

# THE HYPOTHESIS OF A NEW APPROACH TO LEAN PRODUCTION INTO THE CONTEXT OF LEAN THINKING

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## ABSTRACT

*The enterprise management entirely depends on the literacy of strategic management and intellectual potential of employees. Presented in the article are orthoepic content terms of Lean. Also the article includes the detailed analysis of the main operating functions of the production in the concept of lean enterprise, the tools of «Lean Production» as evolutionary development philosophy of «Lean» and the updated hypothesis of a new approach to Lean Production, based on the Noosphere Thinking. In that case, there are born a new term of «Lean Learning Manufacturing».*

## «TOPICALITY OF RESEARCH»

During the last decade, the leadership of many Russian companies began to understand that the deciding factor on the path to business success is a clear statement of the company's strategy and its effective realization. Control of the operating system business is a key in this respect. Performance of the main operating functions of the enterprise is based on the strategic vision of the enterprise core competencies and capabilities to enhance its competitiveness in the market.

Every company strives to meet customer needs, and so maximizes production applying the most efficient use of production facilities and talent. That is why increasing international competition and rapid technological development require the heads of organizations to consider in a new way the full range of management issues for its operating units responsible for the production of goods and services.

During the last decade, management of many Russian enterprises has begun to understand the prospects of using the principles of Lean Production. However, in the pursuit of «winning» as a loyal customer, the company should not forget about the rationality of the use of intellectual, natural and financial resources. In this context, the process of rational using of available recourses becomes important in society, in the company. Therefore, solving the problems of today, we can build a future through the lean technology.

The concept of Lean Production is the philosophy of management, where we don't speak only about changing the prevailing style of production organization, but about a modern culture too; about creating new operating systems, which will be riddled with lean thinking, both among the highest, and among the lower strata enterprise.

Enterprises of this type focus on management approach, the use of existing reserves on the basis of conjecture «Noosphere Thinking». Before proceeding to the analysis of Noosphere Thinking is needed to define the genesis of the concepts of Lean Manufacturing. The hypothesis of a new approach is in the concept of Lean Production in the context of Noosphere Thinking for expanded and detailed proof of the existence. Now the challenges are facing business partly arise because of resistance to change, lack of professionalism, and lack of motivation. Change of ideas and methodologies are cyclically. In the thirties of the twentieth century philosophy of business management system was the most advanced to the «Toyota Production System» (TPS). Today this concept is known as «Lean Production».



The concept of «Lean Production», based on specific principles, where the paramount value is the consumer, and is transformed into a «Lean Thinking», dictated by the value from the standpoint of the manufacturer and the substructures of the operating system business in general. Value - the starting point of Lean Thinking. Value is created by the manufacturer, as defined by the user. Both external and domestic consumers are advocates in the role of consumer. Anybody in any stage of the production process is also considered as a consumer, which should provide all necessary and at the right time. Therefore, it is important to understand values through the integration and coordination of staff through educational programs, which are not only learning the technological aspects, but also brought up the morale, values of the organization.

The process of producing goods and services has been being allowed to talk long about operation management. Breakthrough in the development of the concept of scientific management and production methods has been marked by Just-in-time development approach. The aim of JIT is a smooth and rapid flow of materials, information, and finance through the entire operating system. JIT – strategy driven demand – is nothing made up for as long as there is no need of it. The demand for parts or finished products «pulls» the product of the system. The phrase «sell daily – make daily» embodies the essence of JIT-standard.

Order formations became possible by the emergence of MRP-system as appropriate and in the right quantities. In many ways, the successful implementation of MRP-system depends on the support and active participation in the project implementation of top management. Ignoring this condition is fraught with consequences that can meet resistance from the rank and file employees in the flesh to the loss of communication with business objectives and strategic goals. Reactive process of order execution is carried out through a Kanban system. The Kanban heart is theorizing of the scientific organization of labor theory of F. Taylor and streaming production of H. Ford.

The main purpose of implementing the principles of Kanban and «pull flow» is rapid response to customer needs at the right product at the right time in the specified amounts. To implement this principle the introduction of quick changeovers of equipment – SMED system (Single minute exchange of die) is required. This system implements the approach of Total Productive Maintenance. TPM-task approach focuses on the systematic involvement of all staff in continuous improvement of operational (production) process.

Just-in-time development approach was followed by the development of Total Quality Management. Development of TQM was contributed significant results, both in operational management and in the practice of business management in general. As the process of production management is being developed, a new level of automation of business processes has got a brand new quality. This trend began to popularize the need for training of a new quality (level) – Integrated managers whose duty is to ensure the consistency of individual areas of management.

## **LEAN MANUFACTURING IN THE CONTEXT OF LEAN PRODUCTION**

«Lean Manufacturing» means a systematic influence on the process of creating value for each product - from concept to production, from order to delivery, from raw materials extraction to the moment when the product gets into the hands of end users with a minimum time, cost and losses. Production – this is not the domain of the enterprise. By producing a «Lean Production» is meant that a more general form is the main operating function.

According to, the classification of the business processes of the operating system of the organization, the production is the processing subsystem of the operating system, as the contents of the business process – is the creation of products. Organization's business processes is the primary operating function, which converts the resources received by the company's entry in the final product that represents value to the customer on the exit. The realization of the main operational function determines opportunity, procedures and methods of achieving competent expression and organization competitiveness. It is necessary to build the work with the subsystems of the operating system. In that case, need to talk about working «Lean Production» as «Lean Manufacturing». Management philosophy on the principles of «Lean» is built on the philosophy of morality based on respect for the employee as an individual, involvement in the process of solving the current problems of all employees, creating psychological atmosphere, eliminate fear and providing the ground for the creative potential of man.



There is the development of all three subsystems of the operating system along with the development of production as the main operating function. This means that the activities of all three subsystems – the management, processing, providing – must adhere to the principles of «Lean Manufacturing».

## LEAN PRODUCTION AS TEACH MANUFACTURING

The concept of «Lean Production» – is not just a set of tools and techniques. In order to «Lean» principles work need to create a system that would encourage staff to think, learn and improve. Lean encourages technology to become a learning organization through relentless self-analysis – Hansen. Hansen is part of company culture and an integral part of the Learning Organization. According to the head of Toyota Technical Center, without self-examination is not possible to create a learning organization: «Without Hansen is not possible to do kaizen. Japanese Hansen means that when you do something bad, you should first feel the deepest regret. Then you should develop a plan for solving problems in the future, believing that you will never repeat his mistake. Hansen – a way of thinking, mentality, attitude. Hansen and Kaizen are inextricably linked».

Constant change, innovation and flexibility are integral components of successful business and the mandatory conditions of survival of the XXI century. And the new approach relies on the ability to learn. Lean Manufacturing intelligently uses the stabilization and standardization in order to bring innovation emanating from the project team. These innovations should be standardized and will be used until such time until you find a new approach. Standardization, innovation is intermittent, which is enshrined in the new standards are the foundation of a new approach to learning and creating Learning Manufacturing (Organizations).

Moreover, if the acquired knowledge and skills consistent with the natural inclinations and aspirations of man, it will benefit both the person and company. In this case, preparation of training programs through corporate universities within the enterprises (manufacturing) are transformed into a new type of education of people, because they promote not only professional but also the mental, moral and spiritual development of personality. Continuous improvement and learning in a Learning Manufacturing (Organization) applies to suppliers. Lean enterprise expands its borders and begins a difficult work to integrate third-party vendors into a single network. This structure is called «Lean Learning Manufacturing». Joint training is carried out through workshops on improving production, which is responsible for the results of training provider. At these seminars are being tested different approaches to the organization of the suppliers. Subsequently, some suppliers created an association BAMA (Bluegrass Automotive Manufacturing Association). As part of BAMA's leading providers share their experiences and discuss their concerns, organize joint projects. These meetings contribute to the company-manufacturer convey key information to suppliers.

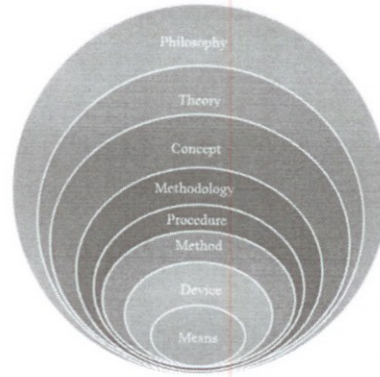
The success of «Lean Learning Manufacturing» equires a skilled top management of the manufacturer, partnerships with suppliers, a culture of continuous improvement and collaborative learning. Conceptually, approaches MRP, TPM, SMED, means of visual control and part of the standard of quality management – JIT, TQM formed the core of the new philosophy of management of modern business Lean Production.

## ORTHOEPIC CONTENT TERMS OF LEAN

In the process of learning concepts (terms), actively used in the concept of «Lean Production» the problem is identified the correct perception and use of terms that constitute the backbone of the «Lean». Incorrect translation of certain terms has provoked confusion in the content of concepts. In order to solve the problem of tracing terms in other languages has been created table (orthoepic content) «Lean» terms with definitions of their values. However, before you begin building orthoepic content terms, it became necessary to clearly define the values of terms used to create a logical connection between the terms of the concept of «Lean Production».

1). Illustration of the meaning of the terms of inclusion on a «doll» can illustrate their logical linkage (Fig.

**Fig. 1. Logic connection between the values of key terms used in the concepts of «Lean Production».**



In this regard, we are entering on the new level not just process control and management of the operating system. There is a new hypothesis for development. Development of «Lean» may be represented as orthoepic communication terms, is actively used in the concept of Lean Production.

Identified contexts of ideas Lean Production suggest the development of the theory of «Lean» to output to a new level of culture of enterprise management, the scheme of interaction between its levels and departments, as well as a system of values and attitudes to work of employees.

The table «orthoepic content terms» based on the deriving research (Table 1).

**Table 1. Orthoepic content of the terms**

Term	Definition
Lean Production	The concept of management, focused on the struggle against the losses of all kinds in all subsystems of the operating organization.
	A set of techniques developed through the creation of sustainable value for customers, employees and owners with a minimum time, cost and errors.
	Style of management organization, where the main emphasis is on education of gifted people, cross-training, strategic thinking as a higher and the lower layers of the organization.
Lean Manufacturing	Transformed the concept of lean production, which covers all the subsystems of the operating system business (management, marketing, information technology, etc.)
Lean Thinking	The philosophy of lean production, aimed at combating all types of losses in all spheres and at all levels of the company.

The most important aspect of the production process of «Thinking System» is to create a company man.

## NOOSPHER THINKING AS IDEALOGIYA TRANSFORMING KNOWLEDGE SOCIETY

As in the evolution of philosophy «Lean», and all changes in nature has always been associated with the role of moderator – Man. Evolution of human relationships: people – society, the employee – company, organization – suppliers, the company – the customer – is largely dependent on modern technologies, concepts and ideologies. Century ideology of today should seek a harmonious combination of Man – Nature – Society – Space. This harmonious union describes the Noosphere thinking. This idea of the noosphere belongs to Russian scientists. Great contribution to the development of the noosphere thinking was made by V.I . Vernadsky in his works «Biosphere and noosphere», «Philosophical thoughts naturalist». Noosphere thinking idea is a mechanism of the humanity survival by creating a balance between the capacity of the biosphere and the needs of the population to meet the good things of life, gradually increasing the technology of maintaining the balance.

Human activities could lead to the degradation of Earth's biosphere and death, but can also lead to the noosphere – the next evolutionary stage of the existence of a new biosphere. Noosphere – a sensible creative



power of thought and action of the majority of people in the biosphere, harmonious union of man and nature. Man of the noosphere – a man of the future. In his teachings Vernadsky said about scientific knowledge as a special area, «where the process of continually organizing and processing information on various events and objects of reality». Biosphere is modified in a new state – the noosphere. Noosphere thinking permits politics and economics, morality and art, philosophical thought and religious life. Academic life generates a new technique, technology, improves manufacturing processes that directly and powerfully alter the nature, «enriches humanity, making it more knowledgeable and skilful». The idea of sustainable consumption involves the creation of future society – Noosphere society. In this regard, there is the reorientation of the society to a creative understanding of the evolution of knowledge, using the methods of energy-self-regulation.

In perspective, the concept of energy-paradigm «sphere of the mind» is a kind of energy-shell of the Earth, «which records are stored all the results of cognitive, emotional, verbal, material and economic activities of man and mankind». You can submit new model of «being» where the man of the noosphere, and to be more precise human intelligence – is the core, the essence, and the tools of development and transformation of the world, societies, organizations – is the stratosphere thrift. The idea of Noosphere Thinking is not affected by accident, because one must look at the root and see the basic relationship. Realizing the essence of «Lean Production» in conjunction with the specific areas of activity can create an efficient operating system. All parts of the logistics chain will be «linked» the ideology of Noosphere ratio (relationship). Noosphere evolution in the inner world of man can lead to changes in society and nature. And these changes must be backed by concrete action. Role of the applied part or biosphere-saving aspect is given to the principles of «Lean Ratio». If we change the Noosphere Thinking officer, taught him to work, to improve themselves, to devote him to the philosophy of «Lean», then we will create a strong corporate culture and as a consequence, the effective (efficient) operating system.

Let's investigate this theory of Noosphere Thinking if this idea is submitted only in one organization, not in the global sense. Each organization is a small company with its population and territory, wealth and hierarchy, communication and technology, corporate culture and management style. In order to control and manage effectively this system, the organization must actively coordinate all its departments. There are four levels of integration of the organization: operational, functional, cross-functional and inter-institutional. Sharpen their focus on the last two levels. Cross-functional level determines the internal integration of the organization. The essence of it is reduced to the integration of all departments and services of the enterprise for a given outcome. However, cross-functional integration is not enough to achieve competitive advantage in today's business environment. Therefore, under current conditions the company can be effective only when the external integration of its activities on inter-organizational level, where the stability of the open system is formed by the development of interaction with the environment. Thus, we can talk about environmentalism. Therefore environmentalism lean perception can be regarded as a focus of psycho-emotional and cultural education of the individual to interact with the environment (contact with people, the microclimate in a particular situation and environment). This idea can lead Hawthorne experiments of Elton Mayo, which examined the effects of certain environmental changes on the productivity of workers as a confirmation. Despite the fact that the idea of «Lean» is born with business needs, its principles are well reflect the essence of the Noosphere Thinking.

The concept of «Lean Production» in the context of Noosphere Thinking generates a new philosophy of Lean Thinking. Reason for lean thinking is «Learning Lean Manufacturing». In this case, lean thinking has permeated all the subsystem of the operating system business.

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