



## DILEMMAS OF LEAN PRODUCTION IN RUSSIA

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### ABSTRACT

This article describes the problems in introducing Lean Production (LP) in Russian production. Based on the introduction of individual lean production tools, conclusions were drawn and solutions to this problem were proposed. The article is devoted to the general problems of LP and possible measures to achieve the best results of the production processes of enterprises.

**Disciplinary:** Production Sciences (Lean Production & Technology).

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## 1. INTRODUCTION

The concept of lean manufacturing emerged in Japan after World War II, when there was an urgent need to rebuild infrastructure, industry and the country as a whole. Resources for recovery were sorely lacking. In such conditions, the founder of the concept of lean production Taiichi Ono acted. He introduced new control technology in Toyota's factories [1].

At the heart of this concept is the definition of the value of the finished product for the consumer. The main point is that all processes occurring in the enterprise are considered from the point of view of additional value, namely, minimizing unnecessary operations in the production process, which ultimately has a positive impact on the financial position of the enterprise.

Basically, there are eight types of losses:

- 1) Product defects and defects. This type of loss significantly affects both the company's expenses and its own status;
- 2) Overproduction. Often it looks like this: the factory produced an excessive amount of products. Its sale is unplanned for a long time, so it needs to be postponed in warehouses, and this additional costs for logistics solutions, gasoline, electricity, etc. [2];
- 3) Expectation. In the absence of established production, there is downtime in different aspects of the enterprise, for example, there are problems with the transportation of finished products, which also has a bad effect on the financial position of the company;
- 4) Unnecessary transportation. The less movement of material assets occurs, the lower the costs;

- 5) Unnecessary stages of processing of finished products. Even in the process of planning production, it is necessary to take into account this aspect in order to avoid unnecessary costs;
- 6) Excess stocks of raw materials for the manufacture of the product;
- 7) Technological overload of electronic equipment. It is necessary to plan in advance the amount of production for a period of time. This fact will help to reduce the cost of repair and maintenance of electronic systems;
- 8) Unfair load distribution of duties of employees, as well as their unrealized potential. We need an individual approach to each employee of the company.

Also, the occurrence of material losses is possible due to non-economic nature, for example, the presence of sanctions against the country, in this case, the problem must be solved at the state level [3].

Throughout the operation of the enterprise, it is necessary to continuously improve the methods of lean production in order to improve its position in the market, as well as to improve the financial situation.

## **2. PROBLEMS OF LEAN PRODUCTION**

At the moment, lean production is especially important in the Russian Federation. This is facilitated by foreign companies. They open their own production in Russia, as the production of dimensional, material and energy-intensive products is cheaper to produce in our country. Competition between manufacturers occurs at the level of product development speed, therefore only the best suppliers and products (price/quality/delivery terms) are selected. Also, Russian suppliers strive for full compliance with international quality standards ISO/TS-16949 and to a constant reduction of all costs [2].

In the Russian Federation, there are several problems with the implementation of Lean Production on enterprises. The main obstacle is the lack of desire of the staff to learn and understand the basics of the LP concept. There is a question of motivation of employees, in particular workers at the enterprise. People are more guided by the experience and methods of the Soviet times: piecework system of remuneration, the motivation of production managers to implement the plan in normal hours or the volume of finished products delivered to the warehouse, identification of the real capabilities of the enterprise, etc.

Also, the management itself may not be fully involved in the production stages. In theory, there has been talking about improving the organization of work of the staff, but in fact, nothing is solved. This problem is often traced and often little supported, both financially and morally by the leaders themselves. Long-term decisions to take the necessary measures to improve the financial situation of the company, lack of motivation, the expectation of quick results without serious efforts-all these factors are reduced to a decrease in the quality of the enterprise as a whole.

The main problem is a misunderstanding of the whole concept of Lean Production. Most enterprises approach the implementation of this system globally in order to reduce costs and improve quality. This is due to insufficient information base with incorrect interpretation, the originals of which are foreign authors describing their experience in another economy. As a result, the management is content with individual elements of the LP and does not dare to global changes.

In Russia, little attention is paid to the study of Lean-tools, in consequence, they are either insufficient or a priori incorrect integration into the enterprise. Enterprise Resource Planning (ERP), Advanced Planning and Scheduling (APS), and Manufacturing Execution System (MES) systems are

necessary to use for competent production of products and the use of Lean-tools separately will not give results in the qualitative organization of the enterprise, at least without proper investments.

### **3. CREATION OF A SPECIAL DEPARTMENT AS AN APPROACH TO SUPPORT EMPLOYEES**

In this article, the greatest attention is paid to the individual approach to each employee by management. After all, the work of the enterprise depends entirely on the work of employees.

In different companies at the stage of interviewing future employees, the authorities pay attention individually to each person, choose the best of the best, but later attention to the workers is present only at the level of performance of official duties and for the most part, the management is not interested in how a person relates to his work. As a result, the employee ceases to feel needed by the company, he realizes that not so much depends on him, and in general begins to perform his work more slowly than and not as responsibly as he did in the beginning.

A high moral level gives emotional support and an incentive to qualitatively perform their duties, but the authorities either do not want or simply cannot devote time to such aspects, therefore, there must be some small organization or perhaps a Department that will deal with issues of such a plan. Therefore the following is proposed:

- Within the enterprise, a special Department is created, which will deal with feedback between the boss and the employee. The top management allocates the necessary minimum space for the work of this Department, employs a certain number of people and is fully equipped with a working room with the necessary amenities.

Initially, a trained group of people will pay attention to each employee, ask his opinion about the workplace, about personal moments concerning the work, as well as record all comments about the improvement and improvement of working conditions. Below are the aspects that will be discussed with employees of the enterprise:

- Statement of "mission" of the company. This term has become popular in Western enterprises and gradually come into circulation in Russia. The employee, in addition to salary and bonuses, it is important to understand that his work does not go to waste and he must know that he is doing a common cause that benefits the company. The more value this employee brings, the better the company will perform. [4] Without fail, enthusiasm should be encouraged. Therefore, the created Department will also monitor the personal achievements of employees and report on this to the authorities, who will subsequently decide on rewards;

- Explanation of responsibility. Every worker has a sphere of responsibility in the workplace. When a person does not fully understand what role he plays in the company, his involvement falls. Basically, this problem arises against the background of illiterate leadership, which simply does not consider it necessary to devote time to explaining these points. That is why the created Department will deal with these cases;

- High-quality health. For any person, good physical and psychological health is necessary [5]. The satisfaction of these details will also contribute to the established Department;

- Free schedule. In any business, the end result is important. For the most rapid and high-quality achievement, it is necessary to correctly distribute the working time. It often happens that half of the employee's day is completely free due to an order not received, lack of raw materials for production or

other reason. Therefore, it is necessary to allocate time so that the employee does not work on the number of work hours, but on the result. Therefore, you can offer to work "on the remote", if this is the IT sphere, or give the employee a day off. Management may not have time to deal with such issues.

- Personal achievement. Performance of the monthly or quarterly plan by the employee can be noted with a small feast;

- Promotion of merit. For the achievement of the employee of the company it is possible to praise personally;

- Trust between management and employees. Employees want nothing to be hidden from them. The management and HR Department often neglect this, as a result of which the involvement suffers. In this case, you can share with employees "insider" information for a common understanding of things;

- Entertainments. The created Department will also be engaged in the creation of any thematic entertainment that will help relieve stress and tension in the workplace. This is a very important aspect of the psychological state of the employee. Just entertainment will bring together both employees and management;

- Regular improvement of working skills. The Department should help with emerging issues and difficulties, thereby unloading the authorities. Then the employee will be much faster and clearer to perform their duties;

- Regular feedback. The chief should know everything that happens in his subordination, but there is not always time to personally follow it;

- Discussion of working moments. The trained staff of the established Department will hold regular meetings, during which they will discuss the General working points, the need for any resources to perform the work, the availability of ideas for improving jobs or others. Thus the enterprise from within will be constantly improved;

- Input into the swing of things. Almost any new employee is hard to get used to at the beginning of his arrival at work. A kind of discomfort does not allow you to perform the work efficiently and quickly. In order not to distract the "grandfathers" on various issues, the created Department will deal with such working aspects;

- Organization of a General dinner. The employee will be pleased if all departments, including the authorities, will have lunch together. So a person will not feel the effect of "boss-subordinate", which will favorably affect communication within the company.

- Possibility of open communication. People often want to express their opinion in a free form, so you can not forbid them to do so, because of the maximum understanding [6].

The composition of the Department assumes the presence of 6-7 employees, each of whom performs his position. One person is the "intermediary" between the company's superiors, established Department and employees. His main job is to regularly support feedback between all employees of the enterprise, as well as in the formation of reports. Two accountants are responsible for the financial position of the Department. Their task is to calculate the estimated costs of meeting the personal needs of personnel, as well as the cost of organizing internal events. Four employees carry out individual communication of workers of the enterprise, but in case of a small number of shots of the company, they can be reduced to two-three people.

#### 4. FACTORS OF EMPLOYEE SATISFACTION

It is also necessary to create certain factors of satisfaction of employees, for the most accurate assessment of morale in the team.

Let us say within seven days there is a survey of personnel on physical and moral conditions in the course of performance of official duties for a period of time.

These factors are designated as SE PM (satisfaction of employees: physical and moral). It is formed from three aspects.

- Attention from the authorities;
- Attitudes of the team to the employee;
- Physical fatigue during the execution of the works.

The SE PM is evaluated on a ten-point scale (from 1 to 10) by the employee of the enterprise and the result is handed over to the authorized personnel, who in turn produce a general analysis and subsequent conclusions.

Thus, it is necessary to collect General information to determine the levels of SE PM for subsequent conclusions and further action.

Example 1 results of a survey of eight employees from the Production Quality Control Department in a period of 5 days, in the working intervals of 8:00-13:00 and 14:00-17:00 are shown.

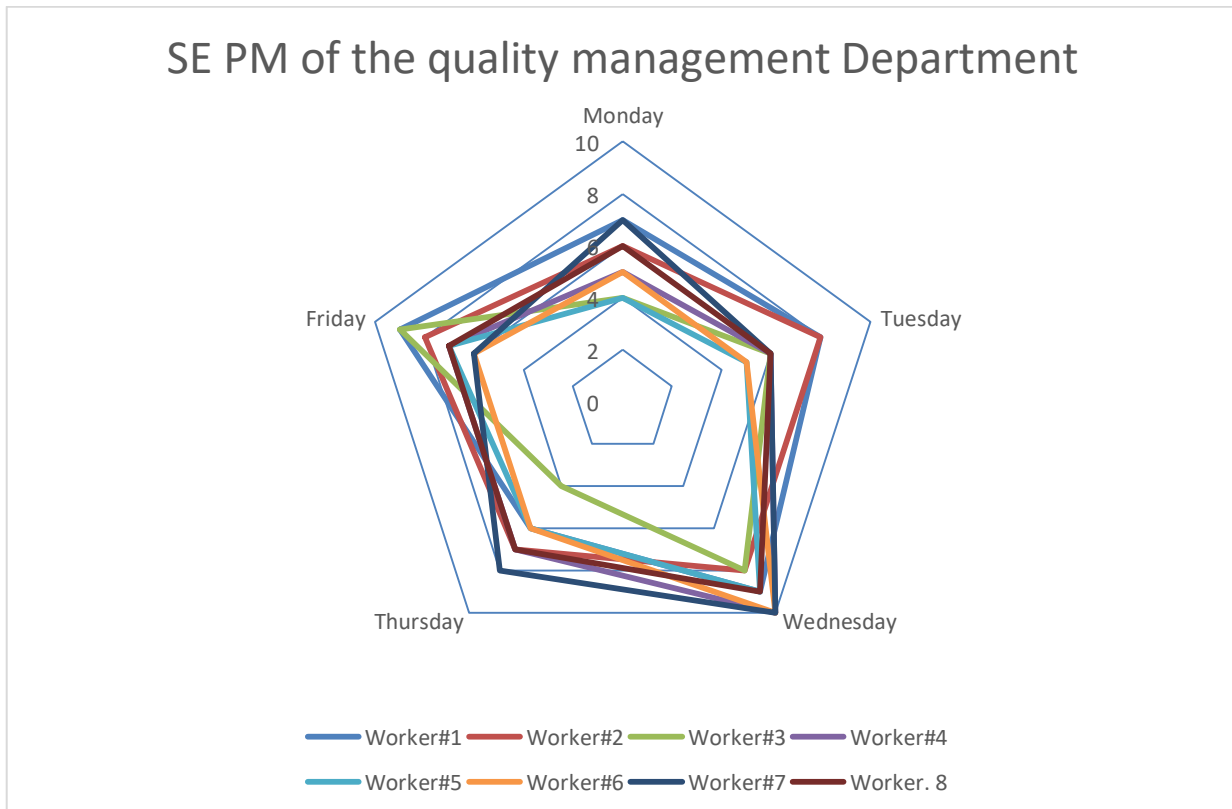
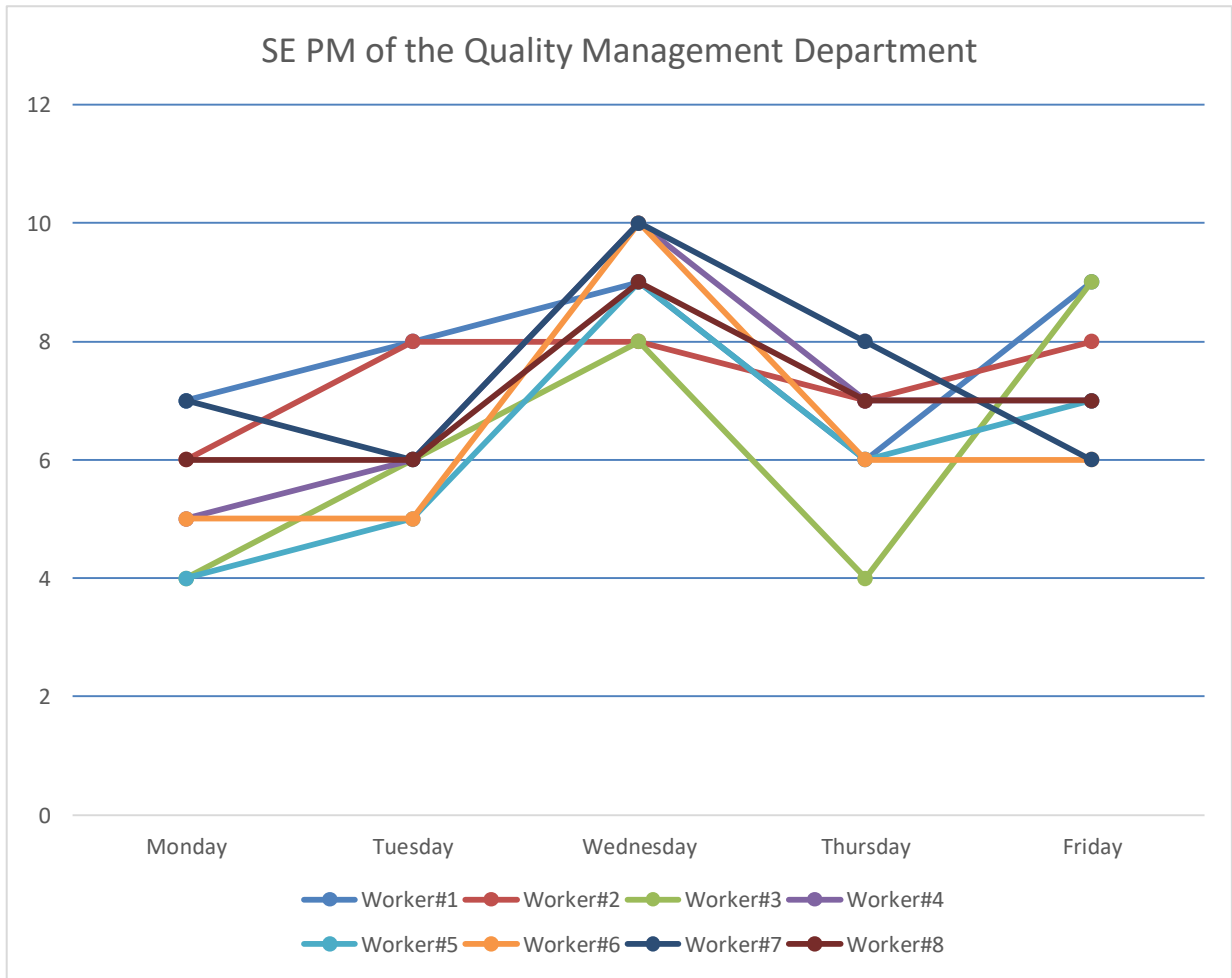
For clarity, there are two diagrams: graphic and petal. Several conclusions can be drawn from them:

- None of the employees noted a value below 4. This indicates a good result since there are no completely dissatisfied, but it is worth paying attention to workers who have a figure below 5;
- on Monday, the values vary in the range from 4 to 7. It can be concluded that the satisfaction of personnel is at an average level since this day accounts for the largest workload, as well as tasks for the implementation of the plan for the current week;
- on average, Friday shows that employees are most satisfied with the conditions included in the list of SE PM, so there is no need to introduce serious working changes;
- Wednesday according to employees is the most favorable working day. This may be due to a small amount of work and the availability of free time for personal Affairs. Almost all the staff of the quality management Department is completely satisfied with their physical and moral condition;
- On indicators of Tuesday and Thursday, it is possible to draw a conclusion that these are average-statistical in the course of working activity of shots.

The results suggest a change in the strategic approach to improving the average performance of FM [7].

Several conclusions can be drawn from these data. First, to improve the quality of work of the entire enterprise, it is necessary to increase the indicators of the SE PM at least in the intervals of 6 to 10 units of this coefficient. Since individually achieve results in 10 units of each employee is very difficult, because not all components of the team can be 100% mutual understanding due to the personal qualities of each person, so this interval will be enough.

To achieve this result, it is necessary to take gradual measures, for example, to distribute the load on the employee on different days of the week. On Monday, the load can be reduced, while on Tuesday or Wednesday to increase it.



**Example 1:** Daily SE PM value of quality management Department for eight workers for week 15 April 2019.



In theory, you can achieve the best average result. On Tuesday and Thursday, you can organize small entertainment events to reduce the moral burden, thereby also increasing the average. The mathematical regularities, in this case, will be the results of the average indicators of the FM employees' satisfaction coefficients for the period of time.

Secondly, it is possible to draw a conclusion about personal preferences in entertainment programs and some qualities of the employee. If such measurements are made over a period of several months, mathematical regularities will appear, on the basis of which it will be seen how satisfied the employee is with the changes made by the Department.

Thus, these activities on the survey of personnel of the company can bring positive results both for the enterprise and for all employees. The most important advantages of this solution are presented below:

- Significant unloading of the authorities. Almost all personnel issues will be dealt with by the created Department;
- Financial benefit. This solution will quickly bring a return on investment. In addition, the quality of the work will be higher by several orders of magnitude;
- Improvement of the situation within the team. Having friends at work has a positive effect on the overall atmosphere of the "team".

## 5. CONCLUSION

The concept of lean production has been examined for use in Russian production. Also, the decision on the implementation of the special department to support employees allows you to solve a number of problems that will improve the quality of the enterprise with minimal financial costs. Many factors have been considered to enhance efficacy of the working, which in turn increase the production outputs.

## 6. AVAILABILITY OF DATA AND MATERIAL

Data can be made available by contacting the corresponding authors

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## 8. CONFLICT OF INTEREST

The author confirms that the presented data do not contain conflicts of interest.

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