

RESPECT FOR PEOPLE: THE FORGOTTEN PRINCIPLE IN LEAN MANUFACTURING IMPLEMENTATION

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Abstract

Nowadays companies live in a constant changing world where customers demand better products, higher quality and shorter delivery times. To achieve these customers requirements companies look for strategies, methodologies and/or philosophies that may help them to increase their productivity, and Lean Manufacturing (or Toyota Production System) has been one of the most popular in the last decades. But in the eagerness of being more productive managers mainly focus on the technical part of Lean and forget about the second and equally important principle “Respect for People”. In this paper this “Respect for the People” principle is discussed, and its meaning is explained based on the explanation of several experts in the field. At the end, a small field research (based in semi-structure interviews) of the topic is explained. The present paper is a qualitative research with the purpose to explore and get a deep knowledge about the “Respect for People”, and how department managers perceive and work this principle in their job.

Keywords: Lean Manufacturing, Respect for People, Implementation

Introduction

Globalization is making a more competitive world every day; companies must deal with worldwide competition, they need to adapt quicker to changes and respond to more demanding customer requirements. To be able to survive to this competition many companies are looking into the implementation of the Toyota Production System (TPS) or Lean Manufacturing (LM) and make an effort to produce their goods with an efficient cost, pioneer quality and just in time (JIT) delivery (Behrouzi and Wong, 2011), also Nordin N., Deros B. and Wahab, D. (2010) states that manufacturing firms has taken LM system as a great management tool and

many of them have adopted lean techniques in many different forms and names.

A common definition for LM is that, it's a set of tools and techniques used for continuous improvement and seek the elimination of all types of waste in the production process (Gonzalez, 2007; Anvari, A., Norzima, Z., Rosnay, M., Hojjati, M., & Ismail, Y., 2010; Vinodh and Chinta, 2011; Eswaramoorthi, M., Kathiresan, G., Prasad, P. y Mohanram, P., 2011; Kumar, 2014), but this definition as it is, only mention half of what LM is about, "Continuous Improvement" is one of the two principal pillars for LM or TPS, the other pillar is "Respect for People" and it is very common that the implementation team forget about this important part of LM.

Implementation is a hard task that needs the true involvement of a team and a high commitment of the upper management (Ramesh, V., Sreenivasa, K. y Srinivas, Y., 2008). The implementation team must not focus only on the technical preparation of all the employees; they also need to put a lot of attention on the human side of LM in order to have a successful implementation.

This article is divided as follows:

- 1) Introduction.
- 2) Brief history of LM.
- 3) Lean Manufacturing.
- 4) Lean Manufacturing Implementation.
- 5) Respect for people.
- 6) Field Research Interviews (Pilot Run).
- 7) Conclusions.

Brief history of LM

LM The origins of TPS are traced back into the late 1800's when inventor Sakichi Toyoda designed and patented a manually operated loom for weaving cloth that greatly improved worker productivity and the quality of the cloth, years later his son Kiichiro designed and patented many new loom features, including improved mechanisms invented by his father that would automatically stop the machine when a thread broke, thus avoiding the production of defective cloth (Emiliani, 2006). These innovations founded the key objectives of Toyota's early management practice have been characterized as "production efficiency by consistently and thoroughly eliminating waste", and "the equally important respect for humanity" (Ohno, 1988), later on, these two objectives were presented as top-level company principles: "continuous improvement" and "respect for people", and it is the second practice the one that is discussed on this article.

After WWII Japan got into a deep economic crisis, they had shortages of all type of resources: materials, financial and human, so, TPS

was developed to survive with the minimum amount of resources, due to the vast shortages of material, financial and human resources, so, Toyota was forced to choose the waste reduction policy in the shop floor as a strategic goal in order to survive (Behrouzi and Wong, 2011).

During the hard economic conditions, Toyota sustained and prospered because of the high efficiency and productivity of its production system. Accordingly, the lack of resources which was originally an obstacle to this company became an opportunity to make Toyota a world-class manufacturer (Behrouzi and Wong, 2011).

Toyota continue working with this philosophy based on the amazing results they were having and keep improving it, and when the oil crisis hit the automotive industry in 1973, Toyota kept increasing its earnings and its market share (Mohanty, R. P., Yadav, O. P., & Jain, R., 2007). This condition caught the attention of all the world automakers and the TPS started to be studied worldwide.

Finally the term of LM was coined after years of investigation and with the famous book “The Machine That Changed the World” written by Womack, Jones, and Ross (1990) awoke the US manufacturers.

LM was accepted as an innovative paradigm-that eliminates waste in any form, anywhere and at any time, relentlessly strives to maintain harmony in the flow of materials and information, and continually attempts to attain perfection. Mohanty et al (2007) mention that Ohno (1988), Shingo (1989), Womack et al. (1990), Monden (1997) and many other researchers made wide ranging contributions to popularize the lean approach.

Lean Manufacturing

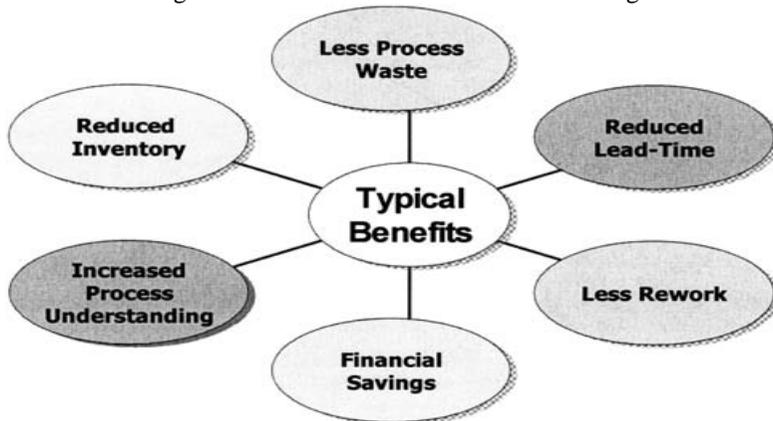
LM is defined by previous authors and researchers in a wide variety of forms and point of views. In table 1 it is a summary of 20 different authors and how their definitions relate among all of them. These 20 authors were selected by doing a literature review of articles and researches about LM, starting with Womack and Jones the authors that give LM its name, the rest of the authors were chose looking for variety on their type of research and the year of publication. This summary helps to understand how much the authors agree on what is LM, and as a result the four concepts more mentioned by the authors are:

- 1) LM as a system dedicated to eliminate waste, 90%.
- 2) Coupled to Continuous Improvement and to increase customer satisfaction, 45%.
- 3) A methodology for cost and resources reduction, 45%
- 4) Set of tools, 35%.
- 5) Only 3 authors (15%) mentioned something related to the human side of LM.

The summary of definitions provide an idea of the tendency the authors have and allow to understand how LM is perceived. But one thing is true, at the end, the companies does not care for the definition of LM, the companies seek to implement LM for the benefits it will bring, Melton (2005) define such benefits in Figure 1.

These typical benefits mentioned by Melton (2005) that companies are looking for with the implementation of LM are not gained automatically after learning some of the basic tools or just by having the authorization by the management of applying these methodology, LM implementation is a difficult and long task where it is needed the involvement of all the personnel of the company and a true and honest commitment of the top management.

Figure 1. The benefits of Lean Manufacturing



Source: Melton, 2005.

LM Implementation

As mentioned previously, the hard economic crisis was a huge driver for Toyota (and the rest of Japan) in order to force all the waste reduction to a minimum (in LM exists eight types of waste: Defects, Overproduction, Overprocessing, People Movements, Material Movements, Waiting, Inventory and People Talent) and seizing the maximum the resources.

For Anvari et al (2011), a crisis (financial, sales, profit, etc) is one of the three basic requirements (together with management commitment and LM knowledge) in his dynamic model for Lean implementation, probably this requirement is not mandatory, but it is true that if a company is not in crisis circumstances, i.e. if the company is in a stable condition, will be harder to apply all the LM concepts because it will be difficult to break the paradigms that are making the company to be in that good shape, it is common that people will say “if is not broken why fix it”.

LM implementation is not an easy task; there are many possible causes for failure or barriers at the moment of implementing it, from technical deficiencies to cultural issues.

Table 1. Summary of Lean Manufacturing definitions.

Author	Definition	System dedicated to waste elimination	Coupled to Continuous Improvement and to increase customer satisfaction	Set of tools and techniques	Cost and resources reduction	Process management	Project management	Dedicated to establish a continuous flow	Socio-technical System	Employee Involvement
Womack and Jones (1990)		1	1		1					
Snedo (1994)					1			1		
Adams et al (1999)		1	1					1		
Muda and Hendry (2002)		1			1					
Melton (2005)										
Lummus et al (2006)		1			1					
Lim (2008)		1			1		1			
Taj & Berro (2006)		1								
Eumar et al (2006)		1		1						
Gonzalez (2007)		1	1		1		1	1		
Hovardell (2008)		1			1					
Anvari et al (2010)		1			1				1	
Hueho-Brown y Murray (2010)		1	1	1		1				
Noedin et al (2010)		1								
Podrara (2010)		1	1	1	1	1		1		1
Anvari et al (2011)		1								
Vinoth and Chitra (2011)		1		1						
Sinha and Jaisankar (2012)		1	1		1		1			1
Wahab et al (2013)		1	1							
Eswaramoorthi et al (2011)		1		1		1				
Total		18	9	7	9	3	3	4	1	2

Source: Own creation

Mejabi (2003) indicates that are many possible failures that can occur while trying to implement lean manufacturing, these barriers fall into the following categories:

- Executive issues
- Cultural issues
- Management issues
- Implementation issues
- Technical issues

Besides the issues indicated by Mejabi (2003) some other must be considered: human issues, social issues and the interaction of all of them. These human issues are different than cultural issues, on the cultural issues it is referred on how people respond to the implementation of the tools or techniques, for example, Paipa-Galeano (2013) indicate in his thesis that the tool of 5S is not as easy to implement in some countries as is in Japan, mainly due to the difference in how the Japanese culture have more tendency to the order, cleaning and following standardization than other countries. The human issues are referred on how people react to the way they are treated inside their organization and how they are involved into the process of the implementation of LM, i.e. how companies implement the pillar of “Respect for People” in their organizations, if employees feel that the management team does not respect their efforts, discouragement may appear and the lean manufacturing effort will fail (Puvanasvaran, A., Megat, M., Tang, S., Muhamad, M., and Hamouda, A., 2008). In this paper these social and human sides of LM will be analyzed and how they are related to the “Respect for People” LM pillar.

Respect for People

The two main principles of LM are: “Elimination of Waste” and “Respect for People” (Taleghani, 2010), considering those two principles it is understandable why Anvari et al (2011) define LM as a SOCIO-TECHNICAL system.

“Respect for People” principle may look as a relatively new idea for a lot of management teams, Emiliani (2008) indicate that this is part because there have been limited true successful Lean transformations and because most of the other aspects of Lean Management system have been studied in detail, so this is the next territory to explore. Senior managers must realize that they are embracing for the first time a principle based system of management whose objective is to change the way all work activities are performed, not just those in operations (Puvanavarman et al, 2008).

The concept of “Respect for People” has been around for many decades, but only in rare occasions has been place in practice by senior managers (Emiliani, 2008) and due this it has been in the dark for so long. Back in the late 1800’s the companies noticed that they need to improve the cooperation between management and the workforce because poor cooperation increased costs.

Then at the beginning of 1900’s Frederick Taylor (considered as the father of scientific management) came up with a revolutionary way of management, enhancing the importance of cooperation and respect. In 1903, Taylor wrote the paper “Shop Management”, mentioning that the mistake of most of the managers is to try to influence a large amount of workers, instead of taking one at a time (Emiliani, 2008).

Knowing this new approach in management, Toyota adopts it and converts it in one of their main principles. Emiliani (2008) mentions several leaders of Toyota that refer to this principle in their memoirs, including: Shotaro Kamiya (former Toyota Motor Sales Chairman), Fujio Cho (Former Toyota Motor Corporation Chairman), Seisi Kato (former Toyota Motor Sales Chairman), Taiichi Ohno (former Executive Vice President of Toyota Motor Corporation), among others.

From both principles the “Respect for People” seems to be the easier to understand but actually it is not, Emiliani (2008) indicates that most of the mid and senior-level managers thin they know what “Respect for People” means, but it is clear from leadership behavior’s, common business performance metrics, management’s decisions and sometimes even corporate strategy, that they don’t.

So, if it is so difficult to understand the true meaning, how can the managers implement it? The first step must be to comprehend what this principle means to experts on LM or TPS system. A few of these meanings are presented next, followed for a brief analysis:

Fujio Cho (Sugimori, Y., Kusunoki, K., Cho, F., & Uchikawa, S., 1977) explains it as follows:

- "... the respect for human system where the workers are allowed to display in full their capabilities through active participation in running and improving their own workshops... which is the most distinctive feature of Toyota's respect for human system.
- "Toyota firmly believes that making up a system where the capable Japanese workers can actively participate in running and improving their workshops and be able to fully display their capabilities would be the foundation of human respect of the highest order.
- "It is not a conveyer that operates men, while it is the men that operate a conveyer, which is the first step to respect for human independence".

It is important to note how Fujio Cho gives a high importance to the workers capabilities, and how they are allowed and encouraged to improve their own workshops. The respect to the workers is shown in a way of having trust in them and respects the worker's ideas. The last quote it is real interesting, it is important that managers understand that their most valuable asset is the people, there are who operates the machinery, design products, fix the equipment, program the automatic systems, drive the vehicles and so many more activities that still machines cannot do by their own, and this is why managers needs to pay more attention to their workforce.

Another description of "Respect for People" principle is given by Seisi Kato (Kato, 1981):

- "I adopted what I call the three C's, standing for Communication, Consideration and Cooperation. What they signify is both a method of personal communication and a method of management. Handling down orders is not leadership, nor is issuing policies enough to constitute business relationships. In my view, leadership is a process springing from dialogue that reaches the level of true communication, followed by sincere efforts at cooperation based upon mutual consideration and understanding of each other's position".

It is noticeable how important is communication for Mr. Kato, and even though that he did not mention the word "respect for People" it is understandable that he is showing the respect by applying his three C's method. One interesting concept that he include is "leadership", for him leadership must be born from dialogue and this dialogue can be at all levels, from top management to workers, without forgetting the suppliers and customers.

Yasuhiro Monden (1983), states in his book:

- "... respect for humanity allows each worker to participate in the production process."

- “Respect for humanity: Since quality control is based on automation calls immediate attention to defects or problems in the production process, it stimulates improvement activities and thus increases respect for humanity.”

Yasuhiro Monden mention how every worker must participate in the production process, but this don't mean just as an operator of the equipment and producing parts but also they must be allowed to participate in a way that they are stimulated to improve the process and provide ideas, but the “Respect to People” do not end there, those improvements and ideas must be implemented so the workers know that they are being considerate as individuals.

For Taichi Ohno (1988), one of the most important representatives of LM and/or TPS indicates:

- “The most important objective of Toyota System has been to increase production efficiency by consistently and thoroughly eliminate waste. This concept is and the equally important respect for humanity that has passed down from the venerable Toyoda Sakichi (1867-1930), founder of the company and master of inventions, to his son Toyoda Kishihiro (1894-1952), Toyota Motor Company's first president and father of the Japanese passenger car, are the foundations of the Toyota production system.”

Ohno mentioned these words on the preface of his book “Toyota Production System: Beyond Large-Scale Production”. It is noticeable how both principles are equally important, and how the Respect for Humanity principle was not something new, the concept has passed since the founder of the company in the beginning of 1900's. It also states that both principles are the foundations of Toyota, this mean that the company cannot live without any of the two principles.

Not only Japanese managers have promoted the “Respect for People” principle, Michael Husar (1991) wrote in the internal paper for General Motors titled “Corporate Culture: Toyota's Secret, a Competitive Advantage” two section dedicated to the “Respect for People”. This paper is based on Toyota's internal training, similar to “The Toyota Way 2001” document published 10 years later (Emiliani, 2008). In section “Respect for the value of People”, Husar wrote:

- “Toyota believes its growth as a business enterprise comes through the growth of its people. This means to be successful, Toyota must utilize its employees' abilities as effectively as possible, and help each person develop the ability to think and execute the job more effectively.

Toyota has plants, equipment, and capital resources, but these things do not build cars. Its team members build the cars. Its team members

also add value to its products by suggesting ways to improve their work and the production process. Toyota realizes that it is responsible for providing its employees the opportunity to contribute their ideas, as well as their labor.

Toyota also believes that to get the best from its employees, it must respect their competence, and provide them with jobs that use and challenge their abilities. Toyota realizes the value of its people, and wants them to think of the company as a place where everyone can learn from one another, and grow as individuals, rather than just as a place to work.”

In every paragraph it can be read and understood how important is the people for Toyota, this is reflected explaining that financial, equipment or capital assets do not build cars, people build cars, that is why people must be considered as the most important company’s asset. People is the force that will help the company to grow, but it is important that people grow with the company, people needs to improve their skills and abilities and these must be used by the company at their maximum potential. Workers skills can be improved through trainings, challenging their abilities with new tasks and motivate them to be an active participant of the process, providing ideas and improving the work they do, their job must be a place where they feel appreciated as individual.

In another section called “Mutual trust between Employees and Management”, Husar said:

- “Mutual trust means that management and the employees have confidence in one another. Management and their employees have different jobs and different responsibilities in the company. Mutual trust comes from the belief that everyone is, however, striving for the same purpose: prosperity of the company, which means better and more secure employment for all.

Toyota realizes this kind of mutual trust is not a given condition between management and the employees. It must be earned through many mutual efforts that create confidence.

Toyota values and tries to maintain mutual trust, because it is the foundation for the growth of the company and its employees”.

Mutual trust between managers and workers is a key element and this trust can be enhanced with an open communication among them, like Kato (1981) stated previously with his three C’s philosophy. Managers must understand that mutual trust is not something that comes alone; it has to be created with everyday effort by both sides.

Oppenheim et al (2011) mention the two Lean Principles, “Eliminating Waste” (they break it the in five categories: Value, Value

Stream, Flow, Pull and Perfection) and “Respect for People”. For the “People” principle they indicate the following:

- “This principle promotes the best human relations at work based on respect for people: trust, honesty, respect, empowerment, teamwork, stability, motivation, drive for excellence and healthy hiring and promotion policies. It calls for a vision which draws and inspires the best people and promotes such excellent human relations. It promotes a learning environment. Finally, it calls for treating people as the most valued assets, not as commodities”.

Oppenheim et al (2011) explain this principle based in the promotion of a series of values as the base of the human relations, for this to happen the managers must set the example on the practice of such values in order to get the rest of the workers engage with this principle, having as a result a great work environment where people feel comfortable and challenged to keep growing, and at the end it is emphasized a concept mentioned previously in this paper, people is the most important asset in any company.

Puvanasvaran et al (2008) presented a Framework for Enhance Problem Solving Capabilities among Employees and one of the key integration elements for this framework is the principle “Respect for People”.

Table 2, presents the Critical success factors and a Performance matrix for the “Respect for People” principle in Puvanasvaran et al (2008) framework. Some of the most valuable contributions on this framework are that it presents “Critical Success Factors” (CSF) and a “Performance Matrix”. The CSF are those conditions that must be presented in order to have a successful “Respect for People” implementation, note that once again that “Top Management Commitment” is one of the most important factors on any LM system. The other important contribution is the proposal of having a way to measure the “Respect for People”; this is an interesting contribution because of the nature of this principle, this is a qualitative principle and finding a way to measure it can be the first step to improve it, probably is still missing some other metrics like absenteeism and turnover.

Companies must focus and practice both principles, however, most managers work too hard on the first principle, in learning and implementing the different technical tools that will help them to reduce waste, and it is understandable due that this way is how they will see the cost reduction faster, but it is the second principle “respect for people” the one that enables the first one (Emiliani, 2006). As Emiliani (2008) states, the “Respect for People” principle has existed for long time in Toyota’s management system, but has been almost entirely ignored by outsiders.

The mistake of not apply both principles equally has brought some discussion and criticism to LM system, e.g. Garrahan and Stewart (1992) and

Williams et al. (1992) suggest that “lean production is de-humanising and exploitative”. These critics has forced Lean practitioners to look back and remember that LM is more than a system of hard, cold tools and techniques; in order for LM to work properly, the empowerment of the personnel must be included (Hines et al, 2004).

It is important to understand the impact that both principles have on the companies, and for that the analogy of consider companies as “Living Entities” will be used. Companies behave as living entities in the meaning that they born, develop, breath, get sick and eventually, if they do not adapt to the changes demanded by their environment, they are condemned to die, “It is not the strongest of the species that survives, nor the most intelligent that survives, it is the one that is the most adaptable to change” (Darwin, 1859).

Table 2. Analytical framework for measuring problem solving capability in lean process management (Respect for the people segment).

<i>Key Characteristics</i>	<i>Critical Success Factors</i>	<i>Performance Matrix</i>
<p>Respect for people</p> <p>Team Environment Self Directed Communication</p>	<p>Top Management Commitment Team effectiveness/formation Ideas cost or value Continuous improvements Lean Behaviors Rewarding system</p>	<ul style="list-style-type: none"> • Number of ideas generated/ number of people involved. • Number of ideas generated/total cost of the project. <p>Measured by Likert-type scale on the following items:</p> <ul style="list-style-type: none"> • Top Management Commitment • Lean behaviors • Leanness level of the company • Perception of team members capability

Source: Puvanasvaran et al, 2008

The need to adapt to changes is happening faster every day and those companies that cannot go along with these changes start to get sick, this sickness reflects on bad productivity, low quality, high cost, etc. As stated previously, most of the management focus their efforts on reducing the waste using the technical part of LM such as: cost reduction projects, TPM, 5’S, Kanban, JIT, etc. and this will help to reduce the symptoms of the sickness, but the company will not heal completely unless both principles are implemented at the same time. If the company does not seek a cultural change and forget to apply the “Respect for People” principle, the symptoms will appear again, after all, the responsible of making the products, the planning, maintaining the machinery, the management and any other activity is “the people”.

Several authors agreed that the first step for LM implementation is “Top Management Commitment” (Anvari, 2010), and this must happen,

otherwise will be difficult to get the resources to do all the changes, but in rare occasions the managers dedicate the resources on the most important asset of the company, the “working force”.

In order to have success in LM implementation it is important to dedicate time and resources on the people that it is doing the product, this resources must come as: training, participation on the LM implementation, ask for their opinion and advice, small improvements that will facilitate their jobs, communication, teamwork, among other activities that will enhance the “respect for people”.

Field Research Interviews (Pilot Run)

In order to get a deep knowledge about the “Respect for People” principle it is important to not only study the literature, it has to be lived and practice in the real world, as Emiliani (2008) states, only through daily thinking and practice on the job both LM principles can be fully comprehended.

A pilot run of 10 semi-structure interviews were performed in an automotive company in Mexico. The people interviewed are department managers (Human resources, Production, Quality, Engineering, Materials and Continuous Improvement) and Plant Manager from four manufacturing sites in different cities.

The interviews were performed after work hours and on the interviewee’s offices, these conditions helped to have calm and relax interview with no interruptions, and by doing it in their offices they felt more comfortable and confident.

The main purpose of the interviews is to discuss about the “Respect for People” principle, and this was achieved through a series of questions that led to talk about the topic desire. Sometimes the interviewee deviate from the topic and it had to be redirected to avoid discussing topics that are not part of this investigation. Some of the key questions made during the interviews are:

1. Do you know what are the two LM pillars or principles?
2. What do you understand of “Respect for People”?
3. Do you think that it is balanced the efforts and attention from the company to the two LM principles?
4. In a scale from 1 to 5, being “5” a true 50-50 percent effort balance on the two principles and, “1” a non-existing effort towards the “Respect for People”. What score do you think your manufacturing plant is located?
5. How can you measure “Respect for the People”?
6. What activities are happening in your manufacturing site to improve the “Respect for the People”?

7. If you had the power, position and resources to make any changes in your plant to improve the “Respect for the People”, what actions would you do?

It’s important to mention again that this was not a questionnaire or a survey; the questions above are some of the key questions used during the semi-structure interviews to obtain the desire information.

The information provided by the participants was vast and truly interesting due to a strong tendency of the participants indicating that there is almost non-existing “Respect for People” in their manufacturing sites. Some of the results are:

Question #1: Only one out of ten of the interviewees (10%) consider “Respect for People” as one of the main principles of LM.

Question #2: The interviewees respond with a wide variety of answers, they did not limit to only one or two concepts, most of them give an extensive explanation of what they understood, but still do not quite understand everything that covers the “Respect for People” principle

Question #3: All the interviewees agreed that there is no balance between both LM principles. The balance is clearly skewed towards the production results. One of the interviewees mentioned: “in most of the companies managers do not care for the people, they only care for the parts produced”.

Question #4: The score average was 2.2, it is clear that companies still have a long way go to achieve a balance in both principles, but it is true also that some activities are being done.

Question #5: Most of the responses were absenteeism, turnover and workplace surveys. These are good options, but there was one person that mentioned, by the number of employees empowered to reduce waste and involved in kaizen events and problem solving, the number of kaizen events successfully completed and by the number of internal talent promoted within the organization, all these are great examples also of showing respect to the personnel.

Question #6: Also for this question the results were varied and it is demonstrated that some companies are starting to have a better understanding of what “Respect for People” really means. Some of the answers were, talent review sessions, one on one meetings to increase communication level, increase employee involvement in problem solving and kaizen events, inclusion of psychologists in the plants to help people.

Question #7: This question was included to allow the interviewees to express themselves with some of the ideas they have to improve the “Respect for People”, the responses were great ideas like, implementing a children’s day care inside the manufacturing site, to have a room where employees can

go to relax and disconnect themselves for a few minutes, assign more resources to implement employees ideas, among much more.

This first approach to the field was very interesting; having the interviews directly with the people involved with the process provides a lot of valuable information.

Conclusion

“Respect for People” is without any doubt a crucial principle that any company must follow in order to have a successful LM implementation. It looks as an easy part of LM to apply and in many cases managers consider it something they already know or are have already implemented, and the reality is that they are still far from at least understand it.

The true meaning of this principle is not as simple as most of the managers think it is, “respect for people” not only means to be polite with the personnel; it means, to provide them a respectful work environment, assure that the work conditions are the most adequate for the job, develop the people, among other concepts that are listed below:

- People must be treated as individuals. It is a huge mistake to consider the people as a group of workers, each person is unique.
- Machines do not operate people, people operates machines. Doesn't matter how complex or technologically advance is the manufacturing site, at the end, is the people the responsible for having the goods produced
- People is the most important asset in a company. Financial, technology and capital are very important, but never more important than the people.
- 3 C's: Communication, Consideration and Cooperation. If these three concepts are properly implemented, people's efficiency will increase.
- Use people's abilities as effectively as possible. Do not underestimate or under-utilize people's skills, people feel better when they feel they are being productive.
- Develop people. Managers must understand that in order for a company to grow, people must grow, when people know they can grow in a company and feel appreciate, will be very difficult to leave.
- Challenge the workers with new activities. Keep people's minds active, people are more productive when they feel challenged.
- Improve production (eliminate waste) is as equally important as Respect for People. Do not focus only on hard results, nor the technical side of Lean (implementation of tools), implement social programs and activities to make people feel more happy with their jobs.

- Mutual trust between managers and workers. Trust is fundamental on any type of relationship, managers need to work in activities to increase trust among all levels of the organization.
- Lean does not represent “cut jobs”. In many places it was misunderstood when LM was implemented in some companies and some of the first actions were to lay off personnel, that is not LM principles, actually this practice will be breaking the “Respect for People” principle.

Eliminate or reduce waste by the use of all the LM tools will help to improve the work environment and increase productivity, but managers should not lose sight of “Respect for People” if the improvements and productivity want to be maintained.

It’s imperative for any company to invest in their people, without them there will be no company, so always remember to “Build people before you build parts”.

References:

- Abdulmalek, F. A., & Rajgopal, J. (2007). Analyzing the benefits of lean manufacturing and value stream mapping via simulation: A process sector case study. *International Journal of production economics*, 107(1), 223-236.
- Adams, M., Componation, P., Czarnecki, H., & Schroer, B. J. (1999). Simulation as a tool for continuous process improvement. *Proceedings of the 31st conference on Winter simulation: Simulation a bridge to the future-Volume 1* (pp. 766-773). ACM.
- Anvari, A., Norzima, Z., Rosnay, M., Hojjati, M., & Ismail, Y. (2010). A comparative study on journey of lean manufacturing implementation. *AIJSTPME*, 3(2), 77-85.
- Anvari, A., Zulkifli, N., Yusuff, R., Hojjati, S., & Ismail, Y. (2011). A proposed dynamic model for lean roadmap. *African Journal of Business Management*, 5(16), 6727-6737. doi: 10.5897/AJBM10.1278
- Behrouzi, F. and Wong, K. (2011). Lean performance evaluation of manufacturing systems: A dynamic and innovative approach. *Procedia Computer Science*, 3, 388-395.
- Emiliani, M.L. (2006). Origins of Lean management in America. The role of Connecticut business. *Journal of Management History*, 12, (2), 167-184.
- Emiliani, B. (2008). *Real Lean: The Keys to Sustaining Lean Management*, Vol 3. Training, 2010.
- Eswaramoorthi, M., Kathiresan, G., Prasad, P. y Mohanram, P. (2011). A survey on lean practices in Indian machine tool industries. *International Journal of advanced manufacturing technology*, 52, 1091-1101.
- Gonzalez, F. (2007). *Manufactura Esbelta (Lean Manufacturing)*. Principales Herramientas. *Panorama Administrativo*, 1(2), 85-112.

- Huehn-Brown, W. J., & Murray, S. L. (2010). Are companies continuously improving their supply chain?. *Engineering Management Journal*, 22(4).
- Husar, M. (1991). Corporate Culture: Toyota's secret, competitive advantage. General Motors internal paper, 10-11.
- Kato, S. My years with Toyota. Toyota Motor Sales Company, 1981.
- Kumar, A. (2014). The challenges to the implementation of Lean Manufacturing. *International Journal of Engineering Science & Advanced Technology*, 4(4), 307-312.
- Lim, V. A. J. (2008). Lean construction: knowledge and barriers in implementing into Malaysia construction industry (Doctoral dissertation) Universiti Teknologi Malaysia, Faculty of Civil Engineering.
- Lummus, R.R., Vokurka, R.J., and Rodeghiero, B. (2006). Improving quality through value stream mapping: a case study of a physician's clinic. *Total Quality Management*, 17 (8), 1063–1075.
- Mejabi, O. O. (2003). Framework for a lean manufacturing planning system. *International Journal of Manufacturing Technology and Management*, 5(5), 563-578.
- Melton, T. (2005). The benefits of Lean Manufacturing. What Lean thinking has to offer the process industries. *Chemical Engineering Research and Design*, 83(A6), 662-673.
- Mohanty, R. P., Yadav, O. P., & Jain, R. (2007). Implementation of lean manufacturing principles in auto industry. *Vilakshan–XIMB Journal of Management*, 1(1), 1-32.
- Monden, Y. Toyota production system: practical approach to production management. Engineering & Management Press, 1983.
- Muda, S. and Hendry, L. (2002). Proposing a world-class manufacturing concept for the make to order sector. *International Journal of Production Research*, 40 (2), 353–373.
- Nordin N., Deros B. and Wahab, D. (2010). A Survey on Lean Manufacturing Implementation in Malaysian Automotive Industry. *International Journal of Innovation, Management and Technology*, 1(4), 374-380.
- Ohno, T. Toyota Production System: Beyond Large-Scale Production. Productivity Press, 1988.
- Oppenheim, B. W., Murman, E. M., & Secor, D. A. (2011). Lean enablers for systems engineering. *Systems Engineering*, 14(1), 29-55.
- Paipa-Galeano, L. (2013). Diseño y validación de un nuevo programa para impulsar la mejora continua desde el enfoque científico de las 5Ss. (Doctoral Thesis) Universidad de Navarra, Donostia San Sebastian.
- Pedraza, L. (2010). Mejoramiento productivo aplicando herramientas de manufactura esbelta. *Soluciones de Postgrado*, 5, 175-190.

- Puvanasvaran, A., Megat, M., Tang, S., Muhamad, M., and Hamouda, A. (2008). A review of problem solving capabilities in lean process management. *American Journal of Applied Sciences*, 5(5), 504-511.
- Ramesh, V., Sreenivasa, K. y Srinivas, Y. (2008). Implementation of a Lean Model for Carrying out Value Stream Mapping in a Manufacturing Industry. *Journal of Industrial and Systems Engineering*, 2(3), 180-196.
- Smeds, R. (1994). Managing change towards lean enterprises. *International Journal of Operations & Production Management*, 14, 66–82.
- Subha, M. V., & Jaisankar, S. (2012). Balanced adoption of lean manufacturing practices in engineering goods manufacturing firms. *European Journal of Social Sciences*, 28(2), 273-279.
- Sugimori, Y., Kusunoki, K., Cho, F., & Uchikawa, S. (1977). Toyota production system and kanban system materialization of just-in-time and respect-for-human system. *The International Journal of Production Research*, 15(6), 553-564.
- Taj, S., & Berro, L. (2006). Application of constrained management and lean manufacturing in developing best practices for productivity improvement in an auto-assembly plant. *International Journal of Productivity and Performance Management*, 55(3/4), 332-345.
- Taleghani, M. (2010). Key factors for implementing the lean manufacturing system. *Journal of American Science*, 6(7), 287-291.
- Vinodh, S. and Chintha (2011). Leanness assesment using multi-grade fuzzy approach. *International Journal of Production Research*, 49(2), 431-445. doi: 10.1080/00207540903471494.
- Wahab, A. N. A., Mukhtar, M., & Sulaiman, R. (2013). A Conceptual Model of Lean Manufacturing Dimensions. *Procedia Technology*, 11, 1292-1298.
- Womack, J. P., Jones, D. T., and Roos, D., *The machine that changed the World*. New York: Harper Collins, 1990.