

# LEAN PRINCIPLES

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**Abstract:** *Research on such complex interventions requires special methods and research designs. Currently, case study designs are the most frequently used. While this design can provide useful insights, it has serious limitations regarding generalizability and inter-subjectivity. Along with the other methodological issues surrounding the evaluation of lean thinking, which we mentioned in the introduction, it is safe to say that not only more research, but also higher quality research is needed. At this time, to state that 'the lean message is 100% positive' seems a bit of a stretch. Research has also highlighted other factors that are influencing the move towards systems managing the total marketing operation. From a workload point of view BTL marketing creates significant demands on the department. Instead of completing say one advert in a national paper BTL may require five individual adverts in specific interest magazines supported by five tailored mailshots that will be different to reflect the particular interests of the prospective customers. Although the budgets for BTL have grown, very few companies have budgeted for increases in staff (based on responses to PIPC survey), or for the significant extra costs which BTL will incur (eg print runs for different brochures will be smaller so printing costs will rise). So many departments struggle to find ways to absorb the work and costs. It is an accepted truth that Below The Line marketing (BTL) delivering personalized messages directed at specific sectors of the market is the most effective way to communicate with the required audience.*

**Keywords:** lean principles: lean management; customer demand.

## I. Introduction in lean management

Lean management could serve as a facilitator of instigating greater co-operation and alignment in the design, development and implementation, both intra-organizationally and on a supply chain level, of more environmentally friendly processes and products. The purpose of the present thesis is to uncover any possible synergies and interrelations in terms of adding value to companies between Corporate Social Responsibility/Sustainability and Lean. In this

sense, the objective is placed upon unveiling the strategic character and the reinforcing and supportive role of both concepts (Lean and Corporate Social Responsibility) into becoming more economically justified and efficient, offering benefits in terms of cost savings and economic effectiveness. In this sense, the following lines serve as a means of providing a developmental account and a thorough understanding of the current reality concerning the two concepts. In order to objectify and concretize the rather vague notion of value and provide a comprehensive yet elaborate understanding of the contribution of Lean to strategic advantage, we have framed the realization

of value capture and appropriation through the competitive positioning framework.

Therefore it entails increased potential to provide tangible research results which can advance academic inquiry.

Lean operating system concepts have been around for a long time. While frequently using different names, the fundamental concepts of Lean have been the subject of many industry and trade publications for many years. Many manufacturers are therefore very well read about the theories of

the Lean operating system. They understand the Lean concepts and the potential benefits to their companies. Eliminating waste is also nothing new. Just the idea of eliminating non-value-adding waste makes common sense. Most manufacturers have been trying to eliminate waste and make their operations as efficient as possible since the first day they opened their doors.

## II. MAIN CONCEPTS

In order to implement the demand phase successfully, the core implementation must:

Understand customer demand. It is need to spend the time upfront to understand customer demand thoroughly. It is the foundation upon which you lean system will be built. If your customer is another functional area, you must work with them until you know their sequences. Collecting accurate data is important. Determining customer demand for administration may be difficult, but it can be done. (Hobbs, 2011)

Don't attempt to micro-design the future state in this phase.

You will not need to identify specific action items to implement this phase of the future state.

Be flexible: Tracking customer demand in the office may require constant adjustments in your plans for the future state. It is need to be flexible, not hold too tightly to any one set of ideas

as being is a process of evolution. As people learn and grow, they will take more responsibility and make better decisions.

Create a plan that the whole team can agree on.

One of the best ways to make sure a plan will work in to get rapid buy-in. The team should follow these few guidelines to make sure they agree on the plan:

- Restate the original problem and review the current-state map, as well as others discussed but not posted - and the reason why. (Tapping, 2003)

- Review problem-solving projects listed.

- Make final changes.

- Get buy-in from anyone.

In terms of lean manufacturing, anything that does not directly add value to the product is inefficient (waste). To make it more clear what is considered as wasteful, we have to explain what the term value means. Valuable work is the work that the customer really thinks is worth paying for (the product). In every particular operation there is an element which is value-creating. Actually, only this element we can call work, and everything else is called motion. In its nature, motion is considered to be wasteful. Every part that is not being worked on is a sign of inefficiency. Toyota has basically split the waste into seven types: overproduction, operators waiting, excess transport, overprocessing parts, unnecessary inventory, unnecessary operator motions and defects. The concept of lean brings up new needs. In order to achieve these needs, a company has to establish new strategy. In order to improve current performance it usually has to redesign elements of its production system. Lean manufacturing approach offers tools for reduction of waste of resources.

## III. THINKING

In 1983, Showa Manufacturing, a maker of radiations and boilers, celebrated a one hundred anniversary. The firm had been steadily successful in the Japanese market and in the 1960s had even been chosen to build a new heating system for the

imperial palace in Tokyo. However, the world changed after the second oil shock in 1979, and Showa started to struggle. Demand for its industrial products slumped as Japanese firms cut back expansion plans and considered more modern concepts in heating. Equally ominous, the cost structure at Showa, with its traditional Japanese commitment, and its 750 core employees, seemed to be stuck. Showa's initial response was typical of Japanese firms in these circumstances. To raise the cash to avoid layoffs it sold the valuable real estate under its center city offices and main plant and began relocating its production facilities to cheaper but more modern sites nearby in hopes of gaining efficiencies. It also diversified into ornamental castings for bridge railings and began to implement a plan for exporting its cast-iron boilers to America to take advantage of the weak yen.

When Showa's original office and manufacturing complex in crowded Fukuoka City was fully relocated in 1983 to new plants in suburban Umi and Koga, the management expected its fortune to change. Instead, the decline continued. The production system in the new plants was in fact the same as the old. Processes for casting, cleaning, stamping, welding, painting and assembly were run in the batch mode with long intervals between tool changes. This practice created mountains of parts of which were then taken to central stores before reshipment to the next processing step. Orders took months to work their way through the system, as chased by expeditors with hot lists. (It was the familiar word of every firm we've looked at before the advent of lean thinking). In addition, the cost of starting exports was high and the diversification into ornamental castings pitted Showa against larger firms with established reputation in the building trades.

By 1995, Showa was finally reaping the full rewards of its conversion to lean principles driven by a lean strategy. Showa quickly improved its productivity and reduced its space needs and inventory after 1984. These steps stemmed the company-threatening and inventory after 1984. These steps stemmed to company-threatening losses and bought vital time to consider what to do next (just like similar steps at Pratt & Whitney and Porche), yet as of 1991 the firm was still not

making an adequate return because it was selling products into declining markets.

As the new business units gradually found their markets and product development and order-taking were improved after 1991. Showa began to take off, just as the rest of the export-dependent Japanese economy fell into a prolonged slump. As a typical Japanese manufacturing profits fell by 70 percent after 1989. Showa, now selling 100 percent of its output into a stagnant domestic economy, lifted its profits by nearly 100 percent compared with 1989.

The Kaizen management originated in the best Japanese management practices and is dedicated to the improvement of productivity, efficiency, quality and, in general, of business excellence. The KAIZEN methods are internationally acknowledged as methods of continuous improvement, through small steps, of the economical results of companies. The small improvements applied to key processes will generate the major multiplication of the company's profit, while constituting a secure way to obtain the clients' loyalty/fidelity. The KAIZEN management represents a solid, strategic instrument, with a view to reach and surpass the company's objectives. (Titu, 2010)

Kanban is based on a very simple idea. Work In Progress (WIP) should be limited and something new should be started only when an existing piece of work is delivered or pulled by a downstream function. The kanban (or signal card) implies that a visual signal is produced to indicate that new work can be pulled because current work does not equal the agreed limit.

This doesn't sound very revolutionary nor does it sound like it would profoundly affect the performance, culture, capability and maturity of a team and its surrounding organization. It is remarkable that it does. Kanban seems like such a small change and yet it changes everything about a business.

Since few unnamed production systems exist, jidoka has taken on an additional character of integrating the human into an automated system so that the human is well integrated into the system.

One of the most popular visual control tools is a system called andon which typically uses

„alarm lights". These lights are used to indicate or warn workers of an activity that going wrong. (Kniberg, 2010)

Andon also can be used to detect material shortages. The worker, by turning a light on, can let a supervisor know the trouble spot on the line is causing the problem.

Finally, applying lean management principles helps to drive change through the organization. Lean management gives the organization a set of goals and a purpose, which leaders can use as they strive for excellence in the development process and communicate these expectations to the rest of the organization. Applying lean management standards changes the behaviors, practices, and habits of teams. This is the only way to change the culture of a development organization. For this reason, lean must be implemented beyond the team level to all areas of leadership.

Using these principles, design teams achieve innovative outcomes because the method ensures an optimal solution to key design problems.

In the process, the design team will have designed out the wastes that are universal to all designs and, by applying the key lean principles of flow and pace to the process, will have found the solution faster than using phase- gate-style development.

We work with teams that are on the journey to incorporate all six principles into their development process. Often one team will demonstrate a best-practice behavior, which is shared with other teams.

## CONCLUSION

A main element of the Lean financial model presented is based on encoding actions that are perceived waste within the Lean philosophy; it has been shown how the model benefits from this categorization. However, we acknowledge the literature debate on this topic and will briefly address it.

The Lean financial model renders different

types of available capacity explicit. This is done intentionally to understand the potential use of their capacity. Acting on it we can improve time consumption.

We distinguish between available bottleneck capacity, other labor available capacity and imbalance capacity. Other labor-available capacity is the capacity available in non-bottleneck labor resources, and the imbalance idle capacity comes from the activity path in which cells cannot be balanced completely with each other, or in which cells cannot be balanced internally. Only if there is available capacity at the bottleneck is it possible to increase value stream activity. In the example schedule there is very little available capacity at the bottleneck resource, and not enough to run another batch.

Lean and concurrent engineering (CE) are widely acknowledged business process improvement strategies. These strategies can improve processes, reduce costs, and cut waste enabling organisations to remain competitive. Lean manufacturing offers an enterprise-wide methodology that improves reliability and flexibility while reducing lead-times and inventory carrying costs. Companies in manufacturing and service sectors are focusing on integrating lean manufacturing methodology with other applications, so that, all their systems and processes are aligned.

Therefore, as the tool problems registered on the visual board in cell 1 arise, and the cell loses time equal to one batch, it may be argued that the cost of waste in our model fails to represent the opportunity costs. Opportunity costs are by definition equal to the contribution margin lost with the above-mentioned batch. The increased scrap level reduces the contribution margin as there are (potential) customers for these goods. (Piatkowski, 2017)

The fundamental concepts of lean thinking are similar you follow them on your home or in the projects. These principles involve improving all processes in each phase of the project to gain incremental improvement, thereby resulting in a significant overall improvement for the entire project.

Advanced project leaders are lean thinkers, and they believe in applying the Science of

Simplicity) to every project they undertake. They are not limited by the eight wastes but look at all wastes than prevent them from creating value for their customer, within the legal and moral boundaries. Advanced project leaders understand that if they do not eliminate the waste from their projects, they face a far greater waste. Project leaders are those who have undergone a paradigm shift from wanting their resources to work faster to leaders who want their resources to work smarter - to focus on eliminating the waste and thus use their time to focus on adding value to the customers.

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