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LEAN PRODUCTION SYSTEM AT ASSA ABLOY ROMANIA-THE 5S

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Abstract
The transition to lean production is difficult. Creating and sustaining an organizational culture where learning and continuous improvement are a priority is a challenge. Assa Abloy is a multinational organization that focuses on quality and employee empowerment. In the last few years Assa Abloy Romania drove out activities that do not create value in the eyes of the customer. This article is a continuation of a previous research (Grigore and Badea, 2012) that focused on the same subject and provides other example of successful lean lessons.
Keywords: Lean production, 5Ss, Continuous learning, Assa Abloy.

1. INTRODUCTION

Increased global competition and the effect of customer choice are driving organizations to reinvent themselves and to compete to the basis of speed, cost, quality, innovation, flexibility and customer responsibilities. Technology is leading to shorter cycle times, and new working patterns have been introduced in response to increasing customer demands for cheaper, better, faster and round the clock availability of quality products and services (Holbeche, 2005).

The ability to manage continuous change and improvement has become the center of business success. Unless an organization can flex in line with the changing needs of its customers and driving forces in the environment, it soon finds itself out-of-step and forced to implement major changes.

Given the drivers for business flexibility, organizations need to change in order to remain successful. Change is not something to be managed just when there is a major crisis or when a new chief executive arrives and embarks on an ambitious change initiative. Various reports suggest that 75% of all transformation efforts fail, as do 50-75% of all reengineering efforts (Holbeche, 2005). Several factors are known to contribute to failure, including inappropriate business strategies. The strategic planning has become very short term, with the challenge being less about choosing a strategic decision and more about implementing the later chosen strategy.

2. LEAN PRODUCTION SYSTEM

Lean production was developed in Japan in the 1950s and was extensively practiced initially by the Toyota Motor Co. Lean production is a disciplined process-focused production system, the objective of which is to minimize the consumption of resources that add no value to a product. Lean production means identifying customer value by analyzing all of the activities required to produce the product, and then optimizing the entire process from the point of view of the customer. The manager finds what creates value for the customer and what does not (Parks, 2003).

The originators determined that there are seven major wastes in production: defects, transportation, overproduction, waiting, processing, movement and inventory. Lean production uses the process of continuous improvement applied to products, processes and services with the goal of improving performance and reducing waste over time. The fundamental tool is Kaizen, in which cross-functional teams' systematically analyses processes to eliminate waste and achieve improvement.

Lean thinking divides the essence of lean approach into five key principles (Grigore and Badea, 2012) and shows how the concepts can be extended beyond automotive production to any company or organization, in any sector, in any country.

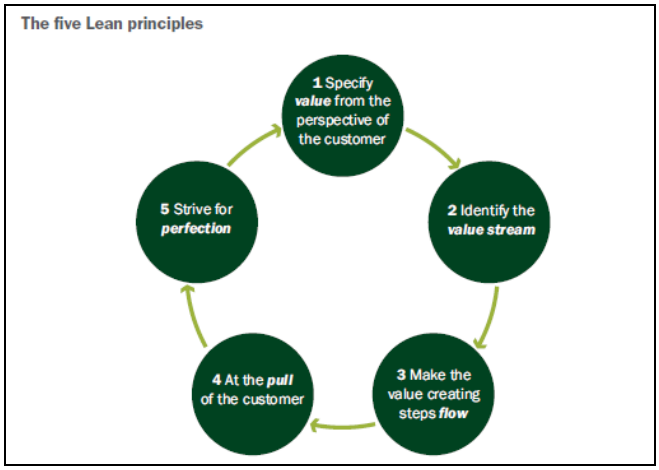

FIGURE 1 – THE FIVE LEAN PRINCIPLES
Source: Hines et al., 2008.

1. Specify value - see the value as defined by the end user.
2. Identify the value stream - understand all the activities required to produce a product, and then optimize the whole process from the view of the end-user.
3. Flow - obtains the activities that add value to flow without interruption.

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4. Pull -respond to the demand of the customer

5. Perfection - systematically identify and eliminate waste in production.

Lean behavior applies the process of continuous improvement to an individual or an organization with the aim of improving performances over time. This approach rigorously aligns the production work carried out in lean factories with the development of leadership and management skills.

Understanding what the customer wants and ensuring customer input and feedback are starting points for lean production. Lean production cannot succeed without the disciplined use of effective tools to identify the root cause of variations. Support tools for this approach includes the 5Ss (sort, straighten, shine, standardize and sustain). In other words a clean and well organized workplace is constructive to being able to find things when you need them.

3. EXAMPLE OF ASSA ABLOY ROMANIA

ASSA ABLOY is a market leader in the global shift from mechanical to electromechanical solutions for locks, doors and windows. This position creates opportunities for intelligent solutions and products that can greatly contribute to energy and cost savings.

Demand for sustainable products is increasing. This is an opportunity for ASSA ABLOY and the organization is embracing sustainability on a large scale.

ASSA ABLOY Romania is the European Centre for manufacturing of locks. The company is producing products in a more environmentally friendly manner that better meet the customers' needs while also lowering their total cost of ownership.

An important element for the foundation of lean system is the system to achieve and maintain an efficient work environment known as 5 S.

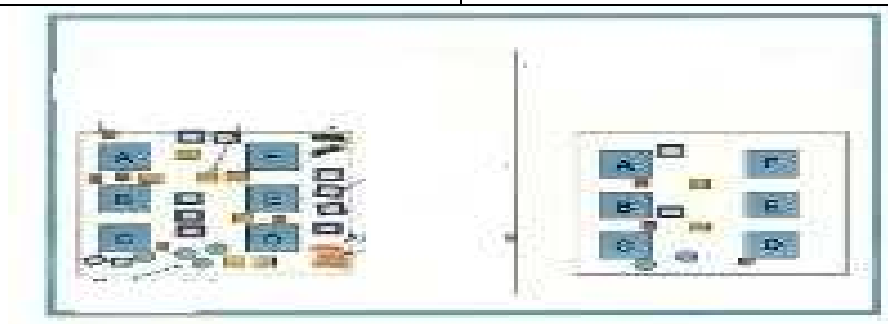
TABLE 1 – THE 5SS

THE 5s in LEAN THINKING		
ENGLISH	**JAPANESE**	**ROMANIAN**
Sort	Seiri	Sortare
Straighten	Seiton	Separare
Shine	Seiso	Strălucire
Standardize	Seiketsu	Standardizare
Sustain	Shitsuke	Susţinere

SOURCE: BĂDULESCU, 2013

The 5Ss represent a good checklist for lean operations and also provides an easy vehicle with which to assist the culture change that is often necessary to bring about lean operations.

TABLE 2 – EXAMPLES OF SORTING IN THE PRODUCTION AREA

BEFORE	***AFTER***
Lots of items that create clutter: tools and devices, tables, obsolete components, container materials, rejected articles, containers of adhesives and lubricants.	*All useless items were removed from the workplace.*
	

SOURCE: BĂDULESCU, 2013.

1. **Sorting** means to identify all items in the workspace that are not needed in daily work: waste and scrap, unused items, unused SDVs, hand tools not needed, old components, personal items (not working now). Sorting means also keeping what is needed and removing everything else from the work area. Identify non value items and remove them. Getting rid of these items, make space available usually improves workflows.

2. **Separation** means arranging and using methods analysis tools to have the material and equipment necessary to work (components, materials, machinery and equipment, SDV and hand tools, containers) to improve work flow and reduce wasted motion. This step is necessary so that: it can be found and used easily, do not confuse work and access to workspace and do not create safety issues at work.

Basically some rules should be followed:

a) Have the minimum number of necessary tools.

b) Materials, components, containers and scrap good parts have to be placed and properly marked.

c) Protective equipment has to be visible and easily accessible in case of need.

d) Around the potential elements of fire everything has to be arranged properly.

e) The main paths and workspaces, and also mobile elements have to be defined and marked.

3. **Shine** means that all tools and equipment associated with the process must be cleaned and checked against: spills, wear, loss fixings, incorrect depositories. Cleaning should be applied to all workspace flooring, utilities and fittings, ceiling. It is important to divide work areas and responsibilities: each work area must have a responsible and for each responsible cleaning activity are established.

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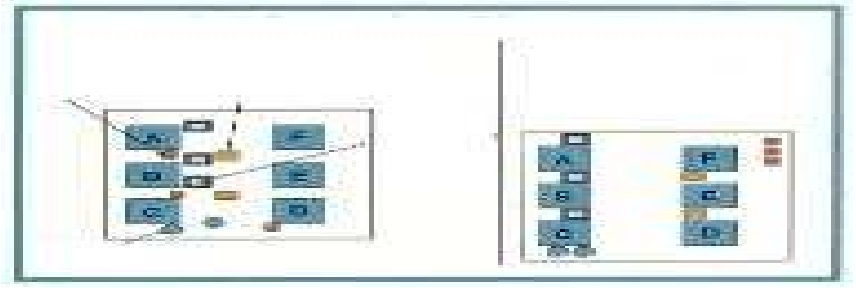
TABLE 3 – EXAMPLES OF SEPARATION IN THE PRODUCTION WORKPLACE

BEFORE	***AFTER***
Necessary items still tangle the workplace: tools and devices, tables, container materials, containers of adhesives and lubricants.	*All required items are correctly located.* *Reduce crowding.* *It improves work safety.*
	

SOURCE: BĂDULESCU, 2013.

Implementing cleaning means:

a) Eliminate potential and generating problems.

b) Carefully and systematically clean each area.

c) Repair or replace damaged or missing items.

d) Cleansing is not just dusting.

e) Cleaning requires careful inspection.

f) Tables are set rules for the whole team.

4. **Standardize** means removing variations from the process by developing standard operating procedures and checklist. Good standards make the abnormal obvious. Standardize equipment and tooling so that cross-training time and costs are reduced. Train and retain the work team so when deviations occur they are readily apparent to all.

5. **Sustain** means review periodically to recognize efforts and to motivate to sustain progress. Use visuals wherever possible to communicate and sustain progress.

The 5Ss provides a tool for continuous improvement with which the employees can identify.

4. CONCLUSIONS

Lean production is a philosophy of continuous improvement. Lean production begins with a focus on customer desires, and it focuses on driving all waste out of all processes. Lean organizations are adding value more efficiently than other firms. Lean production attack wasted space because of less than

optimal layout. The expectation is that committed, empowered employee's work with committed management and suppliers to build systems that respond to customers with ever lower cost and higher quality.

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