

## INCREASING THE COMPETITIVENESS BY „LEANING”

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**Abstract**

Numerous definitions regarding the different levels of competitiveness can be found in the specialized literature. This treatise deals with the effect of Lean on the competitiveness, from its point of view, the corporate-level as well as product-level competitiveness are decisive. Several competitiveness researchers agree that the leaning practices of Lean enhance the corporate-level competitiveness but the results expected from leaning and the actually realized results do not correspond with each other fully in most cases. Its reason is that Lean, by itself, is not able to solve fundamental production problems. However, there is no accordance in the question what causes the growth of competitiveness exactly. Typically, the so-called “hard” technical practices are highlighted, albeit the accentuation of “soft” factors becomes more and more justified, in my opinion. Lean increasingly outgrows the production system of corporations, every process of the corporation can be leaned, even in case of a corporation performing service providing activity as well.

### 1 From the competition to the competitiveness

One of the most determining elements of the market economy is the competition, perhaps the most determining. In the Hungarian language specialized literature, Attila Chikán is credited with one of the best known and most accepted definitions dealing with the competition, competitiveness and its measurement. According to this definition, the completion is such an activity lasting between two or more operators among given rules which is aimed at gaining advantages against each other [2].

The competition can be characterized based on levels and functions being separable well from each other and can be interpreted at all levels of the economy. So, we can speak about competition between regions, countries, moreover cross-border areas, integrations as well. In the classical sense, of course, the competition is wont to be interpreted at level of corporations.

The concept of competition can also be described in more detail; this concept already contains the advantages and functions arising from the competition as well. The welfare function of competition is that it allows the customers to choose such way at spending their revenues that the welfare can occur which is as great as possible. By means of the competition, a kind of allocation also comes to fruition; the corporations carry out investments relating to such products and such services which are demanded thus the production can adjust to the customer demands. The competition enforces the reduction of production costs, expenditures to a level which is as low as possible i.e. it enforces an effective operation of the corporations. And, by means of the income distributing function, the operator acting with the best performance can reach the highest profit [9].

In the market economy, the competition is a continuous fight in order to satisfy the customer demands at a level which is as high as possible. In this competition, those enterprises can be successful that have such abilities, capacities which are possessed by a small part of competitors. The different experiences, devices, organizational culture provide a practically endless number of

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ways to earn competitive advantage; such areas can always be found where a company would be able to renew.

So, the competitiveness and competencies are inseparable from each other; the competitiveness depends on that how the nations and corporations manage the totality of competencies in order to realize as high profit as possible. There are the so-called core competencies and core distinctive competencies [8]. The core competencies play a role in keeping the costs at an appropriate level in order to ensure the proper profitability of company. Conversely, the core distinctive competencies have such abilities which ensure the sustainable competitive advantage for the company because the competitors do not possess them; these are unique and can be copied with difficulty.

But what does the competitiveness mean? To determine it is not easy, there is no such a unified definition in the specialized literature which is accepted by everybody. The differences basically come from that the definitions apply to different levels of the competitiveness. As we can speak about competition between products, companies, regions, countries, cross-border areas, so we can speak about their competitiveness as well. According to Attila Chikán, the country-level competitiveness means “the ability of a national economy that it is able to create, produce, distribute and/or provide products – according to requirements of the international commerce – in such way that the proceeds of its own production factors grows in the meanwhile” [3].

Attila Chikán and Erzsébet Czakó are credited with the widely accepted definition concerning the corporate-level competitiveness, according to which “the corporate competitiveness is the ability of a company which can permanently proffer the consumers such products and services, by complying with the norms of the social responsibility, that the customers are prepared to pay for, rather than for products (services) of the competitors, under conditions ensuring profit for the corporation. Condition of this competitiveness is that the company should be able to sense the changes in the environment and within the company and should be able to adjust to these changes by fulfilling the market competition criteria” [4].

The next table (*Table 1*) shows those factors related to the corporate-level and product-level factors which are determinative from the point of view of the treatise.

*Table 1. Factors related to the corporate-level and product-level competitiveness*

Level	Competitiveness factors			
	Long-term successful operation and its conditions	Most important groups concerned	Risk-takers	Point of reference
Product	Consonance of the customer demands and the decisions made Cost<Price	Customer Company	Top managers	Products of domestic companies, products for export and import market
Company	Profitable operation and the ability to change	Owners Top managers Employees	Owners Top managers	Domestic and international companies

Source: Own edition, based on [7]

## 2 Effect of lean on the competitiveness

Krafcik is credited with that the concept of Lean got into the common knowledge. In 1988, he described the production system of the most outstanding vehicle manufacturers by means of this concept. In the 1990s, there was a significant change compared to the period of Just In Time, the former approach resting upon adapting some practices was replaced by an adaptation according to program, the Lean production has appeared in a wider corporate circle. But, in many cases, the Lean production means only the joint application of JIT, TQM, AMT (Advanced Manufacturing Technology) and TPM (Total Productive Maintenance) [20].

Since the 1970s already, treatises verifying the effect of leaning have been made but the really extensive corporate application is still yet to be spread until now. Holweg examined this phenomenon in one of his treatises and he determined that companies of the Western World are not really forced to change. In that treatise, he phrases, in pretty simplified terms, that the lean practices lead to an outstanding performance [11]. If we review the literature assessing the leaning from the point of view of the competitiveness then this statement can be considered to be confirmed. Shah and Ward performed a detailed research in this topic and they unquestionably confirm it citing essays of numerous illustrious authors.

Albeit, the Lean practices can verifiably contribute to growth of the corporate competitiveness but the total consonance of the expected results and the actually realized do not come to fruition. This is possible because the company reorganizing the production system based on the Lean approach waited for a miracle. However, Lean, by itself, is not able to solve the fundamental problems of production [5].

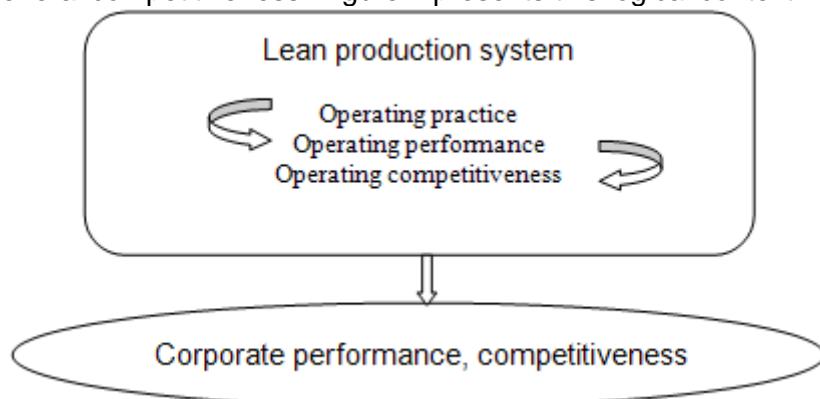
There is no unified standpoint regarding the Lean devices, it can be said, overall, that the researchers find more and more "leaning devices" [17]. The following devices are mentioned in most treatises:

- continuous development;
- cross-functional labor force;
- full quality management;
- JIT;
- decrease of batch quantity;
- preventing maintenance;
- pulling system.

## 2.1 Lean production system

The attitude of production system has a significant influence on the corporate competitiveness. In the traditional systems, the accommodation realizes through the stock which is absorbing the fluctuation of demand and smoothing the load of processes. In this way, however, the inventory is extremely high between the processes, the balance is upset, and the production is characterized by redundant tools and surplus labor force as well.

In the Lean production system, the stock does not mean the source of accommodation, the accommodation realizes through the lead time. According to Voss, the leaning, as one of the best practices of the production, can lead to an outstanding performance and a competitiveness improving ultimately [18]. Considering the connections of production system, it can be stated that the operating performance is crucial from the point of view of the operating competitiveness and the operating practice is crucial from the point of view of the performance so the relation between the operating performance and the operating practice has a key importance considering the improvement of general competitiveness. Figure 1 presents this logical context.



*Figure 1: Relation of the leaned production and the competitiveness*

Source: Own edition, based on [19]

After leaning the production, the lean production practices improve the performance of production which contributes to the improvement of corporate performance and competitiveness through increasing the competitiveness of production.

The benefits arising from making the production “Leaned” are the following based on the sources containing the most significant empirical researches ([5]; [1]; [12]; [10]; [14]; [16]; [15]; [6]):

- the cost of production decreases, the product quality improves;
- the delivery performance improves (lead time decreases);
- the flexibility increases (lead time decreases, batch quantity decreases);
- the quantity of stock decreases, the turnover rate of stocks increases;
- the need for work decreases;
- the administrative burdens decrease;
- the motivation of employees improves.

## 2.2 Lean management

The application of Lean for complete corporate processes is increasingly widespread. The Lean system goes beyond the production activity of mass production corporations and it also appears in the processes with complexity differing from mass production, e.g. in organizing the services, in the knowledge industry, in activities of office, in the logistics, in the public sector and in the health service. The “opening” of Lean has been spectacular since the end of 2000s.

Nowadays, Lean is recognised as a company organization and company management system, the aim of which is to increase the efficiency. Lean elaborates the corporate activities primarily based on what the value is for the customer. Lean reckons those things as loss (wasting) which do not generate value for the customer and which is not paid for by the customer. Lean increases the efficiency of workflows by preventing, ceasing these losses or decreasing them to the minimum. So, Lean can practically be applied in case of corporations performing any kind of activities. Lean systems, regardless of where they are applied, shall be built according to 5 important principles which are the following [21]:

It is required to determine what means added value for the customer. We have to know exactly what the customer demands are. The demands shall be described by correct indices since these ones form a base of the continuous improvement later.

A process of value creation shall be elaborated. We have to determine the present situation and the future position to be reached as a goal.

This process shall be maintained in such way that the materials, accessories, information can flow unhindered. Losses shall be filtered out from the process as much as possible.

By means of the processes elaborated in this way, a product shall be produced just when, in such a way and in such a quantity as it is demanded by the customer of process.

The structured system shall be developed and improved continuously. The introduction of Lean management is not a simple technical task but a multiannual structural culture changing process.

## 2.3 Stages of introducing Lean

Some years ago, as a co-worker of a service providing company having long tradition, I had an opportunity to personally know a process for introducing a Lean Project. Aim of this part of the treatise is to present the process of Lean-introduction by using the experiences obtained then, too.

Aim of the customer service office was to earn a so-called Lean-certificate which verified that the office operated according to the Lean approach.

- Earning the Lean-certificate is a process in more stages:
  - preparatory period;
  - evaluation;
  - interviews with managers and co-workers;
  - final meeting, handover of certificate.

### 2.3.1 Preparatory period

The informational documents are sent out to every colleague. A Lean navigator is continuously present during these few months, he/she is responsible for coordinating the project,

he/she observes the processes in the office and he/she briefs about the theoretical background of Lean in certain parts of the weekly meetings. His/her main goal is to make understand the necessity of changes, to moderate the general resistance against the changes, to make aware of the Lean advantages.

An important task of the preparatory period is to determine the categories of loss. Lean sorts the losses according to 8 different categories [13]:

- unutilized human resources;
- overproduction;
- waiting;
- traffic/transportation;
- excessive processing;
- stock;
- repairing/rejects;
- movements.

The following things are qualified as losses: an inadequate utilization of knowledge possessed by the people or the extra work exceeding the real demands, for instance sending unnecessary or too long mails to the customers. The following ones belong to the category of waiting: loss of time due an inadequate supply of devices, a disorganized management of resources, lack of information and competence. The following things are losses: unnecessary travel of branch office colleagues to a meeting or the excessive processing, unnecessary signatures, filling in unnecessary blanks. It is not practical to upload each affair to the record management system postponing the solution of affairs in this way since a solution in front takes 5 minutes in a simple case while a solution from the record management system can be almost 20 minutes. Losses can also be the following: Faulty work due to inattention or an office environment shaped inadequately can also be losses; incorrect placing of a device extends the processes to a great extent.

Beyond determining the losses, it is important to give the employees an opportunity to outline the sore points; general problems are, for example, the lack of feedback, the unequal load of employees, slow realization of the new ideas as well as the awareness-raising of the best practice fails to come about. An effective device of moderating the resistance against Lean is to handle the sore points immediately. The mentioned four sore points can be handled effectively by means the following tools:

Introducing “whiteboard” meetings. Each meeting takes place in front of a so-called whiteboard. The board split into different parts contains the urgent tasks, new ideas, realization stages of ideas, name of the colleague responsible for the realization, the performance indicators. The meetings give occasion to evaluate the performance, to feedback, to emphasize the individual performances, the new ideas are ignored.

Creating standardized operational instructions. These ones support the survey of colleagues’ competencies, the created flow charts contain the most important steps and decision points as well as process times and description of the main process steps.

Beyond defining the losses and sore points, it is outstandingly important to explore the central problems and to solve them by means of A3s. This is a Lean tool: so to say, the problem is outlined and the solution of problem is derived on an A3 page. Process of the solution of a central problem is the following:

Description of the present situation: too much documents with deadline in the record management system.

Aim: to process the documents as soon as possible, to avoid paying penalty resulting from the expiration of documents with deadline.

Analysis: Why does the problem exist? Why the number of documents accumulating in the record management system is so high? Such simple issues get into the record management system which could be solved rapidly during the daily administration.

Proposals: It is not allowed to upload certain types of issue, only in very reasonable cases, for example in case of an extreme number of clients in a branch office. Making the employees interested in hindering the accumulation, introducing new indicators during the evaluation of

personal performance, for example the number of documents solved in the record management system.

Realization: The territorial officer filters the documents uploaded to the record management system; it is always revealed insofar as someone has uploaded an issue gratuitously. Number of the issues solved in the record management system has got into the evaluation criteria.

Follow-up: Daily and weekly statistics are to be placarded which include the number of clients received and the documents processed. According to it, an order of rank is set up, the colleagues being at the end of the list shall explain their performances.

### **2.3.2 Further steps**

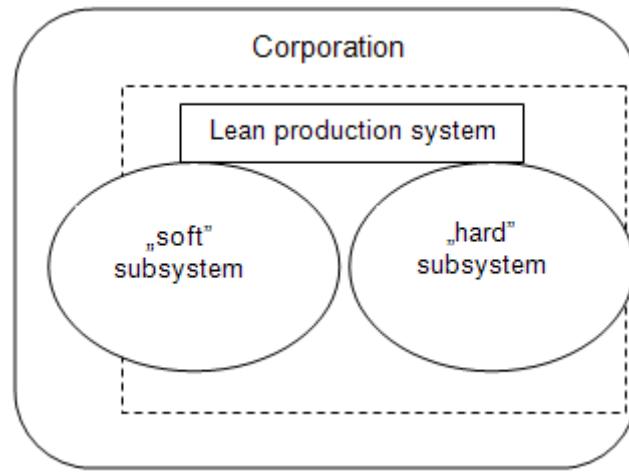
After the preparatory period, the evaluating person examines the compliance with the points of certification list, he/she summarizes his/her observations. The following things form the subject of his/her observation: A3s, standardized operational instructions and whether regular team meetings with table, indices and ideas take place; whether the goals are unequivocal and are indicated clearly.

By means of the interviews with managers and co-workers, the coordinator surveys the changes of recent months, the knowledge of employees representing the organization about the Lean devices and loss types, he/she works up the final image and he/she makes a decision about the classification of Lean certificate to be given. The organization has earned a silver classification because there were deficiencies. Though, the main measures came to fruition but some measures with lower priority was late, there was not an appropriate emphasis placed on the skills matrix to be reached in the future, the earmarking of the future trainings was not carried out.

## **3 Conclusions, looking out**

The relation between the Lean system and the organizational context as well as the production and other organizational functions is increasingly revalued. It is increasingly acknowledged that not just the production processes should be re-thought but it is necessary to reshape the organizational culture as well.

Beside the so-called “hard” technical practices, the Lean system will operate effectively only if it is supported by such factors as the organizational structure, the organizational culture, the changing roles and styles of employees and managers, the new communicational paths or human resource management practices which are called “soft” factors on the whole. This coherence is illustrated by the following figure (*Figure 2*).



*Figure 2: Lean production and its sub-system*

Source: Own edition, based on [19]

It is generally accepted that making the production “Leaned” leads to a better performance, the competitiveness of corporation increases. However, there is no unified standpoint related to the question which factors cause the growth of competitiveness exactly. Until now, the production management investigates typically from the point of view of “hard”, it has a smattering about the

“soft” factors. In my opinion, the human resource management practices have an outstanding effect among the “soft” factors; the coupling of production management and human resource management can largely explain the effect increasing competitiveness from the Lean viewpoint of reorganization.

We can assign the production strategic goals to the sources of competitive advantages and to the so-called core competencies and core distinctive competencies mentioned already in the treatise. Through connecting the goals of production strategy with the Lean production system, the competitiveness of a given organization can be increased further.

Different Lean production system configurations (including different human resource management practices) and operational performance effect can be assigned to the different production strategic goals which are cost leader and can be distinguished. In this form, the coupling of the production strategic goals and the Lean production system creates a novel analytical framework. It is important that only the EEM practices corresponding to the competitive advantage source can positively contribute to the operating performance.

The International Manufacturing Strategy Survey (IMSS) global research network can give a possible framework for the impact assessment of Lean production. The latest questionnaire research of IMSS was performed between January of 2013 and March of 2014. Based on the questions of questionnaire, the Lean producers can be filtered out and the Lean producers can be grouped according to Lean producing technologies and applied “socio” practices. And finally, the operating performance can be determined in case of the single operating configurations. The question can be answered whether only the intensive use of Lean production system (i.e. the joint use of technical and EEM practices) can lead to a good operating performance, whether the growth of competitiveness is due to the technical elements or rather the so-called “socio” subsystem.

Based on my experiences, full introduction of Lean means a real competitive advantage. It significantly enhances the flexibility of corporation while it forms such a continuous loss reduction culture which each member of the organization takes part in.

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