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LEAN MANAGEMENT – SYSTEM ASSUMPTIONS AND BARRIERS TO IMPLEMENTATION

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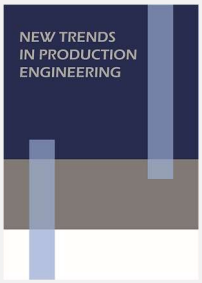

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Abstract. In recent years *lean thinking* (also referred as *slim*) increases its popularity not only in industry, but also in the entire business world. There are many confirmed effects demonstrating the high effectiveness of this philosophy: a clear improvement of economic indicators, an increase in current satisfaction and the acquisition of new clients; better, stable quality of offered products and services; efficient organization of production; more effective management; high productivity of work and production; minimizing the costs of production and storage of stocks. Why is *Lean* implementation in our domestic conditions not easy and sometimes ineffective? In this study we will try to answer these very important questions.

Keywords: Lean management, system, just in time, barriers

LEAN THINKING BASICS

Lean Thinking is a style of being, a philosophy and a business methodology. The aim of implementing the lean principles is to create a new way of thinking that must be permanently rooted in the minds of employees at all levels. It's mainly about well-thought-out organized and systematic human activities. Providing more benefits to clients and society while minimizing or completely eliminating losses at all levels of the organization. It is also *Lean Enterprise* – supporting the growth of customer satisfaction, the use of innovative products and services, to strengthen customer satisfaction while minimizing costs (Womack and Jones, 2003).

The basic element contributing to the company's success in the demanding and competitive market is minimization of production costs and maximization of the effects having a direct impact on the quality and satisfaction level of the final recipient. Achieving these goals becomes possible only when the managers of the company are aware of the fact that each, even the smallest auxiliary process, as a component of the finished process and product is important in the production process. The elements of the process that need to be analyzed and optimized are many. Anyone aware of his responsibility may have a direct contribution to the market success of the company he is an employee.

The implementation of the *lean* concept is based on the reorganization of all factors related to the work of a given enterprise: time, structure and hierarchy of design, administrative and implementation activities, raw material stocks, production stocks, finished product stocks, device functionality, internal infrastructure, material supply system, and above all effective the use of employees' energy, both motorized in production and emotional, leading to a significant increase in creativity and motivation. Such an approach leads to the elimination of everything that is unnecessary in production processes and management as well as performing only the necessary activities in an effective manner. The lean method is oriented towards the optimization of management and production processes, capturing and eliminating all wastage which is a very common phenomenon in a traditionally managed company, which does not operate on the principles of *LM*.

The idea of *Lean Manufacturing* was based on the *Just in Time* strategy, and over time it has evolved into one of the most effective business management systems in the world. It is often referred to as *Lean Management* when it is identified with a set of rules concerning not only production but also management of an organization or enterprise. The implementation of the assumptions of the above system, also called "slim", led to the creation of the philosophy of *Lean Thinking*, according to which the priority of the company's interests are the needs of customers (Grudzewski and Hejduk, 2004).

In each production enterprise, the most resources are spent on manufacturing processes and they should be given special attention. The production cycle requires that the whole stream of raw materials and products be passed in stages by all production departments. The processes and associated flows are usually very complex and depend on many different factors. Undoubtedly, the most important of them are those whose complexity and time-consuming influence the flow processes most. It is logical that the control of the material and parts stream should be based on basic logistic principles. In this approach, it is mainly about the principles that guarantee the continuity of production, and this is: the orientation of the right product, the right orientation, the right orientation, the right place orientation, the right time orientation, the right customer orientation and the orientation on the right price (Kolasińska-Morawska, 2011; Nadolny and Czerwik, 2017).

In the organization of production processes, solutions supporting the minimization of the total costs of running business are increasingly used, while minimizing the time needed to implement a given process. An example of such solutions is the use of intermediary companies in the employment of qualified staff, or outsourcing of external processes, which is increasingly popular among Polish companies, where the entity responsible for fulfilling the role indicated in the contract is responsible for their performance and results.

Many companies are struggling with irregularities that disrupt the production process. The reasons for this state should be seen in the poor organization of work. The problem grows with the company's expansion and development and with the increase in the number of employees. The most often mistaken is the improper self-organization of the company – the lack of standards or procedures. Usually it is dictated by the habits of employees acquired during many years of practicing the profession and stages of company development. In addition to disturbances at production sites, other problems can be seen very often, especially in auxiliary processes. Examples of an auxiliary process include interstate transport, part transfer, as well as machine retooling. Equally important and often committing, it is a mistake to create too large stocks of raw materials, semi-finished or finished products.

One of the basic issues associated with lean management is wastage - from the Japanese Muda (Figure 1).

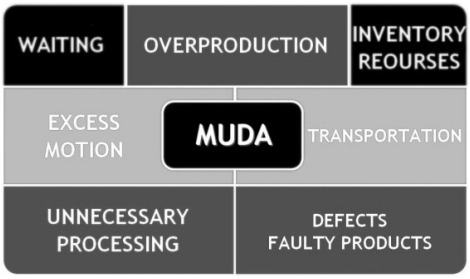

Fig. 1. The main causes of waste – *Muda*

Source: Own elaboration based on https://online.kettering.edu, http://flevy.com

It mainly concerns all activities that do not add value to the product and customers. Waste also results in delays, problems with quality, increase in costs and, as a result, lack of customer satisfaction. The Lean Manufacturing concept is generally aimed at organizing, streamlining and increasing the efficiency of procedures and processes operating in the company. During its implementation, it is necessary to make an in-depth assessment of the activities included in the processes due to their purpose and usefulness, and then to optimize them. An excellent

motto in the implementation of the lean concept may be the statement of P. Drucker: "*There is nothing so useless as doing efficiently that which should not be done at all*" (Wiśniewski, 2010).

The origins of *Lean Manufacturing* date back to the turn of the 18th and 19th centuries. In those days, the focus was mainly on the technical side of production, on the development of technology and mechanization of manufacturing solutions. Not enough attention was paid to what was going on during the process or between processes. There was no thought about how the workers work and how they organize their tasks (Pawłowski 2010). The precursor of "Lean" production is Eli Whitney – an American industrial revolutionary, a cotton ginning constructor. Another idea of Whitney was the use of the assembly line in series production. Nearly 100 years later, the same idea was successfully implemented by Henry Ford, considered by many authors to be the first practice of *Lean Manufacturing* (www.bankier.pl). H. Ford used an innovative approach in production management in his car factory. The focus was on process automation. The aim was to develop standards, methods of efficient management and proper distribution of production sockets. Workers were deployed in the way most effective course of the process. Using the experience of Ford, the managers of the Japanese Toyota Motor Company factory, Taiichi Ohno and Shigeo Shingo, have developed the Toyota Production System, which consisted of minimizing stocks and production of "*Just In Time*". After implementation, this system significantly reduced losses (Hay, 1988; Hodges and Allen, 2002; Imai, 1997).

The philosophy of Lean Management assumes that the right elements always have to be in the right amount, in the right place and at the right time. Just in time (Fig. 2) is a management system that allows you to get the most out of your business. It is also based on continuous process improvement, which ensures optimal material flow and eliminated waste. The overriding goal of all undertaken activities is the production of goods, services or products that will arise according to demand, as a result of an optimal production process, which is the result of good planning and control. It is important to reduce or completely eliminate inter-operational and pre-production stocks as well as to minimize or completely eliminate activities that do not increase the value of the product. This leads to the shortest possible production cycle (Antos and Antos, 2013; http://flevy.com).

Fig. 2. The main principles of the *Just in time* system
Source: Own elaboration based on https://online.kettering.edu, http://flevy.com

In order to optimize production processes, focus on the three basic problems identified by the abbreviation 3M (in Japanese) (Konosala, 2013): ***Muda*** – downtimes, production waste, unnecessary movements and wastage, such as: excessive resources, non-value added activities and unused time and skills of employees, ***Muri*** – excessive machines, employees and processes loading that lead to fatigue of employees, as well as faster wear and cyclic deterioration of machines,

Mura – irregularity of operations, management of the flow of resources in such a way as to ensure regularity, lack of downtime.

One of the basic *lean* tools is 5S, it is a set of techniques and methods aimed at establishing and maintaining high quality workplaces. 5S is directly related to the proper organization of the

work environment, improvement of the company's organizational culture and increases the efficiency and stability of processes. For this reason, 5S is treated very often as a key *Lean Management* technique, implemented in manufacturing and service companies as one of the first, constituting the basis for further activities.

In the 5S system, 5 consecutive steps can be distinguished, with the name of each of these steps beginning with the letter S (Figure 3). It should be mentioned here in turn (Hirano, 1995; www.isixsigma.com): Sort/Separate (Japanese Seiri), Set in order/Straighten (Seiton), Sweep/Shine/Scrub (Seiso), S - Standardize (Seiketsu), S - Sustain/Self-discipline (Shitsuke).

In order to properly implement the principles of lean functioning, apart from a thorough diagnosis and system design, an appropriate team of people is needed, especially those responsible for monitoring the operation of the lean – the Lean Manager. Proper selection of a lean manager and its proper fixation in the company's structure is crucial for the success of the entire undertaking. If we agree that the success of implementing the lean program depends to a large extent on creating the right atmosphere and building a group culture to eliminate losses, then the role of Lean Manager in this area cannot be overestimated. It is very important that he is characterized by high professional knowledge and numerous personal predispositions and characteristics. The main ones are presented in the diagram shown in Figure 4.

Fig. 3. Five S – 5S principles

Source: Own elaboration based on https://www.isixsigma.com

Fig. 4. Features of Lean Manager

Source: Own elaboration based on https://online.kettering.edu, http://flevy.com

POPULAR BARRIERS AT IMPLEMENTATION

All the rules listed above are logical and undoubtedly can improve the management and operation of the company. However, there are companies where *Lean manufacturing* implementation does not bring the expected results. What are the typical reasons for this?

Knowledge of *lean* methods, techniques and tools is important but not critical to achieving success. The decisive factor is the management system and culture. When discussing the successes and effects of implementing lean management, there is usually not much talk about how great is the relationship between the success of *lean* implementation and the attitude and

mentality of employees - which has never been discussed before. Literature also does not devote much space to the failures of implementing *lean management*. Therefore, the owners and managers, not being aware of the complexity of the problem, believe that *the Lean philosophy* from the moment of implementation (like a new, more efficient, device) will bring tangible benefits, and especially that these benefits will remain stable. Unfortunately, this system does not work like a new machine, it requires constant commitment, constant attention and actions. After implementing the system, the effects appear, but for long-lasting and stabilized effects you usually have to wait and it's not a few weeks or months but usually a few years. The philosophy of *lean management* requires many long-term observations, thorough analyzes and careful preparations before its adaptation, after implementation requires observation and further thorough analysis and then continuous further improvement activities, enabling the system to maintain its functioning and benefit from it (www.log24.pl).

The most important problem that most companies struggle with the longest time is the problem of employees' attitude, lack of their involvement or even resistance to change. In order for the system to be able to function, commitment should show all employed persons in the enterprise, at every level of the organization, from the president or director to the person cleaning the production hall. This commitment should primarily show managers and middle personnel. This is very important because, as is well known, the example “goes from above”.

You can explain it so that subordinates can easily notice what is important for superiors and themselves, in their own interest, pay more attention to it in their case. If the superiors themselves (in relation to themselves and others) do not follow the rules they require from their subordinates, then the responsibility and the mechanism of proper, optimal action does not work, the *lean* system does not start to work and does not bring results. When considering the issue of commitment, one should mention the importance of two (similarly believed) words: support and endorsement. The education and motivation of employees are also a key issue. (www.leanmanagement.pl).

Very serious reasons for problems with the implementation of lean management can also be found in cultural differences. In Western civilizations, the *Lean* implementation takes place with resistance incomparably greater than in Asia from where the system originates. This is due to a different mentality. It is the result of a different perception of the need for systematic improvement, engagement and seeking improvement. Another problem is the lack of teamwork, understanding of the environment and the need to solve problems together.

The basic problem in the implementation of all pro-quality systems are usually employees who feel resistance to changes. In many traditional companies, the employee is still bad treated very often. Such behavior is typical among managers who obtained their positions through vertical promotion. They are usually great practitioners. Unfortunately, at the same time, they are focused on good performance and do not show elements of perspective thinking. In such a situation, for most of their employees, work in a given company is not a part of life, but only a sad obligation that gives money for a living (www.log24.pl).

Our Polish approach to *Lean* systems is characteristic. We perceive *Lean* as a tool, as a procedure, not as a philosophy, as a way of thinking and acting. We expect tools that, after implementation, will give immediate and lasting results and we do not change our own thinking and valuing system. We pay too much attention to the procedures and expected results, not recognizing the role of the employee. This motivated, effective employee is the foundation of *Lean* systems and future success. During the implementation of the *Lean* system we expect immediate results and if they are not, or are not satisfactory, we do not look for the causes and do not improve the system we are implementing, we only return to the previous management model often. The *Lean* system requires time for effective action, requires consistent actions, monitoring, strategic, analytical thinking and the will to self-improve. During this time, the attitude of employees is slowly modified, trust in the employer increases and awareness of their own importance and role in the system. Each enterprise is different, it has its own specificity. And the classic methods do not always give the best solutions quickly. Lean usually reveals many unpredictable effects during the implementation of Lean. Obtaining

unsatisfactory results is usually not seen as a valuable experience bringing us closer to perfection.

A big problem is also the attempt to implement *Lean management* systems in enterprises in a weak financial situation. They usually expect quick and spectacular results. Unfortunately, their situation usually results from poor management and ineffective processes. This is often accompanied by serious dissatisfaction and conflict with employees. In a situation when the new system is based on motivation and ordering relations with employees, when it is mainly from the attitude and attitude of employees depends on the achieved effect, in the situation of a failing and conflicting company will not be good results, which will probably accelerate the company's downfall (www.log24.pl).

CONCLUSION

Implementation of *lean management* and *lean manufacturing* systems in an enterprise requires time, many observations and thorough analyzes. These systems are usually based on a fundamental change in the philosophy of action, on education and support for the attitude towards continuous improvement and own involvement of employees in the functioning of the enterprise. The barriers that cause the biggest problems are diverse. In the case of owners and managers of companies, it is usually a misunderstanding of the philosophy and functioning of the system and the expectation of immediate results. Very important is the lack of focus on building awareness and the lack of appreciation of the role of a ordinary employee in the functioning of the company. In the case of employees, it is a completely different mentality than in Asian countries and usually bad habits and lack of understanding of their own responsibility and the role of all employees in the creation, operation and successes (or failures) of the company.

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