow) we reveal the potential mudas in the process, and to eliminate them we think about Lean tools. In value stream mapping we are trying to eliminate the identified mudas with work organization or other Lean tools. Our recommendation for work management on the one hand supposes an instant two-way communication contact between marketing and logistics. This standardized data sheet (Table 2) promotes the communication between sales and transport organization and can be used in any other area.

Table 2: Standardized communication data sheet

Basic data			
Customer identification (name, code):			
Transportation data			
Pick-up location:			
Delivery location:			
Pick-up deadline:			
Delivery deadline:			
Quantity of goods:	Weight:	Size:	Code:
Specialties:			
Offer			
Transport conditions, specialties	Express transport	Normal transport	
Transport fee (EUR)			
One-way cargo insurance (EUR)			
Offer accepted by the customer			
Express			
Normal			
Cargo insurance required (yes / no)		Conditions:	
Note from the customer:			

Source: own construction

This sheet has been filled in by the sales manager directly (even in electronic form) on data collection and is automatically given to the transport organizer who edits it and based on that a ready-made offer can be sent to the customer. With the standardization of data saving rules this sheet also functions as a document for the archives and controls.

2.1.4 Creating pull service

In terms of transport organization services the implementation of the pull principle is automatic since the main character of services is that the activity does not start without the customer's order. The feature of transportation is that the process should be initiated by the customer with his order; however, physically the actual execution starts only at the time of the transport organization plan.

2.1.5 Continuous improvement and refinement

According to the continuous improvement concept of Lean, activity and motivation should be maintained at a high level. In favour of this employees should be involved in the standardization activities and analyzing and improving the areas belonging to the individual activity task groups should be done in the framework of working in small groups.

Creating **improvement groups** (teams) must take place in a way that in each group there should be a manager and representatives from different areas such as marketing, logistics, finance, warehouse, etc.

The meetings of improvement groups should be organized regularly for instance weekly yet this cannot substitute a brainstorming and rating system. It is extremely important that despite group work an assessment, qualification and motivation (rewarding) system based on individual ideas should not disappear.

CONCLUSION

As one can see from above, the competitive advantage gained by Lean philosophy guarantees a significant market share but in return it expects hard, consistent and precise work at every level of the company. Its implementation is a committed job and requires continuous investment.

In the analysis, we focused on one small detail of the process, however, in a real environment this should be extended to the entire company. In our study we wanted to show that not only the classic mass production companies follow the example of Lean management but also small **manufacturing** and **service** companies. The reason for Lean's 'popularity' is that its adaption **improves several dimensions of creating customer value at the same time**. *The introduction of Lean management is about more than applying Lean tools or even concepts; it improves the entire organization, regardless whether the given result is called Lean or not.* **We can conclude that the applicability of Lean is determined by the character of the process and not by the industry.** The example presented also shows that the improvement can be successful in any sector although the **tools should be adapted to the special features of the industry and the organization**, and the **thinking methodology described above should be integrated into the organizational culture**. To the success and maintenance of Lean transformations there is a need for an organizational culture ready to accept the new approach.

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