

Lean management in globalization era

Daniel D. Georgescu

Lean management in globalization era: *Productivity growth comes from technological change and better organisation of production. Both processes operate simultaneously and, in practice, it is difficult to distinguish between the effects of each process. The processes are dynamic and affect individual activities differently over time. These years, manufacturing functions have been transferred rapidly and globally from mature countries to emerging countries. This paper is about the lean philosophy and the critical elements for successful transfer of lean management among sites and countries.*

Key words: Lean Enterprise, Lean Management, TPM, KAIZEN.

INTRODUCTION

The *lean philosophy* is all about eliminating waste and synchronizing necessities in order to, on the short and long term, meet the requirements of the market. The lean philosophy is expressed in several different statements: achieving more with less people, reducing non-value-adding activities, slimming etc. Lean is often associated with efficiency, reducing surplus. This however, is only one side of the lean philosophy. An essential aspect of the lean philosophy is a continuous striving for flawless products, that can be delivered on demand, customer specific, without wasting material, labor hours, and other resources in a safe working environment. The lean philosophy is a continuous improvement philosophy. There are several methods and techniques that can be used to become *leaner*.

Lean enterprise is a business system for organizing and managing product development, operations, suppliers, and customer relations. Businesses and other organizations use lean principles, practices, and tools to create precise customer value — goods and services with higher quality and fewer defects — with less human effort, less space, less capital, and less time than the traditional system of mass production. Using *Lean principles*, manufacturers have made significant improvements to their operations, from improved productivity, increased resource utilization, to a more accurate understanding of product costs.

Today, the real cost reduction opportunities for many companies are in the linkages to suppliers and customers. In order to respond to such change—and keep the costs of responding at minimum levels—companies must have the capabilities to meet demand as it occurs. Conventional mass production manufacturing models lack the flexibility to respond as rapidly as necessary in today's marketplace. Push-based mass production models that evolved from a bygone era result in extended lead times, excess inventory, poor quality and a vicious cycle where high inventory translates to longer lead times and a value stream that is no longer responsive to the customer and the changing needs of the customer. An accounting mentality of *low per piece cost* led to pursuit of volume – at the piece part level – with questionable decisions about manufacturing equipment, flows, organization, etc. taking place. Volume covered all ills – whether it be high setups, quality issues or any of a number of other problems.

Before the emergence of Toyota Production System in 1940, mass production which came from Henry Ford in the early 20th century, famously for the Ford Model-T was popularized around the world for many years, a large number of companies adopted this revolutionized production system, even now, many industries are still only appropriate for mass production rather than lean production. Because of the weak economic environment after World War II, companies in Japan could not afford too much cost in manufacturing products as western companies, they had to explore some other production patterns with less cost and high efficiency. The automotive manufacturer Toyota was the one that succeeded in contriving a novel production system that had the contribution to reduce costs, increase efficiency and produce better quality compared to mass production.

In 1990, Americans James P. Womack and Daniel T. Jones extracted the most important and essential principles of Toyota Production System and created a new production philosophy named "Lean production" in the book *The Machine That Changed the World* (Womack and Jones, 1990). Lean production is a combination of mass production and craft production. The reason why lean production is designed is that the manufacturers want to have more competitiveness in the market, meet varieties of customers' needs, acquire higher quality of products, and obtain more profit. *Five fundamental and essential principles of lean production* are briefly explained follows and also some examples of the principles that can be found in the literature: Value; Value stream; Flow; Pull; Perfection.

In this paper, based on this understanding, requisites for transfer of lean management are discussed through investigating the global activity of Lean Management, and the specification of infrastructure enabling its smooth transfer is examined.

TRANSFERRING LEAN MANAGEMENT

In fact, a different culture is not the essential problem for implementing lean production, but is something within it. It is unavoidable that different countries have different local customs and different industrial environments: labor density, degrees of development, industrialization, education, traffic situation, price of land and so on. Companies have to take into account all these factors when putting lean production into practice because their variations could lead to different results when applying lean production, and sometimes, lean production is not suitable at all in some extreme situations. Therefore, finding the appropriate principles of lean production is the crucial step for companies executing lean production successfully.

In short, culture differences indeed exist in different geographical regions. Nevertheless, the essential factors affecting the implementation of lean production, just as mentioned above, is not the culture itself but something within it and *companies' policies* are another fundamental aspect for carrying out different lean production.

The implementation of lean production changes the structures of organization and administration of companies dramatically, but it indeed makes a positive impact on administration performances and the overall competitiveness. There are also some changes caused by implementation of lean production, including reducing workforce and identifying duties of the rest, training employees to be multi-skilled, building cross-functional teams or departments, blurring boundaries among departments, building convenient and fast information systems and so on.

Actually, the failure of lean production in some traditional companies is caused by the failure of organizational changes. Thus, administration and organization management are crucial for implementing lean production. Communication and education are two keys to apply lean production successfully:

- **Lean production emphasizes cooperation and teamwork, thus communication** is an absolutely indispensable part to achieve lean production successfully.

- **Education** is another important factor to organizational changes caused by lean production especially for traditional companies.

Culture change takes time; it cannot be accomplished overnight or in a few weeks. With hard work and determination combined with a little luck, significant culture change might be accomplished in a few years. That people naturally resist change is no revelation to most of us, but we may overlook the fact that managers also resist change. Their resistance often includes failure to step up to the challenge of managing change including the learning of new skills or more importantly the "unlearning" of some old ways of dealing with people. They may also be happy to give up on change efforts by declaring failure rather than acknowledging the successful baby-steps that are present at the leading edge of the organizational learning curve. High on most lists of lean management skills would be these which all support the critical organizational culture change: Trusting / Respecting;

Sharing information; Empowering / Shared decision making; Team building / Motivation; Coaching / Mentoring; Training / Developing; Collaborative relationships / win-win attitudes /partnering; Managing organizational culture; Full commitment to change and management in a new way.

The translation of management concepts is to be interpreted as a circular process, feeding on and feeding back to the discourse. Given a certain point in time, we can identify a set of institutionalized practices and ideas in the management discourse. Coming from a period where organizational culture, participative strategies and customer focus have been predominating factors in the management discourse, we are perhaps starting to see a move **transferring Lean production** from a normative to a rational management discourse. Management concepts are decontextualized, reconstructed and commoditized and then disseminated to organizations through the process of **interorganizational transferring**. Once inside the organizational framework, the concept will be met by networks of actors. Based on the **transferring competence** within the organization, different modes of interpretation of the encountered idea will be applied and the idea will be transferred by individuals and networks of actors within and outside the organization (e.g. consultants, business partners) – **intraorganizational transferring**.

Nowadays, Lean is one of the well known management scheme all over the world because of its rapid globalization. Due to recent rapid globalization, Lean scheme has to reinforce various aspects of its feature and there are 3 major directions. These are now progressing in terms of simultaneous improvement.

1) Geographically horizontal expansion (See Fig. 1).

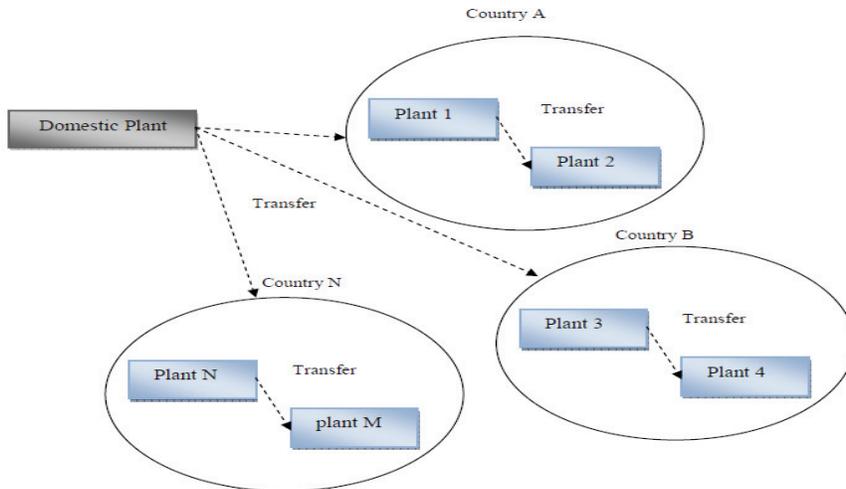


Figure .1 Geographic Transfer of Lean Management

This extension is improvement technology transfer to offshore sites operating under various business environments. This activity is classified into 3 categories, i.e. transfer from mother factory to offshore factory in the same country, transfer among offshore factories originated in the same country and transfer among offshore factories originated in the different countries.

2) Functionally horizontal expansion (See Figure. 2).

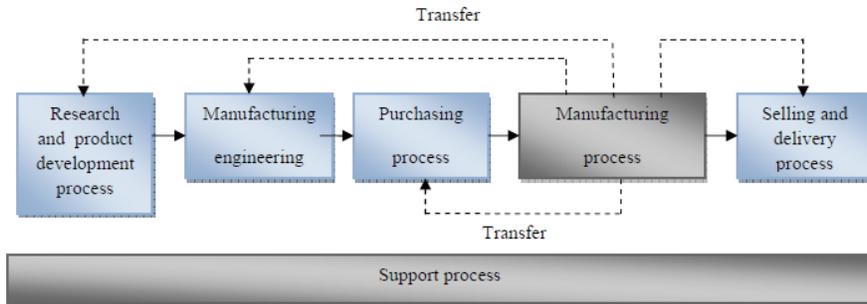


Figure 2. Functionally horizontal expansion

This extension is to transfer improvement technology from manufacturing to other business functions, which has been developed and accumulated in manufacturing industries, especially in its major function, i.e. factories. This includes transfer to R&D, sales, production engineering such as process design, purchasing, delivery divisions. Further, transfer to other industries such as service sector is also in this scope.

3) Vertical transfer.

This extension is to reinforce the linkage between corporate strategy and improvement activities, which is a different perspective from the above pattern of transfer. This indicates not only physical transfer of technology to horizontal sites/functions but also qualitative enhancement based on the rational linkage with these sites, and it is extremely important for improvement of company performance.

The reasons and incentives to promote lean management transfer can be summarized into 2 major issues: Reinforcement of manufacturing function; Establishment of transfer business of lean management and its refinement.

Before applying Lean Manufacturing principles and tools, one need knowledge of the situation, on which you can choose the strategy of improvement and determine priorities for action. Lean Thinking uses a proven methodology with clients in its approach. The approach is as follows: Deeply analyse; Initial Pilot Activity; Integration.

CONCLUSIONS AND FUTURE WORK

The purpose of this paper has been to contribute to the knowledge base concerning the transferring of management concepts with a specific focus on Lean Production. The underlying ambition has been to take a holistic perspective on the matter and demonstrate how different theoretical perspectives can be combined to form a model for analyzing these processes of transferring.

Within industry, the concept cannot be said to be associated with a certain set of practices, but rather seems to be a label that is used to describe a variety of applications. Although weak inscriptions of management concepts are required at the discourse level, these can cause problems when a management concept is brought inside an organization. It is indicated that insufficient transferring competence will lead to weak inscriptions, which in turn may lead to an uncontrolled and potentially ineffective translation process, increasing the risk of undesired decoupling. Transferring should not be approached normatively. Just as with Lean Production, one cannot say that translation is good or bad, but is dependent upon the situation.

REFERENCES

- [1]. Bicheno, J.(2003). *Process improvement and quality in lean manufacturing*, Edited by APICS, USA.
- [2]. Brue, G.(2002). *Six Sigma for Managers*, Edited by McGraw-Hill; Alexandria, USA.
- [3]. Burton, T & Boeder, S.(2003). *The lean extended enterprise*, J. Ross Publishing; Florida, USA.
- [4]. Gross, M.J. & McInnis, K.R.(2003). *Kanban Made Simple*, Edited by AMACOM, New York, USA.
- [5]. Hobbs, D.(2004). *Lean manufacturing implementation*, J. Ross Publishing & APICS; Florida, USA.
- [6]. Imai, M. (1986), *Kaizen: the Key to Japan's Competitive Success*, Random House, New York, NY, USA.
- [7]. Imai, M. (1997), *Gemba Kaizen*, McGraw-Hill, New York, NY, USA.
- [8]. Imai, M. (2010), *Kaizen Institute*, available at: www.kaizen-institute.com.
- [9]. Leflar, J.(2001). *Practical TPM*, Edited by Productivity Press, Portland, USA.
- [10]. Maskell, B.(2002). *Performance measurement for world class manufacturing*, Productivity Press, New York, USA .
- [11]. McCarty, D.& Rich, N.(2008). *Lean TPM*, Edited by Elsevier Press, Oxford, UK.
- [12]. Moore, R.(2004). *Making Common Sense Common Practice: Model for Manufacturing Excellence*, Edited by Elsevier Publishing, Oxford, UK .
- [13]. Ohno, T. (1988), *Toyota Production System*, Productivity Press, Portland, OR, USA.
- [14]. Ohno, T. (1988), *Workplace Management*, Productivity Press, Portland, OR, USA.
- [15]. Ohno, T. and Mito, S. (1988), *Just-in-Time For Today and Tomorrow*, Productivity Press, Cambridge, MA, USA.
- [16]. Rother, M. & Shook, J.(1999). *Learning to See*, Edited by The Lean Enterprises Institute, Massachusetts, USA.
- [17]. Rother, M. (2010). *Toyota kata: managing people for improvement, adaptiveness, and superior results*, Edited by Mc Graw Hill, Massachusetts, USA.
- [18]. Taylor, F.W. (1911), *The Principles of Scientific Management*, Harper & Brothers, New York, NY, USA.
- [19]. Womack, J., Jones, D.T., and Roos, D.,(1990). *The Machine That Changed the World*, MacMillan Press, NY, USA.
- [20]. Womack, J. and Jones, D. (1996), *Lean Thinking*, Simon & Schuster, New York, NY, USA.

ABOUT THE AUTHOR

Daniel D.Georgescu,PhD, Department of Engineering and Management of Technological Systems; The Polytechnic University of Bucharest, Romania; Phone: +40 31 4210060, Email: daniel@engineering.com

The paper has been reviewed.