

Human factors in lean implementation management essay



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This paper reviews literature on Lean implementation in manufacturing organisation with special emphasis on role and importance of the human factors in its success or failure.

A multitude of research has been conducted on different aspects of Lean Production. However, in defining Lean, scientists and practitioners present various conclusions. Summers (2011) states that Lean is an “ approach” used to improve performance while Ortiz (2008) goes step further calling it “ a powerfull and effective improvement philosophy”. Although those two descriptions might seem quite relevant as general definitions, they lack technical precision. It can be assumed without a doubt that Lean is closely connected to the guiding principle of improvement either as an approach or a philosophy, but it seems like that kind of interpretation of the idea of Lean is just merely touching the surface of more complex structure, and to explain its true essence it needs to be analysed further. Closer to the core of what Lean represents seems to be defining it as a “ management philosophy” focused on identification and elimination of waste applied not only within the organization but also outside of it, along the company’s supply chain network (Sherrer-Rathie et al. 2009). Shah and Ward (2003) add more describing Lean as a system with main purpose in elimination of waste and of internal and external variability.

In the American Production and Inventory Control Society Dictionary (APICS in Papadopoulou & Ozbayrak 2005) we read that Lean is a philosophy focusing on minimizing resources, applied to different areas in the organization; it also involves: “ teams of multi-skilled workers at all levels of the organization.” In this definition as well as in the one proposed by Krafcik <https://assignbuster.com/human-factors-in-lean-implementation-management-essay/>

(Krafcik in Papadopoulos&Ozbayrak 2005) another element of the Lean is mentioned. These definitions include human participation, delineated as a well trained worker employed to perform within different levels of the system, and Krafcik talks about human involvement in terms of human effort.

MIT researchers argue that Lean could be understood as a set of tools and methods, but could also be viewed as a key change in the way people in a company think, consequently changing the way they act (Bozdogan et al. 2000). In this definition Lean is characterized as a set of beliefs and behaviours transcending through the organization (Bozdogan et al. 2000).

Time has come for an attempt to create a new eclectic definition drawing and combining all the aforementioned thoughts: a schematic picture emerging from the analysis is that Lean, as a management philosophy, is also a system of improvement through eliminating the waste (including human effort) and through change in the organizational mindset, whose application is extending beyond the organization itself and is influencing the external aspects of the company. This definition, as imperfect as all the others proves not only that the meaning of Lean is as broad as the range of its application, but most of all it makes us realize that to create a definition comprising all its dimensions is a great challenge (Pettersen 2009).

There is no agreement in the literature on definition, however there seems to be good understanding of the characteristics describing the concept, allowing us to conclude that the concept of Lean can only be defined in functional terms (Pettersen 2009).

As Pettersen (2009) noticed, Hines et al. (2004) imply that it is hard to define Lean because of its dynamic character and its constant evolution, suggesting that any attempt to create such a definition will only represent a static image of a moving objective true and adequate only in a certain point in time. The question how to define Lean has multiple answers and should be replaced with one asking if we really need to know the definition to conduct research.

Drawing conclusion that the broad possibilities of interpretations of what Lean is make it more difficult for the researchers to ask questions about how Lean affects people, increasing the necessity that they specifically define which aspect they are researching (Parker 2003).

1. 2 People in Lean- definition

Looking at different definitions of Lean we are tempted to assume that people play both a secondary role of the “ components” of the concept (Anvari et al. 2011) having equal importance to any other of the elements in the Lean “ philosophical system” (Shah&Ward 2003; Sherrer-Rathie et al 2009). At the same time, people are the centre, the source and main drivers of the mindset of the Lean (Bozdogan et al. 2000). They create it as much as they are a part of it.

2. Lean implementation

2. 1 Commitment and Leadership

Human factors play an important role in Lean implementation (Yan&Jacobs 2009); the commitment from managers and involvement of lower level

employees are the key factors of a successful transition into the new system (Ortiz 2008; Sawhney and Chason 2005).

2. 1. 1 Management's Commitment and Leadership

Emiliani and Stec (2005) state that the main responsibility for successful deployment of Lean and building a Lean organization lies with the leaders, the senior management, whose commitment is the very first step in successful transition and has motivating influence on the lower-level employees (Alavi 2003). Nevertheless for the success to happen they must be ready to embrace all dimensions of Lean (Parks 2003) avoiding adoption of only selected tools of the entire system therefore preventing the danger of falling into a trap of the "imitation Lean" (Emiliani&Stec 2005) or "kindergarten Lean" (Parks 2003). Boyer (1996) suggests that the management commitment to quality leadership is one of the foundations of Lean production, but "supporting commitment" defined as active investment into developing workers capabilities is needed for long-term positive results.

According to Kotter (2007) the change in senior management's behaviour is needed to encourage lower level employees to get involved in the transformation. Emiliani (2003) argues that implementing Lean means changing management's fundamental beliefs about how to conduct a business, implying that the change in behaviour occurs through the Lean system (a system of leadership values itself) that carries a change in management beliefs which leads to change in behaviours and over time in

creation of certain management competencies (Niepce&Molleman, 1996) or as Al-Najem et al (2012) suggest of a “ philosophical leadership”.

Worley and Doolen (2006) recognize that management drives the Lean transformation process and, as they notice, they must directly participate in transition. Kotter (2007) underlines the importance of the consistency in the managerial commitment to the change as an important success factor in the implementation of a new idea. However, even organizations with the most committed management are not free from conflict and resistance to change due to “ legacy costs” of the previous system (Sim&Rogers 2008).

Commitment is crucial for succesful accomplishing new system implementation, paradoxically, overcommitted, zealous managers can jeopardise all the transition initiative by initiating too many projects at the same time or distributing the resources improperly (Molinsky 1999).

2. 1. 2 Management Commitment vs. Lower Level Employees' Commitment

Management commitment and appreciation for employees' effort and skills is vital not only to encourage transformation, but to ensure that worker's strive to achieve Lean goals is stimulated and sustained, thus the initiative does not loose the momentum (Worley&Doolen 2006; Achanga et al. 2006). Worley and Doolen (2006) argue that manufacturing effort could fail if workers feel lack of respect for their effort.

The lack of commitment and interest in Lean in executive management circles may cause a situation when employees participating in a Lean initiative are not aware of the importance of the project, or how it is

connected to the other Lean activities which are being implemented at the same time (Sherrer-Ratje et al. 2009; Ortiz 2008). This impedes upon the understanding of the meaning and the purpose of the transition in the entire organization (Worley&Doolen 2006).

Emiliani (2005) suggests that senior management's passive attitude towards Lean events may negatively impact the lower level employees' perception of their leadership and affect employees' overall interest in Lean (Sharrer-Rathje et al. 2009; Crute 2003).

Managers may not be able to recognize the fact that Lean implementation is a "holistic" process (Bozdogan et al. 2000) and its success or failure depends on many factors (Worley&Doolen 2006). If employees expect changes but do not see results of the new project, their disappointment may influence their attitude towards Lean initiatives, and they may not be supportive in the future. That is why management should commit to setting short-term and long-term goals to achieve consistent transition (Worley&Doolen 2006; Kotter 2007).

Commitment of the executive management creates more positive feelings and attitudes towards management and what follows towards the change itself (Worley&Doolen 2006; Alavi 2003). The fact that the executive team assumes direct role in leading the implementation also strengthens the importance of the new endeavour in the eyes of the lower level employees (Worley&Doolen 2006) who through modelling (Miltenberger 2004) follow the example (Balle 2005). Still the modelling works both ways and the employees might follow good or bad behaviours (Kotter 2007).

Senior management may fail to understand how the Lean implementation can influence communication in the organization and acknowledge that it is their own responsibility to provide employees with necessary information on the Lean manufacturing initiative, why it is needed, and also with resources like materials and time to facilitate employees involvement in the Lean initiatives (Worley&Doolen 2006).

2. 1. 3 Respect for People

Hines et al (2004) argue that Lean should be thought of as more than just a set of tools and methods, and the human aspects like empowerment (Boyer 1996; Gratchalian 1997; Biazzo&Panizzolo 2000) motivation (Vidal 2007) and leadership's respect for people (Worley&Doolen 2006; Emiliani&Stec 2005) are the key factors to the successful Lean implementation and sustainability in any industry. Scales have been developed to assess empowerment, motivation and many other aspect of the Lean, we could ask how is the respect for people manifesting in the system and if it really exists, especially in the light of the research proving adverse effects of Lean production on workers health (Parker 2003; Landsbergis et al. 1999) or worker's claims that the management " used the production system against them" (Bruno&Jordan 2002).

2. 2 Communication

Communication is a crucial and integral part of the business environment (Puvanasvaran et al. 2009). It is very important that the information regarding the implementation of Lean is explicitly communicated to all

employees: from top executive managers to manufacturing floor workers, as <https://assignbuster.com/human-factors-in-lean-implementation-management-essay/>

the communication process will open the way for people in the organization to understand and accept the new concept (Banuelas-Coronado&Anthony 2002). This will help if not prevent a resistance towards changes in their work (Puvanasvaran et al. 2009).

Communication is a powerful tool for executives in promoting changes in their organizations. Therefore an effective communication process at all levels is crucial for a lasting success in Lean manufacturing implementation (Puvanasvaran et al 2009, p. 148) and leader's communication skills are vital for conveying ideas (Emiliani 2003). To ensure the successful implementation of Lean there is a need for every member of the organization to be informed and understand the concept of Lean and the process of its implementation (Puvanasvaran et al 2009) and also to make all employees aware of the management's vision of the new change (Kotter 2007).

Worley and Doolen (2006) argue that increased communication is a clear example of non economic benefit of Lean implementation and it is particularly important in a manufacturing environment where various shifts are operating and state that its importance could be overlooked by the executives. However Melton (2005) argues that only the regular communication can advance the continuous improvement and workers should be aware of progress and setbacks.

Examples of poor communication as an aftermath of the implementation also appear those include communication between different departments of the company (Worley&Doolen 2006). Lack of proper communication and information might result in employee's indifference, reluctance in cooperation

and jeopardise all the transformation. Employees enthusiasm might positively assist in the transformation (Yan&Jacobs 2009).

3. People and Culture Change

3. 1 Culture Change

The transition into Lean is particularly difficult because it is more than just manufacturing transformation. It is a culture change in organization (Alony&Jones 2008) manifesting as a change in individual and collective behaviours (Al-Najem et al. 2012), with the most frequent problems associated with the workforce identified as: resistance to change, lack of necessary job skills, low morale (Sawhney&Chason 2005). That is why for a successful Lean transition, it is thus necessary to first understand the people's expectations and the job design and to ensure the acceptance of the system by the people (Sawhney&Chason 2005).

Why do people oppose change? According to Alony and Jones (2008) employees' reservations could be caused by their expectations of injustice coming as a result of shifting into a new work pattern (rather than injustice itself) or fear of social change as such (Lawrence 1970) could also be a source of their resistance. Stress also could be a factor in resistance to organisational change (Vakola&Nikolaou 2005).

Considering an organization's culture and the related employee behaviours is a vital element of implementing and sustaining new system. It is crucial to recognize the importance of employee behaviour in an organization to allow to assess an organization from that perspective and to provide better

understanding of the weak points in system transformation process, but also of the problems of the new system sustainability within an organization (Shawney&Chanson 2005).

Kotter (2007) argues that to introduce a change and make sure it becomes a part of the corporate culture it is vital to systematically and consciously make people aware of how the new attitudes, behaviours and approaches help in improving performance.

3. 2 People

As stated in part 2. 2 of this paper when Lean is implemented in an organisation without discussing changes with employees it might cause feelings of resentment towards the change and employees themselves might feel excluded and insignificant as members of the organisation. Ignoring attitudes and feelings of the employees can lead to negative implications for the implementation of the system (Yan&Jacobs 2009). Trust and respect between workers and management is very important for advancing the implementation (Strebel 1996), Alony and Jones (2008) argue that lack of such an understanding and trust prevent workers from participating in improvement initiatives.

Alony and Jones (2008) argue that socialisation within the team plays vital role in creating company culture and follow with an example that if two people's assumptions about each other could disrupt possible cooperation. Lean is often criticized for creating a working environment with little staff and time redundancy (Delbridge in Alony&Jones 2009) limiting the possibility of social interactions therefore negatively impacting intercommunication <https://assignbuster.com/human-factors-in-lean-implementation-management-essay/>

between workers. Social side of the work environment suffers when the contact with co-workers is limited because of increase in work pace and stress (Alony&Jones 2009; Eklund&Berglund 2007).

Boyer (1996) and Wong (2009) as well as Bhasin and Burcher (2006) maintain that the key to success of Lean is workers' empowerment, as the workers are the ones, who know the process the best and have the most potential to find the ways for advancing (Forrester 1995).

Shawney and Chanson (2005) argue that even if the implementation of Lean contributes to better quality, increased productivity and good design of the working environment (Eklund&Berglund 2007) improvements in employee behavior are barely noticeable. Possible reasons for that could be either the fact that the implementation has very little impact on the performance measure, or possibly human behaviour is not integrated into the Lean transformation process (Shawney&Chanson 2005).

Shawney and Chanson (2005) seem to agree with the possibility that employees can not sustain and support the system change which according to them is one of the main reasons for Lean implementation failure.

According to Emiliani (1998) " behavioral productivity" is as significant as the manufacturing one therefore Lean concept of limiting the waste should apply not only to the elimination of physical waste, but also " behavioral waste" (Shawney&Chanson 2005).

4. Training

Ortiz (2008) suggests that the resistance to modifications is mainly caused by the lack of proper training, which causes misunderstanding of the process, procedures and the new environment and the successful implementation of Lean depends on properly trained employees capable to sustain the change and the continuous improvement (Boyer 1996). That is why education is needed.

One of the reasons of failure of a new system implementation can be attributed to the management's inability to provide education and training (Worley&Dooley 2006) as Lean is a process based strongly on people's ability to respond to changing environment and on their skills.

Although Lean system's success depends on worker's education, knowledge, self-discipline and motivation (Worley&Dooley 2006) the expectations that training and training only will make Lean happen are not realistic (Shawney&Chanson 2005). Lean is a complex system and its success or failure depends on many human and non human-related factors.

4. Summary

During the review of the the literature four areas in Lean implementation where human factor play important role were identified: commitment and leadership, communication, culture and training (Banuelas Coronado&Anthony 2002; Anthony&Banuelas 2002) and some of the issues concerning human contribution to success or failure of Lean implementation were addressed.

It is impossible to negate or ignore the importance of the human aspect of Lean when conducting research. People make Lean happen, they as much create it as they are part of it; they are its Architects and its Builders.

However there is a serious dissonance in the system, which paradoxically does not seem to embrace fully the human factors and by lacking respect for its own Builders' input, limiting social interaction needed to create positive working relations, inducing stress and causing depression, is stripping human factors of humanity, questioning Architects' design abilities or their intentions. It is worth to remember that people are still those, who create and program the machines and their humanity is supposedly what makes them superior to them (Yan&Jacobs 2009).