Project management for implementing Japanese methodology – Kaizen at ASSA ABLOY Romania

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Abstract. *Prepared or not, Romania faces a moment of transformation; this comes as a result of the economic crises which exposed structural weaknesses of the Romanian economy and industry. In the meantime, long-term challenges – such as globalization, shift of power centers from the national level to international structures/bodies or scarcity of resources – intensify. Having this context, it is mandatory for Romanian companies to develop strategies aiming to maintain them competitive. The paper propose an exploratory analysis regarding a Romanian company – part of an important international group – that was capable to build a strategic vision of its future, to define a plan for change and to implement the necessary measures for the project success. In order to analyze the project of implementing KAIZEN methodology at ASSA ABLOY Romania the research initiative consisted both of in-depth interviews with two members of the company's top management (the technical manager and one of the business units' managers) and documents examination. The research endeavor started from the assumption that if the KAIZEN system was adopted in the company the decision was appropriate, the results positive and the implementation process properly managed. The paper analyse the project from the point of view of economic situation of the company and environment, time constraints, budget limitations, technical level/quality performance and risks. It is intended the conclusions to be useful for future similar projects either within the company under debate or by other organisations in similar situations.*

Keywords*: ASSA ABLOY; lean management; KAIZEN; door lock systems; Romania.*

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Introduction

Lean Production. Lean Thinking. Lean Principles

Probably the most significant operations and supply management approach of the last half of century is *lean production*. The basis of lean thinking came from the just-in-time (JIT) production concepts pioneered in Japan at Toyota (Jacobs & Chase, 2013, p. 402). Even thought JIT gained worldwide prominence in the 1970s, some of its philosophy can be traced to the early 1900s in the United States at Henry Ford – who used JIT concepts as he developed his moving assembly lines to make automobiles.

Lean production is an integrated set of activities designed to achieve production using minimal inventories of raw materials, wok-in-process and finished goods (Jacobs & Chase, 2013, p. 404). In the context of supply chains, lean production refers to a focus on eliminating as much waste as possible. Lean systems concentrates on pacing production and synchronizing delivery of incoming supply.

Kamauff (2010) mentions five principles of "lean thinking":

- Value: determine exactly what *value* means for the customer for a specific product (good, service, or combination).

- Value stream: identify for each product or, in some cases, for each product family the entire *value stream* – the series of specific actions required to bring a specific product to the costumer.

- Flow: make the remaining, value-creating steps *flow*.

- Pull: customers should *pull* products and services through their orders; the organization should not push its products and services.

- Perfection: pursue *perfection* by reducing effort, time, space, cost and mistakes while offering products of ever greater value to customers.

The success of lean systems in Japan and the United States has attracted keen interest among other traditional manufacturers. Nevertheless, transition to a lean system is not an easy process and planning a successful conversion is a challenge. To increase the probability of successful transition, companies should adopt a carefully planned approach that includes certain particular important elements (Stevenson, 2012, p.

643). In this respect, one should make sure that top management is committed to the conversion and that they know what will be required. Also, management must be involved in the process and should know what it will cost, how long it will take to complete the conversion, and what results can be expected. The operations have to be study carefully in order to decide which parts will need the most effort to convert. Likewise, it is important to obtain the support and cooperation of workers. Training programs that include sessions in setups, maintenance of equipment, cross-training for multiple tasks, cooperation and problem solving should be prepared and workers must be fully informed about what lean is and why it is desirable. Meanwhile, permanently reassure workers that their jobs are secure. Probably it is for the best to begin by trying to reduce setup times while maintaining the current system and enlist the aid of workers in identifying and eliminating existing problems (e.g. bottlenecks, poor quality). Later on, gradually convert operations, beginning at the *end* of the process and working *backward*. At each stage, one should make sure the conversion has been relatively successful before moving on and should not begin to reduce inventories until major problems have been resolved. As one of the last steps, suppliers should be converted to JIT and the company should be prepared to work closely with them. The start is by narrowing the list of vendors, identifying those who are willing to embrace the lean philosophy. Preference should be given to vendors who have long-term track records of reliability. If quick response time is important vendors located nearby should be used. It is for the best to establish long-term commitments with vendors insisting on high standards of quality and adherence to strict delivery schedules. Last but not least one must be prepared to encounter obstacles to conversion.

But what kind of obstacles could hinder the process? Stevenson (2012) argues that some cultures relate better to the lean philosophy than others – not to forget that *cultures* vary from organization to organization. If a culture doesn't relate, it can be difficult for an organization to change its culture within a short time. Similar, manufacturers that operate with large amounts of inventory to handle varying customer demands may have difficulties acclimating themselves to less inventory. Other types of obstacles are in fact related to the above-described important elements. Management may not be totally committed or may be unwilling to devote the necessary resources to conversion – this is perhaps the most serious

impediment because the conversion is probably doomed without serious commitment. Another issue could be that workers and/or management may not display a cooperative spirit. It must not be forgotten that the system is predicated on cooperation. Managers may resist because lean shifts some of the responsibility from management to workers and gives workers more control over the work. Workers may resist because of the increased responsibility and stress. Suppliers may resist for several reasons: buyers may not be willing to commit the resources necessary to help them adapt to the lean systems; they may be uneasy about long-term commitments to a buyer; frequent, small deliveries may be difficult, especially if the supplier has other buyers who use traditional systems; the burden of quality control will shift to the supplier; and finally, frequent engineering changes may result from continuing lean improvements by the buyer.

Masaaki Imai (1997) argues that the most important aspect of JIT or TQC (Total Quality Control) is a philosophy of continuous improvement. This philosophy seeks to improve all factors related to the process of converting inputs into outputs on an ongoing basis (Stevenson, 2012, p. 392). It covers equipment, methods, materials and people. The concept of continuous improvement was not new, but it did not receive much interest in the Western countries for a while; however, many Japanese companies used it for years, and it became a cornerstone of the Japanese approach to production. The Japanese use the term *kaizen* to refer to continuous improvement. The successes of Japanese companies determined other organisations to re-examine many of their approaches. This resulted in a strong interest in the continuous improvement approach.

Although Westerners and Japanese both ascribe to improvement, the two cultures have different concepts of what this term means (Fogarty, Blackstone & Hoffmann, 1991, p.569). Westerners think of improvement as a step function – a change represents a marked increase in performance. That level of performance is held until the next performance leap is introduced. The Japanese view continuous improvement as an upward sloping line – driven by numerous incremental improvements. Each improvement is in itself imperceptible, but collectively the changes made in a few months will represent a great deal of progress.

The Japanese developed a checklist, known as the 5S from the words *seiri* (*sort* and clear out), *seiton* (*straighten* and configure), *seiso* (*scrub* and clean up), *seiketsu* (maintain *sanitation* and cleanliness of self and workplace) and *shitsuke* (*self-discipline and standardization* of these practices). A development of this checklist (5Ss) that also provides an easy vehicle with which to assist the culture change that is often necessary to bring about lean operation comprises the following issues (Heizer & Render, 2014, p. 663):

- *sort/segregate*: keep what is needed and remove everything else from the work area; when in doubt, throw it out; identify non-value items and remove them. Getting rid of these items makes space available and usually improves workflow.

- *simplify/straighten*: arrange and use methods analysis tools to improve work flow and reduce wasted motion; consider long-run and short-run ergonomic issues; label and display for easy use only what is needed in the immediate work area.

- *shine/sweep*: clean daily; eliminate all form of dirt, contamination, and clutter from the work area.

- *standardize*: remove variations from the process by developing standard operating procedures and checklists; good standards make the abnormal obvious; standardize equipment and tooling so that cross-training time and cost are reduced; train and retrain the work team so that when deviations occur, they are readily apparent to all.

- *sustain/self-discipline*: review periodically to recognize efforts and to motivate to sustain progress; use visuals wherever possible to communicate and sustain progress.

US managers often add two additional Ss that contribute to establishing and maintaining a lean workplace:

- *safety*: build good safety practices into the above five activities.

- *support/maintenance*: reduce variability, unplanned downtime and costs; integrate daily shine with preventive maintenance.

Findings

In order to analyze the project of implementing KAIZEN methodology at ASSA ABLOY Romania I carried out a research consisting both of in-depth interviews with two members of the company's top management (the technical manager and one of the business units' managers) and documents examination. The research endeavor started from the assumption that if the KAIZEN system was adopted in the company the decision was appropriate, the results positive and the implementation process properly managed. In one case the interview was audio recorded, in the second one the interviewed refused this approach.

The scene

ASSA ABLOY is a relatively young business group established in 1994 by the unification of two companies. At that time, the two companies were leaders on their markets; one of the companies was from Sweden, the other one was from Finland. So, starting from ASSA Company and ABLOY Company the new established group was given the name ASSA ABLOY.

The group decided an organic approach as strategy of development, in fact to buy the local and regional market leaders for their specific domains of activity – no matter the country or even the continent.

In Romania, the market leader was URBIS, a state owned company with a long and substantial tradition and brand name. ASSA ABLOY initiated the process of acquisition and finally in 1998 the part of URBIS developing activities similar to those of the Swedish - Finnish group was bought – it seems that the price paid was close to 8 million dollars; it was the second type of production separated from URBIS after the acrylic baths.

The factory's personnel was very enthusiastic about the change of property; new methods and technologies were expected to be brought and implemented, it was a hope for new markets impossible to be approached until then. However, by the end of 2000 not to many things were changed, just some small production capacities were brought from

the western countries – especially regarding hot processes sectors such as foundry and galvanization.

The first significant transfer of technology took place in 2001 when an aluminum foundry and galvanization production capacity was brought from Norway. The period of time that followed, meaning the years 2002 – 2004, represented a permanent effort of assimilation of production capacities – another aluminum foundry from Germany, a door lock systems factory also from Germany and so on – mainly representing attempts to take advantage of the lower cost (both labor and energy) from Romania.

It did not take a long time for the company to get to a point where in fact "in the production facilities it was produced anything and everything", says the technical manager of the company. By 2005 – 2006 the diversification was way beyond imagination and organization's members were "specialized in everything". It is the first moment when the situation really seams concerning and there is an attempt to reorganize complex processes using manufacturing footprint approach. In fact, it was started a process of externalizing the hot processes sectors – also considering the reality that energy price, according to the agreements signed for joining European Union, were about to rise significantly. Parts of the production processes are relocated to China and sometimes India, ASSA ABLOY Romania being decided to remain for the time being only with the fabrication of door lock systems. Why "for the time being"? Because the truth behind relocation decisions was that of complete closure of the company.

An argument in favor of this intention is also the fact that in 2006 it was appointed as general manager a person specialized in closing complex production facilities. Nevertheless, during the stage of analyzing and outsourcing fabrication processes the general manager together with the top management of the company came to the conclusion that parts of the activities could and deserve to be maintained and even developed. However, at certain moments some actions seemed eventually contradictory – due to the antagonism of initiating measures to close parts of the factory in parallel with actions to improve elements of the technological chain. But

there is also a positive result: the group management starts to believe that there might be a chance for ASSA ABLOY Romania to remain functional – at least parts of it – and produce profits for the shareholders. In this respect in November 2008 the general manager is replaced by one intended to identify ways to reconstruct the business in Romania and make the company reliable on the market. From now on only hard work and a little bit of luck might save peoples' jobs.

The financial figures for the year 2008 were not good at all; in fact, at a level of 8 million euro sales ASSA ABLOY Romania encountered 4 million euro loss. The relocation process, started in 2007, was under intensive implementation; as planned by the group, it was suppose to be finished completely by the end of 2009 – hot processes sectors to China and India and door lock systems to a factory in Slovakia.

Here comes the drop of luck: the figures for the Slovak factory for 2008 were much worse. In fact, having sales of 2 million euro, the Slovak company registered almost 3 million euro loss. It is for the first time when at the group headquarters rises the idea of maintaining door lock systems production at ASSA ABLOY Romania instead of closing it and to shut down the company based in Slovakia.

In 2009 the process of relocating the hot processes sectors from ASSA ABLOY Romania comes to the end. At the same time, at the beginning of the year the new general manager brings the top management together, speaks to them about the need for a new strategy, about reconstruction, about restructuring and development. These are good news for people – future might be positive and jobs could be maintained. The members of the management team – and in fact the entire company – are with the general manager; everybody is minded for supplementary efforts and full involvement.

The project

The new general manager is a person with previous practical experience in LEAN management – experience acquired during several other assignments within Romanian branches of western companies. He is very

determined to be successful also at ASSA ABLOY Romania, to bring the company to positive results and maintain peoples' jobs.

The general manager starts individual discussions with the members of the company's top management team in order to identify each person's strengths and weaknesses and capability/potential to contribute to the change process. An idea devolves upon people during discussions: it is necessary to develop a strategy if intended to maintain the company on the market.

The general manager takes the management team outside Bucharest and spend we them several "thinking days". They work as a group, as a team, and results do not wait to show up: a strategy is elaborated together, in common, people feel about it as being their baby, that it is part of them. The general manager leads them during the process – but with intelligence and without direct and brutal involvement. At the very end of the thinking process, he declares: in two years I want other companies of the group to come and learn from us. It sounds as a dream, but people start to believe in this vision. Somewhere within the lines of the strategy, still foggy but steady supported by the general manager, LEAN and KAIZEN.

The strategy was oriented on three axes: business development, business excellence and cost efficiency. KAIZEN is included as part of the business excellence axis; based upon personal knowledge and previous practical experience the general manager draws a draft of KAIZEN's implementation – structure, phases, means of insertion.

Time constraints

The period of time intended to be allocated for the implementation of KAIZEN at ASSA ABLOY Romania was proposed to be of three years, 2009 – 2012.

Budget limitations

The budget was not communicated to the management team. However, the general manager advanced a seven digits figure as proposal to the group management – that for the three years mentioned above. It might

look a lot, but compared to the figures regarding the loss it really could be said that in fact it is not.

Technical level/quality performance

As regards quality issues, the progress to be encountered during the implementation process was supposed to be based upon the fulfillment of the action plans established step-by-step, stage-by-stage. However, an important milestone defined from the very beginning was that by the middle of 2010 ASSA ABLOY Romania to reach break-even – objective that was in fact fulfilled.

Supplementary risks

Like the internal problems were not enough, the situation – and consequently the implementation of the project – became more complex due to the group level decisions (code name: Dracula relocation program): four productions capacities from western countries – one of them being the door lock systems factory from Slovakia – were to be relocated at ASSA ABLOY Romania by the end of march 2011. Therefore, 2009 is an extremely difficult year, with hot processes sectors leaving the company and other production capacities coming and replacing them. Once again, the need for a new way of organizing and doing things in the company became obvious. Moreover, at the beginning of 2010 ASSA ABLOY's management is informed at a group meeting in Amsterdam that Dracula relocation program needs to be shortened with 6 months. They are told that if supplementary problems occur, no one would blame them; however, when it comes to practice, during the next months whenever something goes on wrong the company's management is criticized. As it is said success has a lot of fathers but failure is orphan.

Project management team

In fact, it cannot be identified and discussed about a project team specifically designed to manage the endeavor of implementing LEAN and KAIZEN techniques at ASSA ABLOY Romania. The general manager – relying on his previous experiences, assumed the entire management of the process.

The general manager is aware about the low level of cognition the top management team has about LEAN techniques. Bearing that in mind, at the end of 2009 he decides that if it is for KAIZEN's implementation to be successful at ASSA ABLOY Romania it must be done with the help of professionals, of the best consultancy team available on the market in Romania: the KAIZEN Institute.

But is this a guarantee that everything would go on smoothly? It did not take a long time to have the answer to this question. A complex training program is designed by the Institute's experts; it is composed both of training sessions out of Bucharest and workshops at the premises of the company. The training program is split on segments following KAIZEN's logic. However, after the first session of training the general manager is totally dissatisfied and considers that the standard package offered by the Institute does not respond to the company's practical needs. After a tense meeting between the ASSA ABLOY's general manager and KAIZEN's Institute manager it is decided that from that point forward the working procedure will be the following: the general manager proposes the theme, the Institute materials are tailored accordingly and than approved by the general manager. The training sessions are featured as applicative, with lots of useful examples for the managers participating at them – the large majority being engineers. The general manager was capable to put pressure on the Institute's consultants – and that was an extremely important positive factor. After defining this procedure things developed orderly and in a constructive manner.

2010 was a cornerstone for acquiring the necessary knowledge for implementing KAIZEN. "KAIZEN is a methodology to be implemented from the top level to the bottom, but it becomes functional when it works according to a bottom-up approach" says the technical manager. Five training sessions were organized out of Bucharest with ten people representing the top management of the company. Each training session last two days – from Friday to Sunday – and the general manager participated side by side with his subordinates. From KAIZEN Institute there were two trainers permanently. At the same time, at the premises of the company there were organized twenty workshops with middle managers. Eight persons participated at each of these workshops and two external consultants were coaching them. Important aspect: the top

management has to be present at the beginning and at the end of each workshop day! Also, at the end of each training session/workshop an action plan is elaborated – including milestones, deadlines, and responsibilities. By the end of the year a total budget of almost five hundred thousands euro was spent.

In 2011 the implementation process continued. It was the year when the main part of the efforts was concentrated on middle management's development. The budget spent during that year totalized almost three hundred thousands euro.

The insertion of KAIZEN techniques into the company continues even today. ASSA ABLOY Romania is still working with the KAIZEN Institute especially if it is to approach new areas to be developed – such as total service management, for example. Therefore, the 2014 budget does not reach more than about thirty thousands euro. Practically, the progress of the KAIZEN's implementation project has been measured all the time using the evolution registered by the factory's activities. Today, the company has a LEAN manager – member of the top management, subordinated directly to the general manager. The LEAN manager generally leads the workshops and supervise the accomplishment of the action plans adopted during the workshops; also, he is auditing each business unit and is involved in the yearly LEAN assessment of the company within the group. In this respect, in 2009 ASSA ABLOY Romania was situated on the 26th place out of the 40 companies of the group. Since then, things changed significantly: in 2012 the organisation was situated on the first place together with a German company and in 2013 on the second place.

So the general manager's vision of having other companies from the group taking lessons from ASSA ABLOY Romania became true. Meanwhile the general manager was promoted in the management team at the group level – Chief Operating Officer ASSA ABLOY Eastern Europe. During the last two years the LEAN manager delivered more training sessions to other companies from the group than internally. Paradoxically, this situation affected the company's performance – mainly due to the fact that KAIZEN is not yet part of the staff behaviour in an organic indestructible manner. It could not be said yet that people are coming up front with

new ideas and new initiatives in a systematic manner. Quality problems reappeared, delivery time increased again. "We started teaching others and became careless" says the technical manager. "That happened also having as background a huge extension of production: from four million euro sales in 2009 to nineteen million euro in 2013 and twenty two million euro estimated in 2014."

As Professor Masaaki Imai – founder of KAIZEN Institute Global – stated when he visited ASSA ABLOY Romania, the company is a gold mine, meaning that there is a lot of work to be done to bring the gold at the surface.

Conclusions and implications

The experience developed at ASSA ABLOY Romania is an encouraging one. Despite tremendous drawbacks the company successful managed to cross the difficult periods and implement a really significant change within.

Nevertheless, some lessons should be drawn from the KAIZEN project's implementation and the implications of specific actions – positive or not – remembered.

Deploying lean thinking often starts and is maintained through kaizen events. A kaizen event can take between two days and one week and is focused on creating significant improvement in performance (quality, speed, cost) in one particular area of operations. An important point to understand about implementing lean is that deploying lean thinking may sound simple but is in reality very challenging. It is not a decision to be taken lightly or without a sustained commitment. It requires a change in philosophy and culture along with changes in practices.

A good start is to establish a team of employees to study the process/ processes that needs improvement. These employees should come from different functions and levels of the organization to represent all stakeholders involved with the process. It was not exactly the case for ASSA ABLOY Romania – mainly due to scarce training in LEAN management of the

personnel. Nevertheless, the approach of defining together, as a team, during training sessions and workshops the action plans with deadlines and responsibilities is definitely a sound process.

The above-mentioned team should place as central point and determine what the customer values. In the case analyzed by this paper the process was developed mainly under the threat of closure – so the company was already in the red zone. The customer can be internal (the next process) or external to the organization. However, it must be not forget that the customer is the only one that can specify what is valued in the good or service.

As demonstrated during KAIZEN's implementation, no doubt that the adoption of the 5S technique is useful in order to be able to construct a value stream map of all process steps and of the associated times or value that is added. The analyze of the value stream map helps to eliminate non-value-adding activities. It is the customer demand that should be used to pull the flow of work through the process. In fact, do not produce until output is required by the customer – let the customer signal when work from the process is needed.

ASSA ABLOY Romania implemented during the last five years a series of necessary changes identified during training sessions and workshops in order to achieve lasting improvement. At this moment the company is in the situation of preserving the gains and then repeat the cycle on another process internally or extend lean implementation beyond internal boundaries to the processes of suppliers up the supply chain and, potentially, customers down the supply chain. Even if not completely, the cultural change took place and it can be concluded that at ASSA ABLOY Romania we witness Japanese methodology in our country. So why not disseminate it?

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References

Burtonshaw-Gunn, S.A. (2010). *Essential Tools for Operations Management. Tools, Models and Approaches for Managers and Consultants.* Cornwall: John Wiley and Sons.

Burtonshaw-Gunn, S.A. (2008). *The Essential Management Toolbox. Tools, Models and Notes for Managers and Consultants.* Hoboken: John Wiley and Sons.

Burtonshaw-Gunn, S.A., and Salameh, M. (2009). *Essential Tools for Organizational Performance. Tools, Models and Approaches for Managers and Consultants.* Cornwall: John Wiley and Sons.

Christopher, M. (2011). *Logistics and Supply Chain Management.* Harlow: Pearson Education Limited.

Fogarty, D.W., Blackstone, J.H.JR., and Hoffmann, T.R. (1991). *Production and Inventory Management* (2d edition). Mason: South-Western Publishing Co.

Heizer, J., and Render, B. (2014). *Operations Management. Sustainability and Supply Chain Management*. Essex: Pearson Education Limited.

Imai, M. (2009). *Gemba Kaizen. O abordare practică, cu costuri reduse, a managementului.* Bucharest: FINMEDIA.

Jacobs, F.R., and Chase, R.B. (2013). *Operations and Supply Chain Management. The Core* (third edition). New York: McGraw-Hill/Irwin.

Kamauff, J. (2010). *Manager's Guide to Operations Management*. Madison: McGraw-Hill by CWL Publishing Enterprises.

Kerzner, H.R. (2013). *Project Management. A Systems Approach to Planning, Scheduling, and Controlling* (eleventh edition). Hoboken: John Wiley and Sons.

Kerzner, H.R. (2013). *Project Management. Case Studies* (fourth edition). Hoboken: John Wiley and Sons.

Khan, O., and Zsidisin, G.A. (2012). *Handbook for Supply Chain Risk Management. Case Studies, Effective Practices and Emerging Trends.* Fort Lauderdale: J. Ross Publishing.

Larson, E.W., and Gray, C.F. (2011). *Project Management. The Managerial Process* (fifth edition). New York: McGraw-Hill/Irwin.

Ohno, T. (2005). *Sistemul de Producție Toyota. O Alternativă la Producția de Serie*. Bucharest: FINMEDIA.

Schroeder, R.G., Goldstein, S.M., and Rungtusanatham, M.J. (2013). *Operations Management in the Supply Chain. Decisions and Cases* (sixth edition). New York, NY: McGraw-Hill.

Shenhar, A.J., and Dvir, D. (2007). *Reinventing Project Management. The Diamond Approach to Successful Growth and Innovation*. Boston: Harvard Business Press.

Slone, R.E., Dittmann, J.P., and Mentzer, J.T. (2010). *The New Supply Chain Agenda. The 5 Steps that Drive Real Value.* Boston: Harvard Business Press.

Stevenson, W.J. (2012). *Operations Management. Theory and Practice*. London: McGraw-Hill Education.

Vollmann, T.E., Berry, W.L., Whybark, D.C., and Jacobs, F.R. (2005). *Manufacturing Planning and Control Systems for Supply Chain Management*. New York: McGraw-Hill.

Zylstra, K.D. (2006). *Lean Distribution. Applying Lean Manufacturing to Distribution, Logistics, and Supply Chain.* Hoboken: John Wiley and Sons.