APPLICATION OF MANAGEMENT METHODOLOGIES FROM MANUFACTURING IN FASHION OPERATIONS

Hannah Gabriel
International Fashion Management – Bachelor of Arts
Student number: 500645185
Process Coach: Marco Mossinkoff
hannah.gabriel@hva.nl
Can fashion brands benefit from leveraging management methodologies developed for manufacturing?

Hannah Gabriel
Can fashion brands benefit from leveraging management methodologies developed for manufacturing?

Hannah Gabriel
ABSTRACT

There has been little focus on optimizing Fashion Operations to increase competitiveness. Saturation of the marketplace and the sophistication of consumer demand, however, urges fashion brands to increase capabilities to react to consumer demand. The report discusses if fashion brands can leverage methodologies developed for manufacturing for Fashion Operations.

Research in literature, interviews and own experience have resulted in the conclusion that there is a great need to optimize Fashion Operations and that continuous improvement methodologies like Lean, Theory of Constraints and Six Sigma are applicable for the fashion industry and can increase competitiveness of a fashion brand.
# Table of Contents

Table of Figures ........................................................................................................... ii
Abstract ................................................................................................................................ iii
Rationale & Relevance ................................................................................................. vi
Research Question ........................................................................................................ viii
Research Method ........................................................................................................ viii
Limitations .................................................................................................................... ix
Introduction .................................................................................................................. 1

1. Fashion Operations .................................................................................................. 3

2. Management Methodologies Originating from Manufacturing ............................. 5
   2.1. Lean – waste reduction ......................................................................................... 5
   2.2. Theory of constraints – constraint reduction ....................................................... 9
   2.3. Six Sigma – variation reduction ......................................................................... 12
   2.4. Conclusion .......................................................................................................... 16

3. Application prospect for fashion brands ................................................................. 19
   3.1. Foundation .......................................................................................................... 19
       3.1.1. 5S -Method .................................................................................................. 20
       3.1.2. Value Stream Mapping (VSM) .................................................................. 22
       3.1.3. 5 Why’s - Method ...................................................................................... 25
       3.1.4. Visual Management .................................................................................... 26
       3.1.5. Throughput accounting .............................................................................. 28
       3.1.6. Conclusion .................................................................................................. 31
   2.2. Acceleration ........................................................................................................ 32
3.2.1. Standard problem solving approach ................................................................. 32
3.2.2. SCORE .................................................................................................................. 33
3.2.3. Managing Daily Improvements ........................................................................... 35
3.2.4. Best-practice sharing .......................................................................................... 35
3.2.5. Pull-Systems ....................................................................................................... 37
3.2.6. Conclusion ............................................................................................................ 42
2.3. Innovation ................................................................................................................ 43
3.3.1. Structured innovation ........................................................................................ 44
3.3.2. Eliminate constraints in our thinking ................................................................... 45
3.3.3. Lean UX ............................................................................................................... 47
3.3.4. Conclusion ............................................................................................................ 49
3. Conclusion .................................................................................................................. 50
Glossary ........................................................................................................................ 55
Bibliography .................................................................................................................... 62
Appendix .......................................................................................................................... 66
Appendix 1 - Site visit – Lean DC Belgium ................................................................. 66
Appendix 2 – Interview Experienced Lean Master in Fashion Operations ..................... 70
Appendix 3 - Interview with Graphic Designer ............................................................. 71
Appendix 4 – Interview with Lean Coach ...................................................................... 73
Appendix 5 – Using A3’s ............................................................................................... 73
Appendix 6 – Case study SharePoint COPS COE ......................................................... 74
Appendix 7 - Obeya, Operations .................................................................................... 76
Appendix 8 - Interview Joe De Feo, CEO Juran Institute .............................................. 76

Can fashion brands benefit from leveraging management methodologies developed for manufacturing?
Hannah Gabriel
Rationale & Relevance

Once, General Motors and Ford dominated the global car market. Then in 1957, Toyota, a small car manufacturer, opened a car dealership in the US. Originally struggling through scarce resources and intense competition, Toyota transformed into the biggest car manufacturer, beating Volkswagen and General Motors three consecutive years¹! Selling 10.23 million vehicles in 2014², they convinced experts and consumers through reliability, fuel efficiency, and innovation. In spite of its current size and complexity, Toyota is a benchmark example for excellent strategic alignment. It has managed to keep its strategy, organization and people perfectly in tune with its main objective; the pursuit of harmonious growth, and the enhancement of profitability.

Employees are continually trained via the ‘Toyota Production System’ (TPS), and it is obvious that the Toyota Motor Corporation has become one of the world’s greatest companies largely because of the TPS³ (Corbett, 2007). As a result of this, organizations such as hospitals and postal services have developed TPS-like systems which operate with Toyota’s underlying rules, tools, and conventions in mind, in order to become more efficient (Corbett, 2007). Toyota’s production system has slowly developed into one of the biggest management ideas of the past 50 years (Duncan & Ritter, 2014): LEAN!

¹ http://www.telegraph.co.uk/motoring/car-manufacturers/toyota/10594637/Toyota-still-the-worlds-biggest-car-manufacturer.html
³ https://hbr.org/2008/06/the-contradictions-that-drive-toyotas-success
Competitors of Toyota, at this point were terribly inefficient. For them, becoming Lean, resulted in a lot of cutting. For those that failed to become Lean, it meant complete shutdown. Much leaner, healthier and more productive manufacturers. But fewer, too.

“Many non-manufacturing sectors are rapidly adopting lean techniques. Soon they will no longer be a differentiating factor in themselves; the important thing will be how well you implement them.” (Corbett, 2007)

The fundamental reason for this report is that major challenges with substantial implication for the fashion industry cannot be met with conventional business practices. Business needs have changed drastically in the past years and our environment has become more complex. More competition puts increasing pressure on companies to stay ahead in price, speed and innovation. Fashion brands have created add-on, new departments and extensions to cope with new demands by consumers, different business needs and changing governmental asks. However, there is a need to re-think the fabric of what our business is made of to leverage and drive with those new developments. A poorly run business wastes effort and resources on things that don’t directly benefit the customer, will be beaten by competitors. But managers are stuck in habits and convention. They do not yet see the urgency to continuously adapt.

The aim of this report is to create a research foundation for a short story through analyzing if Fashion Operations can benefit from leveraging management methodologies that were originally developed for manufacturing. The story is meant to provoke readers to examine and reassess their business practices and transform the thinking and actions of managers.

---

Can fashion brands benefit from leveraging management methodologies developed for manufacturing?

Hannah Gabriel
**RESEARCH QUESTION**

If methodologies developed in car manufacturing can be translated as far as health services, can we use those methodologies to increase competitiveness of a fashion brand?

1. What are the management methodologies developed for manufacturing?
2. Can we leverage management methodologies which have been originally developed in manufacturing in Fashion Operations?

**RESEARCH METHOD**

The research method will focus on qualitative research. The first part will focus on an explanation of the methodologies with grounded theory. It is required to supply enough knowledge about the frameworks to support the second part.

The second part is constructed of empirical data originating from interviews and my own experience. This part uses the theory from the first part and tests application possibilities using logical deduction. Small explorative case studies support those assumptions. I can fall back on my experience studying ‘Process Optimization’ at the ‘Windesheim University of Applied Sciences’ and ‘International Fashion Management’ at the ‘Amsterdam Fashion Institute’. Inspiration as well as feedback I can draw from being part of many Process Optimization Networks in academics and the corporate field. Most case studies originate from my own experience working in operations for various big international fashion companies as well as interviews.

Interviews are aimed at employees from big international fashion companies. All interviewees work in Fashion Operations. For a holistic approach I will interview managers from organizations that are not yet applying any methodologies, are beginning to use them, or have successfully implementing them. Triangulation is guaranteed through multiple sources of evidence as advised by Yin (Yin, 2003). Interviewees originate from various levels of seniority, companies and countries. Research will contain published sources, interview data and observation. This paper is meant as relevant research, meaning research with a...
Can fashion brands benefit from leveraging management methodologies developed for manufacturing?

Hannah Gabriel
The methodologies I have used are based on common knowledge, however their application is revolutionary. They demonstrate that people do not always find the fastest way to the finish line, sometimes they just follow the same old beaten path. Instead of implementing a positive change, they continue to follow habit. Those manufacturers who have been implementing these methodologies have not only undergone a structural change, but more importantly, a behavioral and cultural change. It would be important to know if and why people resist this change. However, this is again not part of this thesis.
INTRODUCTION

Fashion companies are being challenged now more than ever. Digital platforms have simplified the entry for young fashion designers, resulting in established fashion brands facing difficulties to keep-up with flexible and small start-ups. Fashion brands are challenging each other with price wars and ever smaller margins. Customers’ demands are becoming more sophisticated; they expect more product availability, broader assortments, trendy designs and faster delivery time. With the economy picking up demand is rising. Global production of apparel is forecasted to hit 115 billion pieces in 20164, but brands, after years of aggressive cost cutting, do not have the capabilities to satisfy this demand. At the same time, conventional cost-cutting in manufacturing, such as off-shoring and mass production, is not as lucrative as it has been. Developing countries are raising their standards and manufacturing hubs are moving from one developing country to the next, struggling with under-developed infrastructure and political uncertainty. Mass-production, on the other hand, limits flexibility. It can therefore not satisfy increasing sophistication of consumer demand.

Many industries are facing challenges that cannot be met with conventional business practices. Manufacturers from all industries have realized that early and transformed their processes to react quickly to the demand of consumers. Others are just picking up on it now. Many results have been exaggerating and some methodologies developed in manufacturing companies seem to drive entire industries. Toyota, Motorola and Zara alike, have most of their success accountable to the management methodologies they developed for manufacturing. The focus, however, has always been on manufacturing.

Fashion brands are now concentrating their efforts towards more revenue generating activities, leaving behind the objective of aggressively maintaining low costs. Instead, there is a constant growing need for fashion brands to be agile and flexible. To react to a fast

changing environment and to consumer needs, and to at least try and grasp the future to give them a fighting chance in a highly competitive industry.

However, most companies are slow by design. Only a fraction of fashion brands have focused their improvement efforts on business operations, which accounts for a majority of product cost and lead-time. It is therefore interesting to discuss, if we can leverage the management methodologies used to optimize manufacturing processes, to do the same for fashion operation - and if, ultimately, it can increase the competitiveness of a fashion brand.
1. FASHION OPERATIONS

To discuss if we can leverage management methodologies developed for manufacturing in fashion operation, we must first understand the differences and similarities between fashion brands and other companies in the manufacturing industry.

STRUCTURE

Toyota Motor Corporation, the car manufacturer who applies Lean very holistically throughout the entire company serves as a great comparison. Toyota encompasses most business functions present at a fashion brand. Toyota, designs, develops, makes and markets products and therefore has an approach for all these activities, as well as management and support functions like Quality Assurance, Accounting, Finance or Human Resources. A fashion brands structure is therefore not essentially different.

KEY METRICS

If we were to point out one defining challenge for fashion brands today, it would be reacting fast enough to keep up with the blistering pace of consumer demand and disruptive competition. Companies like Zara and Primark excel in speed and cost which is hard to match. New fashion results in higher profits, brands are therefore often eager to provide generous supply of the latest fashions. Fashion brands competitiveness can, therefore, be measured by the ability to meet consumer demands. Speed to market, flexibility to react to consumer demand, quality and price are the measures fashion brands are dependent on. They are the same measures the car industry is judged by.

5 Quality is not only the product's physical characteristics but includes the style and how it is perceived by the consumers (fashion ability)
CUSTOMER

What sets the fashion industry apart is their dependence on irrationality of fashion trends. Fashion trends are hard to anticipate and can change abruptly. Additionally, many aspects of which fashion brands have to deal with cannot be quantified or measured. Consumers’ reaction to a product cannot always be logically explained. Many apparel brands do not sell commodity pieces but rather a customer experience. The customers experience will always have a significant effect on revenue; however, this cannot be quantified and translated into monetary functions. Fashion brands are therefore very unstable environments in need of great flexibility.

EMPLOYEES

Fashion brands are highly dependent on creative minds. Fashion designers often find areas that might seem unorganized, stimulating. They are looking for a relaxed atmosphere to release their ideas. It is intuition and talent is what makes a great designer. Any disturbance of the creativity of designers could be fatal to any fashion brand.

We therefore conclude that although, most aspects of the fashion industry are similar to that of the car industry, we must be very careful in examining the effect the use of those methodologies has on the key metrics of speed to market, flexibility to react to consumer demand, quality and cost.

---

Can fashion brands benefit from leveraging management methodologies developed for manufacturing?

Hannah Gabriel
2. MANAGEMENT METHODOLOGIES ORIGINATING FROM MANUFACTURING

Lean, The Theory of Constraints and Six Sigma were selected due to their track record in manufacturing. For their selection it was essential that they are popular methodologies used throughout various industries and are not limited to manufacturing. They are used to improve processes and react faster, with less cost and higher quality to consumer demand. The same is desired for Fashion Operations and therefore they are most applicable. Many other methodologies used in manufacturing focus on the maintenance of equipment and are therefore less applicable. It is possible there are other management methodologies in manufacturing that pass these criteria. For example ‘Quick response Manufacturing’, ‘Business Process Reengineering’, ‘Just-in-Time’, ‘Kaizen’, ‘Hoshin Planning’, ‘Poka-Yoka’, ‘Design of Experiments’, ‘Process Excellence’, ‘Total Quality Management’, ‘Agile Management’ and so on. Each of these competing approaches is claiming to be the best way to achieve better business performance.

Since it is not the goal of this paper to discuss which methodology is the best, but to discuss if leveraging those methodologies could lead to a substantial increase of competitive advantage for business brands, only a sample of three methodologies is discussed in this paper.

2.1. LEAN – WASTE REDUCTION

Lean originated from Japan, and is best exemplified by the Toyota Production System (Rattner, 2006). The basic assumption that ‘any activity that is not used to add value to the consumer is wasteful’ was already popular in Japan before (Schouteten & Benders, 2004), however it was only introduced to the mainstream business practice of the west in 1990, when Womack and Jones published the best-selling book “The machine that saved the world” (Womack & Jones, 2007). Today it is the most used production methodology in the world (Cooney, 2002) (Hines, et al., 2004) (Lewis, 2000).
Practical production principles originated from the Japanese manufacturer *Toyota Motor Corporation*, in the 1950’s (Monden, 1983) (Ohno, 1988) (Shingo, 1988). Scarce resources and intense domestic competition in the Japanese automobile market forced them to rethink their business practices. Though at this early stage, *Lean* was still limited to tool-based manufacturing approaches aimed at providing high quality products at a lower cost.

In 1996, Womack and Jones extended their research to a more strategic level and developed ‘*Lean principles*’ (Womack & Jones, 1996). This included the identification of the customer value, the management of value stream, developing capacity to flow production, the use of “pull” mechanism, and ultimately, the pursuit of perfection.

What was first hugely popular in the automobile sector, this application has now evolved from an operational level to a strategic level (Hines, et al., 2004). From lean production, to an all-encompassing business ideology, lean thinking (Womack & Jones, 2003). Even to lean solutions which embrace entire value streams rather than discrete production processes (Womack & Jones, 2005)

“... the lean approach percolates into ever wider circles of operations, it ceases to be about best practice and starts to become a part of the fabric of doing business.” (Corbett, 2007).

**APPLICATION**

“(Lean is) A way of thinking, not a tool. It is used to evaluate a business be it manufacturing, service, or any other activity where there is a supplier and a customer”. (*Wang & Huzzard, n.d.*)

There are two levels at which *Lean* can be approached. The operational level, which focuses on short-term goals, with examples of commonly used tools being ‘Just-in-time’ manufacturing, high levels of employee problem-solving, automated mistake proofing, total

---

*Can fashion brands benefit from leveraging management methodologies developed for manufacturing?*

Hannah Gabriel
quality management, pull based systems (Hines, et al., 2004). In this case the aim is to leverage existing resources as much as possible.

On the other hand is the strategic level, which is based on ‘lean thinking’⁶ and ‘lean solutions’⁷ (Womack & Jones, 2005). There is an emphasis on customer value over the entire system flow. Organizational learning is commonly seen as a way to retain and improve competitiveness, productivity and innovation (Dodgson, 1993), and will support a sustainable competitive advantage (Cook & Yanow, 1993).

Lean encompasses a set of tools and practices designed to eliminate waste and inefficiencies whilst simultaneously reducing costs, improving quality and reliability and speeding up cycle times (Corbett, 2007). According to Fleury & Fleury, Lean integrates better into some industries than it does into others. Lean is most effective when production volumes are high and there is a large amount of product and process standardization in place. They argue that if the purpose is to strengthen the market and sales competencies whilst acquiring profound customer knowledge, then ‘agile’ manufacturing is a better suited method to satisfy fluctuating demand (Fleury & Fleury, 2009).

**CONCLUSION**

Lean is a systematic method to eliminate waste. There is a great focus on the consumer who defines waste. The aim is to only rigorously identify and eliminate waste to end up with a process that only includes steps that create value to the end consumer. Small iterative improvements move a company closer and closer to perfection.

---

⁶ Lean thinking is a new way of thinking any activity and seeing the waste inadvertently generated by the way the process is organized
⁷ explored together with customer

---

*Can fashion brands benefit from leveraging management methodologies developed for manufacturing?*

Hannah Gabriel
Can fashion brands benefit from leveraging management methodologies developed for manufacturing?

Hannah Gabriel

FIGURE 1 – LEAN EXPLAINED

https://www.pinterest.com/hennycho/ux/
2.2. Theory of Constraints – Constraint Reduction

ORIGIN

The Theory of Constraints is a System Management Philosophy developed by the Israeli physicist Eliyahu M. Goldratt in the early 1980’s. This philosophy is based on the assumption that a system is defined as a series of dependent processes, and that the performance of the entire chain is limited only by the strength of the weakest link. Therefore, a reduction of waste in the weakest link (constraint), increases throughput and improves throughput time, while simultaneously improving variation and quality. However, a reduction of waste in regards to a non-constraint resource might have no impact, or even a negative impact. The aim is to increase the performance of the entire organization (Goldratt, 1992).

FIGURE 2 – TOC EXAMPLE

In the above water pipe, how much water can it process per second? Yes, even though three parts of the pipe can process more, the whole pipe cannot process more than 10 ml/sec. If you now increase the diameter of the first section from 30mil/sec to 45 ml/sec, will it increase overall throughput?

This theory is about safely maximizing, and efficiently managing the productivity of a company from a global, and not only a local, perspective. However the implementation of this methodology requires a culture change – by definition, non-constraint operations have greater capacity and therefore will have some non-productive time during the workday (Sproull & Nelson, 2012).

It has been considered a popular technique used by companies like Avery Dennison, Bethlehem Steel, General Motors, National Semiconductor, United Airlines, Boeing, ITT,
Procter and Gamble, United States Air Force logistics command and United States Navy (Institute of Management Accountants, 1999).

“If the goal is to make money, then (putting it in terms Jonah might have used), an action that moves us toward making money is productive. And an action that takes away from making money is non-productive” (Goldratt, 1992, p. 41).

**APPLICATION**

**TOC** is based on a rigid five step approach: Identify the constraint, exploit the constraint, subordinate other resources to the constraint, elevate the constraint, repeat the cycle (Goldratt, 1992).

This methodology sets itself apart by taking into account local vs. system optima, and dependency on constraints.

**Local vs. system optima**

No matter how fast the other components are able to fulfill their task, the system cannot produce at the rate faster than its slowest component; the chain is no stronger than its weakest link. Optimizing a work station that is not the bottleneck could ultimately turn out to be insignificant or even counterproductive. Efficiency is often confused with effectiveness. “There is nothing so useless as doing efficiently that which should not be done at all”, Peter Ducker. Growth comes from improving flow of materials through productive systems, rather than through piecemeal cost-reduction efforts in any one area of the system.

**Physical vs. policy constraints**

Physical constraints are capacities which are limiting to the overall output, policy constraints can either be behavioral or managerial in nature, behavioral constraints are behaviors and work habits exhibited by employees that result in poor performance from a global perspective. Managerial constraints are erroneous management strategies, policies and decision mechanism. It is a physical constraint if a person can only process an amount of
documents that is lower than the demand. Producing large batches as optima is an example of a policy constraint. A behavioral constraint is the belief that working with 100% of capacity is most effective, even though there is not enough demand. The theory offers various new methods for analyzing policy problems to provide guidance towards simpler solutions.

This methodology challenges managers to rethink some of their fundamental assumptions about how to achieve the goals of their organization, about what they consider as productive actions, and about the real purpose of cost management. It stresses the difference between local versus system optima, cause and effect, identifying measurements that emulate cause and effect relationships, physical versus policy constraints and the ultimate goal of making money.

**CONCLUSION**

TOC is a systematic method to satisfy consumer demand. It is based on the basic assumption that a chain is no stronger than its weakest link. The focus is on increasing throughput which is defined by actual sales whilst decreasing operating profit and inventory. This can only be achieved through continuously improving the constrained process.
2.3. Six Sigma – Variation Reduction

The following story explains the essence of Six Sigma.

Imagine an American Football coach that has to evaluate five kickers for an upcoming game. He has a GPS solution which informs him exactly where the ball crosses the field goal. He gives each of his kickers 100 chances to kick the ball through the field goal. The first 4 kickers kick all 100 balls between the uprights, but all of the four kickers were “all over the place”, meaning they never consistently crossed the goal post at the same point. The fifth kicker also kicks all 100 through the uprights but he consistently “splits” the upright.

“Who are you going to choose when it comes time to kick a field goal during the game?” Did you choose the fifth kicker? Why? … because he is more consistent. The fifth kicker will be more predictable because he has learned to have better control over the critical inputs when kicking the ball. If you were to film all 100 kick the fifth kicker made, you would see little variation in his kicking method which leads to little variation in his output, which is the ball “splitting the uprights”. So why is the capability of the fifth kicker more optimal than that of the other four?9


Can fashion brands benefit from leveraging management methodologies developed for manufacturing?

Hannah Gabriel
Six Sigma is a disciplined methodology that uses data and statistical analysis to measure and improve a company’s operational performance. It focuses on identifying and eliminating “defects” in business processes and has produced hundreds of millions of dollars in new profitability in a wide variety of industries.

“over the last 15 years or so, Six Sigma has been increasingly recognized as a powerful approach to achieve business process improvements in both manufacturing and, more recently, service and transactional industries” (Hayler and Nicholas 2007, p. 5)

Sigma is a letter of the Greek alphabet and is used in statistics to measure the variability of a process. Six Sigma as a measuring standard can be traced back to Carl Friedrich Gauss (1777-1855) who introduced the concept of the ‘Normal Curve’. However a variation of this has been used earlier, in the 1920’s, when Walter Shewhart explained that three sigma from the mean, is the point where a process requires correction. The term ‘Six Sigma’ as a production methodology was formulated by the Motorola engineer Bill Smith. He discovered the relation between the increase of quality and the decrease of the production cost right after implementing Six Sigma (Micu, 2012). Motorola documented more than $16 Billion savings as a result of Six Sigma efforts. Since then, hundreds of companies have adopted the Six Sigma model.
APPLICATION

Six Sigma, which is inspired by quality methodologies such as ‘Quality Control’, ‘Total Quality Management’ and ‘Zero Defects’ follows the basic assumption that reduction of variation will solve process and business problems (Micu, 2012). It uses statistical tools to understand the fluctuation of a process. Management is then able to predict the expected outcome of a process. Additionally, those tools can be used to further understand the elements of influencing that process if it is not yet satisfactory.

Usually, companies run with a 3 or 4 sigma level while spending 15 to 25% of their revenues fixing problems (Krishnaraj, accessed 10th March 2015). Businesses applying Six Sigma usually don’t spend more than 5% of their revenue on fixing problems. A Six Sigma level is defined by 3.4 defects per million opportunities (DPMO). For the international shoe manufacturer Nike Inc., this could mean a saving of around 5 billion\(^{10}\).

**FIGURE 3** - Cost of poor quality versus sigma level (KELLER & PYZDEK, 2009)

\(^{10}\) [http://news.nike.com/earnings](http://news.nike.com/earnings)
Success stories (Pande, et al., 2000)

- General Electric $7-10 billion using Six Sigma in 5 years
- Dupont $1 billion in 2 years ($2.4 billion after 4 years)
- Bank of America hundreds of millions within 3 years, cut cycle times by more than half, decreased processing errors by an order of magnitude
- Honeywell saving $2 billion in direct cost
- Motorola $2.2 billion in 4 years

The effectiveness of Six Sigma is unquestioned in the technology manufacturing sector for which it was developed. However, to market it to other industries with different needs, the technical content was removed and retained only the management parts, with Black Belts and the DMAIC problem-solving model.

CONCLUSION

Six Sigma is a quality improvement method that seeks to identify and remove causes of defects and minimize variability of a process. It uses empirical and statistical methods that often can only be applied by so called ‘Black Belts’. Six Sigma often focuses on bigger project where the root-cause is unknown.
2.4. CONCLUSION

_Total Quality Management_ (TQM) should be considered the "mother of all" of the more recent process improvement methodologies including Lean, TOC and Six Sigma. TQM, developed by Deming focuses on 4 key statements:

1. Managerial responsibility for continuous improvement
2. Focus on the work processes to achieve improvements
3. Use of statistics to measure process performance
4. Employee involvement and empowerment

All the process improvement tools we selected share many common features. They share the philosophy that processes can always be improved. They share the assumption of measurement and statistics being a key to improvement. And they share the faith in the power of the workers closest to a process to be able to improve it.

The three methodologies selected are borrowing most of their content from TQM but have developed into variations to fill-in short-comings of TQM. They strengthen all the areas of TQM where it is weak, whilst maintaining its strengths. Their main focus is aimed at satisfying customer demand. The fact that each of their frameworks is based on a 5-step approach intensifies the recognition of the need for a step-by-step approach. Another similarity is the importance set on a closed loop PDCA cycle. It recognizes inertia is the enemy of continuous process improvement. They focus on increasing competitiveness through questioning, rethinking and optimizing current processes and making it a habit.

Even though they have the same origin they can’t contradict each other. Lean states that every step that does not add value to the consumer should be eliminated and TOC only focuses on elimination of waste in the constraint. However, there is no right or wrong way. Used in the right way, they can even complement each other and fulfill each other’s short comings. Often, Lean is argued to be unfocused in the optimization effort, and TOC provides a suitable framework for focus. Through experience and logical thinking, a business will be
able to effectively decide which tools are appropriate for their use. It is a living and evolving system, from which we have to reverse-engineer underlying principles from case studies and experience, in order to deploy them in other context.

‘Lean enterprise’ and ‘Lean Six Sigma’ are terms often associated with the combination of Lean, TOC, Six Sigma and various other methodologies. They are aimed at developing a more holistic view on enterprise-wide application and leverage different aspects of process improvement methods. The combination of Lean, TOC and Six Sigma is proving to be the best approach developed yet. It adds more tools, looks at more situations, and achieves results faster than any other methodology alone. However, the style of management most of this methodologies and merges are aiming for is now generally thought of as Lean.

Implementation of those methods, particularly outside of car manufacturing, requires to abstract the principles behind the tools provided, and select, adapt or develop new tools to apply these principles in a different context. It depends on the context of the business. Lean works differently in manufacturing, engineering, construction, health care, software development, law, marketing, etc., etc. We must raise our level of understanding from copying specific practices to seeing the underlying principles that made the whole system work.

**Consumer focus**

Value, as well as waste is defined by the consumer. Only what the consumer is willing to pay for is regarded as valuable. Any activity that does not add value to the consumer is waste and should therefore be eliminated.

**Work-in process**

Only completed work in the hands of customers is valuable. Until then, it isn’t. This is opposed to accounting rules that assign a dollar value to inventory. From a customer perspective you need to be making just enough product to ensure they get what they want, when they want it. Not only is work in progress invaluable, it’s also slowing you down.
Bottleneck

Every company has at least one bottleneck. This is no criticism; it’s just a fact. There is always one process whichs maximum capacity is lower than the stages before or after. That particular constraint is the limiting factor of the delivery capability of the entire system.

Capacity

Don Reinertsen states in ‘The Principles of Product Development Flow’, that if you work your system to anything near maximum capacity, you will get little to nothing done. There is a tradeoff between resource efficiency and delivery speed. Reducing work in progress from 90% of your maximum capacity to 89% will make you 28% faster. Limiting work in progress to 85% of capacity will make you 54% faster (Reinertsen, 2009). Doing a little less could mean you can produce much more, much faster. And time is money in innovation.

The aim is to achieve process excellence as defined by the consumer.
3. APPLICATION PROSPECT FOR FASHION BRANDS

In the following we test if we can leverage tools that have already been developed and apply them in Fashion Operations. The following management tools are usually used in either, Lean, TOC or Six Sigma. Companies new to process improvement methodologies can follow a three stages process of continuous improvement to achieve process excellence. The foundation is important to clean-up the current process, make waste visible and remove it. The second step, Acceleration is about speeding up operations and making it more efficient. The third step, innovation is about changing the way we innovate, making it more effective.

3.1. FOUNDATION

This first part is about building a strong foundation that supports and promotes speed, agility and innovation. This is especially important for apparel brands who have experienced a period of growth. Companies often lose track of adjustments made, and required, to meet new business needs. Instead, they add patches here, and an extra feature there. This increased complexity, however, leads to increased cost and decreased agility.

Lean, which focuses on waste reduction, supplies many tools that can help to reduce complexity in a process. In the following we will explain how 5S, VSM, 5 Why’s, Visual Management and Throughput Accounting can help to build a sound foundation for a company’s processes.
3.1.1. 5S-Method

5S is a method that ensures all the right parts and tools are at hand at the right time. It is a framework which follows 5 simple steps:

1. Sort
2. Systematic arrangement
3. Shine
4. Standardization
5. Sustain

The 4th ‘S’ of standardization is especially noticeable and has a large impact. This will be elaborated further in “Best practice sharing”.

This structure can be applied to many different environments. From simple organization of the workstation, or the layout of documents across digital information platforms. It is a very simple method which can lead to great results. 5S can eliminate time wasted searching for information and drastically increases utilization. It further decreases the lead-time for projects and processing of documents. Furthermore, it cleans up unused documents and items which leads to a more structured and efficient way of working. All of this whilst decreasing costs. Decreasing time spend on searching for documents can free up time to work on more value-adding activities. 5S is a logical system that should be present at any company.

Example:

In Fashion Operations we have used 5S to organize data sharing platforms and organized entire work floors. It had helped us to speed up operational tasks and increase alignment, using standard templates. The team could then focus on more creative tasks. More information you can find in appendix 9.
Can fashion brands benefit from leveraging management methodologies developed for manufacturing?

Hannah Gabriel

FIGURE 4 - EXPLANATION 5S

3.1.2. **Value Stream Mapping (VSM)**

In most fashion brands, much of the work is “invisible”. You can’t work through the office and ‘see’ work piling up. Most of it is stored in computers or people’s heads. We therefore must focus on making work visible.

Value Stream Mapping is a tool used to analyze a current process and to help in developing a future process for the series of steps it takes to make a product or deliver a service.

**Method:**

1. Identify the target product family or service. Define the problem, set the goals and objectives, and select the mapping team.
2. Draw a current state value stream map, which shows the current steps, delays, and information flows required to deliver the target product or service. This may be a production flow (raw materials to consumer) or a design flow (concept to launch).
3. Assess the current state value stream map in terms of creating flow by eliminating waste
4. Draw a future state value stream map.
5. Work toward the future state condition
This process focuses on systematically eliminating waste. Womack and Jones believe there
are 8 wastes visible in most companies, concluding that waste is the main restriction of
profitability (Womack & Jones, 2003).

**Transport** – Moving people, products & information

**Inventory** – Storing parts, pieces, documentation ahead of requirements

**Motion** – Bending, turning, reaching, lifting

**Waiting** – For parts, information, instructions, equipment

**Over production** – Making more than is IMMEDIATELY required

**Over processing** – Tighter tolerances or higher grade materials than are necessary

**Defects** – Rework, scrap, incorrect documentation

**Skills** – Underutilizing capabilities, delegating tasks with inadequate training

Unnecessary transport, inventory, motion, over production, over processing, defects and
underutilizing skills are not only very costly but do increase lead-time and decrease
customer satisfaction.

Our aim is therefore simply to reduce any waste in the business. Mapping the current state
is one tool to visualize the waste in a process.
Optimizing as many non-value adding steps as possible has two benefits: First, obviously, eliminating non-value adding steps reduces workload and clarifies the process for all stakeholders. More importantly, VSM questions each step in the process if it is actually adding value to the customer. Usually, only a fraction of steps are adding value to the consumer. This direct connection between brand and consumer and a streamlined process can be a great source of inspiration. Reducing waste and decreasing complexity makes value more visible to the designers.

Example:

A UK government office used VSM and achieved double-digit productivity gains in the number of documents processed per hour which improved customer service by decreasing lead-times from 40 to 12 days. Documents processed correctly the first time were increased by 30%, and lead-time for processing mail decreased from 15 to 2 days. (Bhatia & Drew, 2007)
Through experience, streamlining can lead to a huge amount of time-saving. As one of the interviewees mentioned, she believed she could save 70% of her time by streamlining processes by developing a simple checklist for briefings she was already able to eliminate countless back and forth outings to acquire necessary information (Appendix 5).

3.1.3. 5 Why’s - Method

Do you always know ‘why’ you are doing each step in your working day? Questioning current practices and capabilities helps us to understand where we are and where we want to be. We ask questions in order to find answers and solutions that lead to improvement.

A particular useful tool is the ‘5 Why’s’. It is a technique often used to get to the root-cause. It is about asking “why” to allow us to delve further into a problem. Most of the time, if we are trying to find the root cause of a problem, we only dig down one stage. “Why was this customer not satisfied?” - Their order was delayed. However, digging down further can show related patterns and connections. It could be that the order was processed a week later than anticipated. “Why was the order processed so late?” - The order information was stuck in the system and needed to be manually processed. “Why was the order stuck in the system?” - A product in the order was not available in the system. “Why was the product not available?” A product category was not entered in the system and could therefore not be allocated. You could even dig deeper, but already at this stage you can see a pattern emerging. Fixing the root-cause might solve hundreds of similar issues and prevent more issues from arising. Furthermore it unravels problems that happen so frequently that they already became normal.

Example:

I experienced a situation where the manager had just implemented daily huddles to discuss problems that arose from day to day. Using the ‘5Why’ method they came across an issue in the order book. One employee explained that they were having problems with it since months and it required the customer to file an order a second time. Customers were used to this issue and stopped complaining. The employee therefore explained that it wasn’t an issue

---

Can fashion brands benefit from leveraging management methodologies developed for manufacturing?  
Hannah Gabriel
anymore because there was no longer noise around it! The manager was shocked, but realized that this kind of inertia was happening regularly.

3.1.4. VISUAL MANAGEMENT

Example:

“A critical-care researcher at Johns Hopkins University, Pronovost may have saved more lives than any laboratory scientist in the past decade by relying on a wonderfully simple tool…”

I know what you’re are thinking, but no, Six Sigma is not the tool. Before I tell you what it is, consider that after implementing it in hospital ICUs in Michigan, hospital-acquired infections dropped from 2.7 per 1,000 patients to zero. That means more than 1,500 lives were saved in the first 18 months.

So what is this ingenious invention? What critical breakthrough occurred? What fancy bit of science and statistics produced these stupendous results? Which process improvement methodology was put to work?

A checklist.”¹²

Visual controls, like checklists, signs or scoreboards, promote quick recognition of information that is being communicated in order to increase efficiency and clarity. Visual controls have been designed to make the control and management of a company as simple as possible. It entails making problems, abnormalities, or deviations from standards, visible to everyone. When these deviations are visible and apparent to all, corrective action can be taken to immediately correct these problems.

"If I can see it, I can fix it.”

¹² http://www.isixsigma.com/new-to-six-sigma/history/simplicity/

---

Can fashion brands benefit from leveraging management methodologies developed for manufacturing?  
Hannah Gabriel
**Obeya**

Obeya comes from the Japanese word for “large room” or “war room”. The Obeya room became very popular, especially for tracking and development of strategies and products. It increases the effectiveness in communication and decision-making and eliminates barriers preventing progress, such as e-mail. The walls of an Obeya will be displaying visually engaging charts and graphs documenting program timing, milestones, progress-to-date, countermeasures and issues. An Obeya should be tuned to the specific needs of a company.

Example:

*Having all the relevant information on the walls, and the whole team together discussing on how to move forward, can have a hugely beneficial effect on a company. Before using an Obeya room, we would meet, discuss a subject, and then come to the conclusion that we needed specific information which we would then review at the next meeting.*

*Now the Obeya room is used to discuss project progress and strategic goals. Every owner of a strategic track was required to explain whether they were on track or not. If they were not, the track was colored red and was assigned a counter measure. Having all the relevant information and the whole team present, the discussions were more energized and creative.*

*Furthermore, it is easier to see relationships between overall-strategy and tracks. Alignment is suddenly visible.*
3.1.5. THROUGHPUT ACCOUNTING

All companies measure their success but are they measuring it in the right way? In the following we will discuss how measuring the right things can lead to a culture change towards a competitive advantage which exceeds industry standards.

Currently most companies use harmful accounting methodologies which promote behaviors contrary to the goal of increased profitability. They also do not accurately and clearly explain what happens within the company. Eliyahuu Goldratt developed an alternative accounting methodology to cost accounting (CA), based on throughput accounting (TA), to analyze the relationships between resources and processes and determine where to focus the company’s effort. His system of measurement can be used to make strong and logical decisions. They immediately represent the current state of the business and promote a culture change towards end goal focused behaviors. This is especially true for fashion brands where speed and low costs are key. Using the right measurement system is essential.

Difference to conventional measuring systems

The differences between CA and TA are small but both have a substantial impact when optimized correctly. In traditional accounting, there is a very strong emphasis on cutting expenses. TA, on the other hand, considers cutting expenses to be of much less importance than increasing throughput. Cutting expenses is limited by reaching zero expenses, whereas increasing throughput has no such limitations. TA seeks to increase the speed or rate at which throughput is generated by products and services with respect to an organization’s constraint. It will also only consider products sold as throughput. This also further limits production of surplus products for the means of hitting efficiency targets.

Only costs that vary totally with units of output, raw materials for example, are allocated to products and services which are deducted from sales to determine throughput. For example, direct labor is noted in CA as a variable cost, however it is seldom possible to adjust the workforce directly to production demand.
It is wrong of us to assume that the total performance of the system is the sum of all the local performances. Most of the time we are working with dependent steps in a process. The whole chain cannot work faster than the slowest step. Any process that is faster than the constraint needs to wait for it. The lead-time is therefore not the sum of all local performances. Instead we need to multiply the amount of steps in the process by the processing time in the constraint.

Inventory is a good example. Accumulating inventory inflates assets and generates “paper profit”. However, this inventory may never be sold and only incurs cost as it sits in storage. On the other hand, TA considers inventory as a liability because it ties up cash that could be used more productively elsewhere. It includes company investments related to throughput (production facilities, equipment, raw materials, part finished and finished products not yet sold). Decreasing waiting times in your production line will increase throughput and will also reduce inventory. It is only an internal accounting tool and does not follow Generally Accepted Accounting Principles (GAAP.).

The TOC measurement system is not only a great tool to link performance measurements to a strategy. It also helps to co-ordinate, monitor, diagnose and give incentive for the right behavior.

**Co-coordinating**

It is possible to use this kind of measures to broadcast expectations. It should give an idea of what is expected by each step in the process and its contribution to the overall goal. It is important to visualize the impact of local measures on the overall goal to eliminate sub-optimization.
**Monitoring**

The TOC measuring system is based on constant monitoring. Measures are focused on reporting what is currently happening in the company in real time. It provides the back bone for a closed loop feedback process to continuously measure and improve services; being proactive rather than reactive. Constant monitoring is essential for continuous improvement and it helps to focus optimization efforts to increase reliability and increase customer satisfaction.

**Diagnosis**

TOC measurements display clearer Cause & Effect relationships through analyzing the relationships between resources and processes and determining where to focus the company’s efforts. TOC is all about focusing your efforts on the area where it has the biggest impact on throughput. It is part of comparing actual results alongside pre-conceived expectations, and learning from this analysis.

**Example:**

*I have been working with a Customer Operations team that had been measured on how many customer complaints they were able to solve per day. This kind of measurement promoted the wrong behavior since it was not attacking the root-cause. The manager decided to change the measurement to decrease customer complaints in the first place. Now the team started analyzing the root-causes of the customer complaints, and as a result was able to decrease customer complaints by 30%.*
**Incentive behavior**

These measurements can be used to create a new culture or mindset, and are critical in achieving revolutionary performance goals. Unaligned measurements serve as barriers to ongoing and lasting improvement. As mentioned in Goldratt’s book ‘The Goal’, “Tell me how you measure me, and I will tell you how I will behave.” (Goldratt, 1990, p. 26). This explains the vitality of aligning our actions with the company’s strategy.

1. What gets measured, gets managed
2. What gets rewarded, gets done

Throughput accounting is a valuable tool for fashion brands. It takes away the focus from a pure cost to a revenue generating perspective. In the past fashion companies who focused too much on cost struggled to keep their competitive edge in product offer and brand equity. Throughput accounting facilitates clearer decision-making with the priority of increasing throughput. As an example, it could be used to make pricing decisions that are more focused on the end goal of increasing throughput instead of based on short sighted margin generation.

### 3.1.6. Conclusion

For any company it is important to have the basic processes running smoothly. Especially for highly complex industries, like the fashion industry, it is vital to redesign processes and simplify the value stream to make it more reactive and agile. It is important to start with this step. The implementation of the next to step could be jeopardized if the processes are not cleaned up and removed from clutter beforehand.
2.2. **ACCELERATION**

This step is about changing the way we look at our business with the goal of setting us apart from the competition in process excellence.

According to studies of traditional project management methods by *Standish Group*, only 44% of projects finish on time. Projects typically reach completion at 222% of the duration originally planned, 189% of the original budgeted cost. 70% of projects fall short of their planned scope, and 30% are cancelled before completion. With traditional project management methods, 30% of lost time and resources are typically consumed by wasteful techniques such as bad multitasking, student syndrome, in-box delays, and lack of prioritization (Roebuck, 2012).

**3.2.1. STANDARD PROBLEM SOLVING APPROACH**

All three methods make use of a five step approach to general improvement. They agree that a standard approach helps to achieve goals, and helps to align and communicate a common goal. They also supply valuable tools for use at various levels to solve problems and discover root-causes, as well as allowing the checking and maintenance of results.

A3’s are named after the size of the paper it is written on. All the most important information should be visible on one page. There are strategic and problem solving A3’s which are used for small projects that cannot be solved on the spot and need more investigation as to what the root-cause is. This is especially valuable when cross-functional teams are involved, however it may take too much time to develop, especially if the business is not experienced with this method of problem solving. Therefore it is very important to decide when an A3 is needed, and when it is not. And practice…
3.2.2. SCORE

SCORE is a method to assist organizations to prepare for, execute, and sustain, successful process improvement events. SCORE focuses on business priorities, progress, cooperation and improving communication. It is about making change happen!

Example:

*Allegheny General Hospital is a good example of success. They had been utilizing Lean and SCORE and reduced infections due to femoral I.V. lines by 84% in one year. This resulted in reducing related deaths from 19 to 1 and operational costs by 8 million every year* (Shannon, 2006).

SCORE works against creating long lists of good improvement ideas and trying to implement them all at the same time, which usually leads to an OK job on some, a mediocre job on others, and almost no work on many. Instead SCORE focuses on doing a great job on “The One” and select a team of people to work on a specified problem for a short period of time.

It is based on:

- **Select** the process to be worked on
- **Clarify** the problem statement and project objective. Measure historical data to quantify the current capability.
- **Organize** the team members and train them on methods and scope of project.
- **Run** the event (observe, brainstorm improvements, select improvements, test, implement, 3-5 days).
- **Evaluate** the results, standardize the new procedure, and define future work.

SCORE is about a plentiful supply of short projects in order to promote progress, instead of getting lost in planning. It also stresses the importance of measuring before, during and after the event.

---

*Can fashion brands benefit from leveraging management methodologies developed for manufacturing?*

Hannah Gabriel
Through experience, stakeholders do not believe a project can be finished in a few days, instead of the weeks or even months lead-time of similar projects. However, it is inspirational at what is actually possible if there is enough focus. In one project we were stuck because we were missing specific data. This meant the entire project team went throughout the whole building, looking for the person who could provide us with the right reports. We found somebody after 25 minutes who was able to print us the reports immediately. If we had more time allocated, we would send an e-mail to the relevant person, expecting to receive a reply a week later, in order to schedule another meeting two weeks later, and so on.

*A good project objective example would be to reduce the average development time for new styles from 6 to 2 months by June 2016.*
3.2.3. MANAGING DAILY IMPROVEMENTS

Lean fosters a company culture where employees constantly look to improve their skill levels and processes. Managing Daily improvements is about creating a habit for continuous improvement. It is based on daily routine, roles & responsibilities, and discipline. Issues should be recorded daily and reported through a help-chain. If the problem is solved at the bottom level, great! If not, it must be communicated up the help-chain until it is getting the correct attention and the issue is getting solved. This makes sure that each issue is followed up on.

A routine can also be created through daily huddles. The whole team meets in the morning to discuss yesterday’s problems and together they come up with countermeasures. It is very important that every project has a clear owner who is accountable for progress. Additionally, discipline is important, especially for leadership. They need to understand that they lead as an example and if they move their priorities, the team will too!

Creating a routine for continuous improvement is essential to react to a constantly changing environment. We need to understand that doing one or two improvement projects won’t make the cut. The routine of improving and adjusting to our environment is essential to grow sustainably.

3.2.4. BEST-PRACTICE SHARING

In any case, where the routine can’t be automated, we must develop standard processes. The visible, physical environment around our employees should guide them in the way they should do their work. Standardization and best-practice sharing should be in a closed loop of continuous improvement. Stripping down the process and focusing on the essence permits increased possibilities for best practice sharing (Wang & Huzzard, n.d.). On the other hand, best-practice sharing supplies a base line for standardization. Standardization should not be limiting but instead should be the best way to do the job. In most companies, some employees are just a little more efficient than others, usually because of their experience or skills. Best-practice sharing supplies the tools to share this knowledge and experience with others.
As Nike CEO, Mark Parker once mentioned: “The distance between us and our potential is far greater than us and our competition,” “We are in the business of unleashing and maximizing our human potential.

Organizational learning is commonly seen as a way to retain and improve competitiveness, productivity, and innovation in uncertain technological and market circumstances (Dodgson, 1993), and has been identified as that which underlines a company’s sustainable competitive advantage (DeGeus, 1988).

Standardization of work procedures, under lean production, enables the setting of benchmarks against which performance can be measured and meaningfully diffused within and across work groups. However, standards and benchmarks should be reviewed regularly according to best-practices.

Especially in fashion design and product development, where tasks are based on talent and experience, it is important to spread it across team members. Increasing knowledge and confidence through best-practice sharing can encourage teams to make more decisions by themselves and therefore speed-up the process whilst staying flexible.
3.2.5. **Pull-Systems**

Example:

*Buying beans from a supermarket shelf awakens the Pull process. As the shelf runs low a message is sent to the backroom to restock. The backroom messages the warehouse for overnight delivery to restock. And so it continues down the value stream with messages to grow tomatoes & beans and manufacture tin cans to meet customer demand. The Pull process is used to synchronize supply and demand.*

In a pull system, removing an end item triggers the order release from which the flow of materials is initiated\(^{13}\). In contrast, a conventional push system allows for production or material flow in anticipation of future demand. Pull is used in manufacturing industries as one approach to solve problems of excess inventory, extended production times and over/under production. However, the principle can be also applied in an office environment.

Example:

*A famous sports fashion brand has implemented a system that is based on a category set-up. They realized that the usual internal management split in tops, bottoms, shoes and accessory was not supporting a customer focused demand model. By splitting up their value chain in basketball, football, sportswear and so on, they were able to focus more on a particular kind of customer. Adjusting their entire Fashion Operations structure has enabled them to react quicker to their environment and increased their competitiveness.*

\(^{13}\) [http://en.wikipedia.org/wiki/Push%E2%80%93pull_strategy](http://en.wikipedia.org/wiki/Push%E2%80%93pull_strategy)
Re-orders which are based on forecasts, rather than on actual use, not only carries with it more risk, but a system design based on consumption is less labor intensive, with clear accountability. Additionally, it frees up time for management to focus on improving processes and business which often gets over-looked as managers get caught-up in day-to-day direction.

Example:

*Zara is the perfect example for a company that uses the pull-model. It focuses their efforts on communication relevant to customer demand and allows a quick reaction to this scenario. Store managers place up to two orders per week, resulting in shorter production runs which take out most of the financial risk. Furthermore, there is a close collaboration between the five different teams (design, product, merchandising, sourcing, and patterns) that share the same space and work closely together.*

“While its rivals typically start planning their lines nine months before they hit the shelves, Zara has a reputation for instant reaction to fashion trends and rapid restocking of stores to meet demand on popular items. They are also not afraid to cancel items that aren’t selling. Zara can make a new line—from the initial concept to when it arrives in the shops—in just three weeks. Zara lines rarely stay on the shelves for more than a month, and new stock often sells out in days,” CNN reports (Infor, 2012).

Every fashion company needs to assess how much money it is losing through wrong forecasting, lost-sales and mark-downs. It might be worth moving production of certain highly volatile products closer to the consumer to decrease lead-time. Or even pay a premium to factories who can produce a product in a short time-frame and therefore closer to consumer demand.

Example:
A service model differentiation has recently been applied in a couple of fashion companies around the world. It looks at which value adding services a customer requires and what it is worth to the company itself. Looking at it from a value generation point of view, some accounts (shops) are more important than others. For big accounts it might be worth to offer labeling and tagging service, or a garment processing and packaging services. However, for small accounts you might require them to pay a premium fee. Understanding how value moves through the company to the customer and what the customer is actually willing to pay for is increasingly important.

“It’s fascinating because it’s the concept of ‘print on demand’ extended to absolutely any product. Today, in some fulfillment centers, there is printing equipment that allows Amazon to print and ship a book within four hours of a customer order. 3-D printing is just an extension of this concept to all sorts of goods other than books. The idea of making a product for the customer at the time the customer actually orders it is fascinating because that’s what the creators of lean always dreamed about. It’s the ultimate ‘just in time’.” (Onetto, 2014)
Kanban literally means ‘signal’. It is a just-in-time pull scheduling system where items are replenished at the rate they are consumed. It establishes an upper limit to work in progress, ultimately avoiding any overloading of the system. It also can be used to schedule work in an office environment. A Kanban board uses magnets or post-it notes which represent a work item, and which move around the board. The board can be divided according to specific needs, but is often divided into three sections: “To do”, “In Progress”, “Done”. It is used to visualize the workflow, limit work-in-progress, “pull” from column to column, and monitor, adapt and improve. It is a low tech but highly visual solution. However, the pull system requires a fair amount of science and discipline backing it for it to work effectively.

The below picture is explaining in a simple example how the Kanban process is working. However, this can be applied in many different ways.

As each burger is consumed . . .
They are removed from the regulator . . .
And then replenished by the kitchen . . .
Not made to a forecast and pushed at the customer

FIGURE 6 – EXAMPLE KANBAN PROCESS
A common way to use is Kanban is by means of a Kanban board. This can be a physical board or a digital version. It is meant to visualize waiting, work-in-progress and finished tasks. The idea is to only allow a certain number of tasks to be in progress. It therefore promotes focus but also increases the speed a project or task is finishing because you are not working on too many projects at the same time.

Below you can see a standard example for a Kanban Board.

![Kanban Board Diagram](http://leankit.com/kanban/kanban-board/)

**FIGURE 7 - STANDARD KANBAN BOARD EXAMPLE**

---

However, you can also adjust the Kanban boards to your specific needs. In this example a fashion blogger has developed a minimalistic modern version of a kanban board. The picture below represents her desktop screen. On the first white sheets she puts all documents she still needs to work on. The second white sheet all the documents that she is currently working on and the third sheet all the documents that are finished but haven’t been archived. The physical space on the white sheets naturally limits work in progress. It is also very visual in displaying the current situation; we can see exactly how many documents we still need to process, how many are currently work-in-progress and which we already finished.

![FIGURE 8 - MINIMALIST KANBAN BOARD BY FASHION BLOGGER LOVE-AESTHETICS.NL](http://love-aesthetics.nl/)

3.2.6. CONCLUSION

Especially Lean, moved away from rigid frameworks to flexible business models that promote speed and agility. But all three methodologies offer many tools to speed up Fashion Operations. They are focusing on faster decision making, speeding up project management and increasing the pace at which we can react to consumer demand. This is a necessity when trying to keep up with competition.

---

15 [http://love-aesthetics.nl/](http://love-aesthetics.nl/)

Can fashion brands benefit from leveraging management methodologies developed for manufacturing?

Hannah Gabriel
2.3. **INNOVATION**

The third part, innovation, focuses on fostering creativity and ‘out-of-the-box’ thinking.

Innovation is a process where problems are solved with unique solutions or ideas which become embodied into a product or service, and which drives value for both the customer and the producer. Currently, globalization, deregulation and commoditization, are leading to ever increasing pressure to innovate. Each new generation restarts the competition from a higher standard of competence than the prior generation. Signals show that old practices no longer work quite as they used to. Over time successful companies must evolve their competence or become marginalized.

Innovation in itself is not valuable; it is only relevant if it helps us achieve economic advantage. It must help to differentiate us sufficiently from competitors so customers prefer our offers as opposed to those of the competition, and will pay a premium to support that preference. This neutralizes any advantage that our competitors might have once had. Everything else is only creating waste (Moore, 2005).
3.3.1. Structured Innovation

Innovation and creativity is likely not the first thing that springs to mind when reading about the above mentioned rigid frameworks. However, in the past, innovation and creativity have often been facilitated through standardization. Just think about the railroads, interchangeable parts, money, agriculture, containerized shipping, numbers, the internet and the worlds languages to see proven examples of this. Brands are now beginning to recognize that creativity, if not supported by direction, can easily end in chaos.

Example:
A standard approach, uniform adherence and advocacy to “The Apple Approach” of product design and development has been the base of Apple Inc.’s success. Conformity has set the base for an extraordinary level of innovation and productivity. Focusing on the similar, the shared and the common, provided a strong platform for scalable transformation and pipelining of good quality ideas and concepts.

Lean, TOC and Six Sigma tools provide a framework for an end to end approach and can bring structure and predictability to innovation. They help us build the foundation that supports and promotes speed, agility and innovation.
3.3.2. Eliminate Constraints in Our Thinking

If you are looking on the track record or Lean it is surprising that many companies are not even considering using the methodology. How come? Psychological inertia!!! It is always hard to leave comfort and security behind, instead of opting for the unknown.

Inertia is a state of rest as long as no force acts upon it. There is no motivation for action until there is either pressure present from superiors, or by signs of loss which then prompt employees to act. Psychological inertia prevents the human mind from reaching the full potential of its creative thinking capabilities.

Cognitive inertia is similar. It refers to the human tendency of belief, or sets of beliefs, to endure once formed. It is even more dangerous in regards to when beliefs cannot easily be visualized and tracked as behavior.

The idea of continuous improvement, which is apparent in all 3 methodologies, works towards eliminating inertia. The methodologies force us to dig deeper and uncover wasteful business practices. Constantly rethinking the way we are working ultimately leads to continuous improvement. Making ‘check & adjust’ a habit, and a part of the fabric of business, is how employees can break out of the box – and break inertia.
Can fashion brands benefit from leveraging management methodologies developed for manufacturing?

Hannah Gabriel

---

16 https://www.pinterest.com/loquacity/organizing-information-visually-infographics-etc/
3.3.3. **Lean UX**

Lean UX originates from the interactive design of today’s web-driven reality. With fashion design moving ever closer to designing an experience instead of apparel, the same principles can apply in the fashion design process.

Lean UX is a process which puts less emphasis on deliverables, and greater focus on the actual physical experience. Documents are eliminated where possible, or stripped down to their bare components. The development process is built on short iterative, low-fidelity cycles, with feedback from the team as early and often as possible. The team can be cross functional, preferably encompassing sales, merchandizing and marketing – collaboration is critical.

(Gothelf, 2011)

**Example:**

*Zara's approach has been revolutionizing. They have realized that they shouldn’t just optimize their current processes but rethink them as a whole. They made great use of technology to improve communications. By using customized PDA’s (Personal Digital Assistant), store managers are able to communicate easily with market specialists and other members of the supply chain; designers use computer-aided design systems that can transmit specifications directly to factory machines; and bar codes are used to track pieces of garments as they travel through the various stages of production. As a result, staff has constant access to up-to-date information.*

Focusing on deliverables has measured and compensated designers for the breadth of their work instead of the quality and success of the experiences they design. This can consume an enormous amount of time when combined with waterfall development methodologies.
Can fashion brands benefit from leveraging management methodologies developed for manufacturing?

Hannah Gabriel

(Define → Design → Develop → Feedback → Deploy) which pass through the complete product development process before receiving feedback. Long, drawn-out design cycles risk paralysis by internal indecision, as well as missed market opportunity. In other words, by the time the company decides internally how the product should be designed; the needs of the marketplace have changed, often resulting in the original design or idea being invalidated.

Example:

Zara has organized its operations and office layouts so that their design staff, production staff, market specialists, procurement staff, and production planners are all located next to each other to encourage informality and open communication. The physical and organizational proximity of the groups increases the speed and quality of the design process. In this way, Zara is able to achieve a higher level of efficiency than other companies in the fashion industry.17

By bringing the essence of the work to the forefront more quickly, it allows more time to focus on the actual experience currently being designed. The initial investment is minimal, which makes it easier to make changes or scrap entire ideas. There is no significant costs associated with completely re-thinking a direction. It ensures that every aspect of the team is aligned with a clear business vision. Furthermore, verbalizing your concepts early on in the process forces focus on areas which may not have been thought of previously. Involving the entire team from the outset allows team members to be more invested in the design. It ultimately minimizes the time spent heading down the wrong path, making work more rewarding and increasing the competitiveness of your company.

17 http://cavqm.blogspot.de/
Example:

Another way Zara is using short iterative innovation cycle is in product development. Zara produces and presents a limited number of new items in certain stores for a trial period. Larger volumes are only produced if customers react positive. Failure rates for new product are only 1% for Zara opposed to an average of 10% for other fashion retailers.  

3.3.4. Conclusion

Especially established brands are often struggling to keep up their speed of innovation. The bigger fashion companies get, the more risk is involved when developing new products. There is a difference in coping with a fail of a product totaling 200 pieces or a fail of a product totaling 20 000 pieces. Fashion brands need to structure their innovation process, create clear guidelines but leave space for creativity. Furthermore employees need to be aware that they are influenced by their own habits and beliefs. Fashion companies should work towards promoting an open-minded atmosphere that welcomes new explorative ideas.

---

18 [http://cavqm.blogspot.de/](http://cavqm.blogspot.de/)
3. Conclusion

A Fashion Brands Perspective

Lean, TOC and Six Sigma had been applied in many different industries, however, to decide if these methodologies are suitable for the fashion industry it was important to discuss the differences and similarities between industries where these methodologies are already widely applied and the fashion industry.

The similarities between fashion brands and the car industry were striking.

- Most functions in a fashion brand are found in car manufacturing. Finance, operations and transactional services have been subject of successful Lean, TOC and Six Sigma efforts before and can be translated into a fashion environment.
- Being able to compete on cost, speed and availability is vital for apparel brands, the same for the car industry.

However, what sets the fashion industry apart from most other industries is the irrationality and complexity of fashion trends. “Lean assumes that you know what the customer is willing to pay for, but that is not always the case” (Netland, 2013)

We conclude that although the structure of a fashion brand is not significantly different from that of many other industries, we deal with an increased amount of complexity and volatility. It was therefore important to see if Lean can thrive in a complex and volatile environment.

Lean, TOC, Six Sigma

The 3 methodologies focus on increasing competitiveness through questioning, rethinking and optimizing current processes and making it a habit. Used in the right way, the three methodologies can complement each other and fulfill each other’s short comings. Often, Lean is argued to be unfocused in the optimization effort, and TOC provides a suitable
framework for focus. Through experience and logical thinking, a business will be able to effectively decide which tools are appropriate for their use. There is no set recipe for how these methodologies are to be implemented it depends on the specific process and culture surrounding it.

These methodologies are not exclusive. There are new tools, features and methodologies soaring out of process research and the increasing pressure to innovate. Survival in today’s harshly competitive environment is only possible if we adjust our processes continuously. Continuous improvement is no more a ‘nice-to-have’ but has become a requirement to compete in today’s market environment. Nobody can argue with the underlying assumptions that waste reduction is beneficial and optimization in a constraint resource has a higher impact than in a non-constraint. If a company’s culture is changed towards that of continuous improvement, then you have a constant source of growth. Processes are improving, customer satisfaction is jumping through the roof, and your costs drop; and all this not just once, but repeatedly. If you are now thinking that there must be a limit? There is none. Toyota has been practicing Lean for many years, successfully improved their processes and their product. But they have not yet reached the limit of what they can achieve. However, only a fraction of businesses focuses on continuous improvement.

**FOCUS ON CUSTOMER DEMAND**

Lean thinking is not solely about cost reduction; instead the focus is in customer value. Lean thinking is delivering value for customers with minimal resources. It sounds simple, but surprisingly, many fashion brands do not actually know their customer.

A lean leader therefore understands that a business fundamentally exists to serve the customers. If it does that well, it will thrive. If not, the business will fail. We should see waste from the perspective of the consumer, defining it as anything they wouldn’t willingly pay for if they saw it on an itemized bill.
**Simplifying for Creativity**

One of the misconceptions of Lean is that it is mechanic and impersonal. At its roots, Lean is about removing layers of overhead between product and consumer. But it also is about recognizing that most of the knowledge of an organization is in the heads of the employees. It supplies the necessary knowledge, tools, experience and skills to help employees add value to a product. We will only get the right outcomes, and retain the right people, if we provide clear and consistent information about our organizational purpose – using not the dry ‘what’ but the inspirational ‘why’

"The problem with most approaches to branding is that they get in their own way. They've managed to make the work of managing and building brands more opaque, more complicated, and less accessible. The Lean Brand takes the opposite approach: a manageable and understandable set of concepts, tools, and methodologies to make informed brand decisions." - Randy Hunt, Creative Director, Etsy

**Habit of Continuous Improvement**

In the end, more important than to decide which methodology to go for, is understanding the urgency of continuously optimizing our processes. And to focus on understanding our consumers, their needs and preferences to be able to supply the product they wanted, when they wanted and where they wanted.

**Urgency of Staying Ahead**

It is vital for fashion brands to stay ahead of their competition. Innovation is often thought as costly however, the frameworks and tools by the three methodologies supply a more sustainable way for constant growth and innovation.

**Pitfalls**

A Lean transformation is not as simple as implementing a few tools. It requires a complete culture change towards a continuous improvement mentality. However, there is no change without leadership support. According to the Lean Enterprise Institute, who conducted a
survey with 2,500 businesspeople, the main obstacle to implementing Lean is the middle management. There are countless examples of Lean failing due to missing commitment. I myself have experienced how easily efforts can diminish if there is no clear direction throughout leadership.

“The application of lean management principles exposes problems by traditional business systems, which often is threatening to middle managers in the problem areas,” explains management expert James Womack, PhD, chairman and founder of LEI. “To get middle managers on board with lean transformation, organizations must transform the metrics and behaviors for judging their performances.”

**FINAL**

It is not possible to decide which methodology is best applied in a fashion environment. However, this was not the purpose of this study. Instead this study aims at explorative discuss if fashion brands could leverage management methodologies developed for manufacturing. I can say clearly that using those management methodologies could have a huge effect on a company’s competitiveness. We have seen above that there are tools and frameworks highly applicable to a fashion environment.

For fashion brands it makes most sense to develop their own process improvement method, and take the frameworks and tools from established process improvement methodologies as inspiration. The methodologies should not be seen only as an accumulation of tools but companies have to understand the underlying principles first. It cannot be done rigidly or dogmatically. It requires us to be open-minded and evaluate ideas on their own merits from wherever they may come.

The growing complexity of the fashion industry has forced companies to transform from their traditional business models in order to remain both innovative and competitive. By improving the entire value stream from design to production, fashion companies can build

---

better products faster while boosting overall business performance. In a dynamic fashion environment, companies need to adapt their way of working to meet consumer expectations without sacrificing brand equity.

I conclude that continuous process improvement will become a requirement to compete in today’s modern market. Lean can offer the right thinking processes to implement continuous improvement, however, using Lean tools is no guarantor for success. Implementation is difficult and needs full leadership support. In future, companies adjusting to continuous improvement thinking, will continue to develop new features, tools and even new methodologies.
Can fashion brands benefit from leveraging management methodologies developed for manufacturing?

Hannah Gabriel

---

**GLOSSARY**

<table>
<thead>
<tr>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5 Whys</strong></td>
</tr>
<tr>
<td><strong>5S</strong></td>
</tr>
<tr>
<td><strong>Agile Manufacturing</strong></td>
</tr>
</tbody>
</table>

---

Can fashion brands benefit from leveraging management methodologies developed for manufacturing?  
Hannah Gabriel

<table>
<thead>
<tr>
<th>Bottleneck</th>
<th>Bottleneck literally refers to the top narrow part of a bottle. In engineering, it refers to a phenomenon where the performance or capacity of an entire system is limited by a single or small number of components or resources.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Operations</td>
<td>The outcome of Business operations is the harvesting of value from assets owned by a business. Assets can be either physical or intangible. An example of value derived from a physical asset, like a building, is rent. An example of value derived from an intangible asset, like an idea, is a royalty. The effort involved in &quot;harvesting&quot; this value is what constitutes business operations cycles.</td>
</tr>
<tr>
<td>Cause &amp; Effect diagram</td>
<td>Cause-and-effect diagrams are also called Ishikawa diagrams (fishbone diagrams, herringbone diagrams). Common uses of the Ishikawa diagram are product design and quality defect prevention, to identify potential factors causing an overall effect. Each cause or reason for imperfection is a source of variation. Causes are usually grouped into major categories to identify these</td>
</tr>
</tbody>
</table>

---


<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design of Experiments</td>
<td>In general usage, design of experiments (DOE) or experimental design is the design of any information-gathering exercises where variation is present, whether under the full control of the experimenter or not. However, in statistics, these terms are usually used for controlled experiments.</td>
</tr>
<tr>
<td>DMAIC</td>
<td>DMAIC (an abbreviation for Define, Measure, Analyze, Improve and Control) refers to a data-driven improvement cycle used for improving, optimizing and stabilizing business processes and designs. The DMAIC improvement cycle is the core tool used to drive Six Sigma projects.</td>
</tr>
<tr>
<td>Drum-Buffer-Rope</td>
<td>Drum-Buffer-Rope (DBR) is the Theory of Constraints (TOC) production planning methodology originated by Eliyahu M. Goldratt in the 1980s. In fact, the concepts of DBR actually preceded the Five-Focusing-Steps and the notion of the &quot;throughput world&quot; in the development of the TOC paradigm.</td>
</tr>
</tbody>
</table>

---


---

*Can fashion brands benefit from leveraging management methodologies developed for manufacturing?*

Hannah Gabriel
| **Inventory (TOC)** | Money that is tied up in physical things: product inventory, machinery and equipment, real estate, etc. Formerly referred to in TOC as Inventory.  

| **Inventory-Dollar Days (TOC)** | TDD is the summation of the commitments not delivered on time during the chosen time period. The TDD value of individual missed commitments is calculated by multiplying the dollar value of the end product times the number of days the commitment is/was overdue. The system should strive for zero throughput dollar-days.  

| **Kanban** | Kanban is a system to control the logistical chain from a production point of view, and is an inventory control system. Kanban was developed by Taiichi Ohno, an industrial engineer at Toyota, as a system to improve and maintain a high level of production. Kanban is one method to achieve JIT.  

| **Lead-time** | A lead time is the latency between the initiation and execution of a process. For example, the lead time between the placement of an order and delivery of a new car from a manufacturer may be anywhere from 2 weeks to 6 months. In industry, lead time reduction is an important part of lean manufacturing.  

---

<table>
<thead>
<tr>
<th>Lean</th>
<th>Lean means creating more value for customers with fewer resources. 33</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lean thinking</td>
<td>Lean Thinking is a business methodology which aims to provide a new way to think about how to organize human activities to deliver more benefits to society and value to individuals while eliminating waste. 34</td>
</tr>
<tr>
<td>Operating Expense (TOC)</td>
<td>Operating expense is the money spent turning inventory into throughput. In TOC, operating expense is limited to costs that vary strictly with the quantity produced, like raw materials and purchased components. Everything else is a fixed cost, including labor (unless there is a regular and significant chance that workers will not work a full-time week when they report on their first day). 35</td>
</tr>
<tr>
<td>Muda</td>
<td>Muda (無駄?) is a Japanese word meaning &quot;futility; uselessness; idleness; superfluity; waste; wastage; wastefulness&quot;,[1] and is a key concept in the Toyota Production System (TPS) as one of the three types of variation (muda, mura, muri). 36</td>
</tr>
</tbody>
</table>

---

33 [http://www.lean.org/WhatsLean/](http://www.lean.org/WhatsLean/)
34 [http://en.wikipedia.org/wiki/Lean_Thinking](http://en.wikipedia.org/wiki/Lean_Thinking)

---

*Can fashion brands benefit from leveraging management methodologies developed for manufacturing?*

Hannah Gabriel
<table>
<thead>
<tr>
<th>Poka Yoke</th>
<th>Poka-yoke (ポカヨケ?) [poka yoke] is a Japanese term that means &quot;mistake-proofing&quot;. A poka-yoke is any mechanism in a lean manufacturing process that helps an equipment operator avoid (yokeru) mistakes (poka). Its purpose is to eliminate product defects by preventing, correcting, or drawing attention to human errors as they occur.(^\text{37})</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process Optimization</td>
<td>Process optimization is the discipline of adjusting a process so as to optimize some specified set of parameters without violating some constraint. The most common goals are minimizing cost, maximizing throughput, and/or efficiency. This is one of the major quantitative tools in industrial decision making.(^\text{38})</td>
</tr>
<tr>
<td>Pull</td>
<td>The purpose of the pull system (also called “kanban” system) is to have a measured queue of materials (raw materials, work-in-process, components, whatever) ready to be “pulled” by the next process step. After the materials are “pulled” a signal is sent to the preceding process step to replace what was taken.(^\text{39})</td>
</tr>
<tr>
<td>Sigma level</td>
<td>The maturity of a manufacturing process can be described by a sigma rating indicating its yield or the percentage of defect-free products it creates. A six sigma process is one in which 99.99966% of all opportunities to produce some feature of a part are</td>
</tr>
</tbody>
</table>


\(^\text{39}\) [http://leanblitzconsulting.com/2012/05/toyota-way-principle-3-pull-systems/](http://leanblitzconsulting.com/2012/05/toyota-way-principle-3-pull-systems/)
Can fashion brands benefit from leveraging management methodologies developed for manufacturing?

Hannah Gabriel

| Standard Deviation | statistically expected to be free of defects (3.4 defective features / million opportunities).  
In statistics, the standard deviation (SD) (represented by the Greek letter sigma, σ) is a measure that is used to quantify the amount of variation or dispersion of a set of data values. |
|-------------------|-------------------------------------------------------------------------------------------------|
| Throughput (TOC)  | Throughput (T) is the rate at which the system produces "goal units." When the goal units are money (in for-profit businesses), throughput is net sales (S) less totally variable cost (TVC), generally the cost of the raw materials (T = S – TVC). Note that T only exists when there is a sale of the product or service. Producing materials that sit in a warehouse does not form part of throughput but rather investment.  

TDD considers two things: 1. the monetary value of the things a link is committed to deliver but does not; and, 2. the number of days by which the link misses its commitment to deliver. TDD is the summation of the commitments not delivered on time during the chosen time period. The TDD value of individual missed commitments is calculated by multiplying the dollar value of the end product times the number of days the commitment is/was overdue. The system should strive for zero throughput dollar-days. |

---

Can fashion brands benefit from leveraging management methodologies developed for manufacturing?

Hannah Gabriel
Can fashion brands benefit from leveraging management methodologies developed for manufacturing?

Hannah Gabriel
Can fashion brands benefit from leveraging management methodologies developed for manufacturing?

Hannah Gabriel
Can fashion brands benefit from leveraging management methodologies developed for manufacturing?

Hannah Gabriel
APPENDIX

APPENDIX 1 - SITE VISIT – LEAN DC BELGIUM

With Senior Director Customer Operations and COPS Leadership team

Senior Director DC Operations Europe, Distribution Director

Summary:

The logistics center in Belgium was built in 94 to consolidate 32 DC’s in 1. Therefore it was designed to handle large quantities through automation. However, internal developments and the growing digital environment demand a simpler, flexible and scalable process design. After a few years of experimenting at the local DC, a new experimental system was developed. Starting with a totally blank canvas, they rented a new location. They have trialed logistics of equipment and added returns logistics. They have used the Lean principals to completely rethink the logistic process starting from the marketplace. They have developed a multi-channel solution that is flexible in speed generation, can handle big and small order and variation in demand. They realized automation was not the way to go:

“If you look at activities apart from another, in isolation, automation makes sense, if you connect them it gets very complex” Senior Director Customer Operations

The site visit was meant to teach about the new way of operating and in particular how we can translate those problem solving skills and apply them in Customer Operations.

My learnings were as followed:

We need a “burning platform” to implement such a culture change. However as mentioned by the Senior Director of DC Operations Europe, “If you don’t start doing that, you are going to die”. Isn’t that a ‘burning platform’? This helps to create a mind-shift towards the right

---

Can fashion brands benefit from leveraging management methodologies developed for manufacturing?

Hannah Gabriel
mentality. It is not only about cost and productivity but long-term vision and competitiveness. You need to believe in it!

Their approach was based on two components

1. Process & Infrastructure
2. Human System Design

**Process and Infrastructure** is totally focused on Analysis. Analyzing, tracking and estimating customer requirements, plant capabilities and market requirements. Data is driving this step however, we need to leave behind paradigms and rethink how we are operating. This step is about the layout of the plant and the processing steps.

**Human System Design** supports this process and promotes continuous improvement. The aim is the habit of continuous improvement. However, it still seems to be very unusual for us – that’s why it needs to be a set of standard practices that ultimately lead to a habit and becomes part of the fabric of doing business.

There is a clear help line for any employee in the company. If something happens on the shop floor and the employee doesn’t know how to solve the issue they know exactly who to contact for help. If that person can’t solve it, they again know exactly who to contact. This line goes up to top-management. This makes sure that problems are solved as fast as possible. However, each problem gets documented even if it is just a small one. This documentation gets reviewed by various stages to check if there are any abnormalities or patterns. Only if you track frequently you are able to take immediate action.

“No one has more trouble than the person who claims to have no trouble” Thaichi Ohno

The management team develops Pareto charts to discuss which projects have the biggest effect and focus on solving one after another.

**Managing Daily Improvements** (MDI) is a new part of this Human System Design. It was only developed 3 months ago but already showed great results. It is a daily routine to promote continuous improvement.

---

*Can fashion brands benefit from leveraging management methodologies developed for manufacturing?*

Hannah Gabriel
Top management starts every morning at 8.15 in a small room on the floor. The key metrics are on the wall, easily readable and comprehensible. Roles get divided; this part seems a little ridiculous but is actually quite helpful! There is a leader, a timekeeper (4 min per area), a note keeper and one person responsible on recording safety issues. These roles can be added on or deleted depending on environment. Then the whole management team starts the 15 min Gemba walk. They go to each area and ask the area manager for any abnormalities. The area managers are prepared, have filled out their charts and issues are easily visible in red. After mentioning the issue they straight away say if they have a solution and if they need help. If it is a problem they can’t solve by themselves the note keeper notes it down. They continue like this from area to area until they meet back at the small room on the shop floor to discuss each abnormality. Each abnormality is put on the board with an owner, countermeasures and strict timelines. The maximum timeline is 3 weeks. This is important to make sure projects do not get pushed out too far. Each day the also check the projects that are due on that date. If a project is finished it get’s put in a 30 day box which gets reviewed every 30 days to check if the problem didn’t reoccur. If it didn’t it will put in a 60 day box and after in a 90 day box. After 90 days the team is quite sure it will not reoccur.

Empowerment

Employees are empowered to solve their own problems.

1. Easy to maintain and comprehensible charts empower employees to spot issues easily.
2. Simple documents to report issues and ideas
3. On the second floor is a workshop where employees can work on optimizing their workstations. Workstations are build out of modular components and can therefor easily be changed and adjusted. It is also a very scalable solution: at one point returns increased immensely and the workstations couldn’t handle it anymore – the team was able to build 10 more workstation in a matter of days.

---

*Can fashion brands benefit from leveraging management methodologies developed for manufacturing?*

Hannah Gabriel
Using standards

A standard is there to judge! But in a standardized way!

There was a huge focus on standards. They explained that the more complex our operations are, the more standardization we need to support them. There were clear guiding principles they whole plant followed. They were not very detailed but showed the direction and mindset the plant was operating with. This was supported by clear targets. “I have a problem”, “Yes? What is your standard?” You don’t know when you have a problem if you do not have a standard you can compare your actuals with. A standard should not be limiting but adjusted according to best practice and ultimately lead to a common language which makes it easy to scale improvements.

Standards, their definition and working processes are subject of layered audits. That means that on multiple levels of the organization they assess if the standards are followed in the same way. This makes sure that they sustain those standards. If your employees are supposed to track a metric but you never ask for it, they will stop measuring it.

Levelled work

It is often perceived as a human capacity is limitless. An employee might be able to process double as much but he can’t sustain this for a long time or the quality is deteriorating. Humans work most effective when work is leveled based on volume and variety. That’s why they working with Kanban boards. (explained in Thesis)

They operate in a way that asks “Are you a good 50B $ company or a lousy 100B$ company?”

They do this through

- Daily routine
- Roles& Responsibilities
- Discipline

*If things are often wrong they are perceived as normal
APPENDIX 2 – INTERVIEW EXPERIENCED LEAN MASTER IN FASHION OPERATIONS

The interviewee explains that it is more difficult to use Lean in a fashion environment. Fashion brands do not know exactly what the customer wants. Often the customer itself does not know. However, they give you some indication.

Example in Sportswear: the aim is performance. The customer does not explain you the details and specifications but they will be able to tell you that they want to increase their performance. It is then the task of the designers to translate that wish into specifications and designs.

There are a lot of information we can gather these days about the consumer. From loyalty cards companies can build a picture of the consumer. Then there is RFID and online analytics.

The interviewee continues that Lean is very relevant for fashion brands, especially since more and more are planning to grow sustainable without increasing head count. Developments in the economy, cost and competitors make companies having to use workforce more creatively.

Cost effectiveness is how fast you can get the product to the market. Looking at Zara and H&M, reducing cost is vital. Many brands are now using standard operating procedures. For example for T-shirt patterns (H&M, Zara). It leaves them more time to concentrate on fabrics, colors.

Lean can be applied to any process but not every company. You need leadership support. Biggest thing stopping us is the ‘missing’ burning platform. Most fashion brands are doing so well that they do not see the need to change.

What you need to know:

1. Leadership is vital
2. Lean doesn’t happen over night
3. You need to understand current situations

Can fashion brands benefit from leveraging management methodologies developed for manufacturing?

Hannah Gabriel
4. You need the right skills in the organization
5. You need to understand your goal (Be clear what you want to achieve with a Lean transformation)

APPENDIX 3 - INTERVIEW WITH GRAPHIC DESIGNER

Graphic Designer, WE Europe HQ Retail (Marketing)

Background: The interviewee is a Graphic Designer who has been exposed to Lean while working 2.5 years for another company under a manager who really appreciated Lean. Now, working in a non-Lean environment she is able to explain benefits and pitfalls. She was supporting us during the Lean Gallery Event preparation with her Graphic experience. She is very valuable to talk to since she has expertise in the creative area but also in Lean.

Summary:

The interviewee is very enthusiastic about Lean. She has worked 2.5 years in a very Lean environment as a graphic designer. She never appreciated when she was there but changing to a less Lean environment has opened her eyes how much it had helped her creativity.

Now working processes are not clear or streamlined which leads to a lot of back and forward. An example is when she designs something just to find out that the signage hasn’t been approved. She needs to start the whole process all over just to find out that something else hasn’t been approved. By the time she presents it to management multiple people where involved and the design has changed various times. The management team who haven’t brainstormed before the briefing do not agree with the design and the whole process starts all over again.

If the brainstorm happens before the briefing, the approval process is before the design process and responsibilities are clear, many working hours could be saved. Kiki estimates that through 5S around 70% of her workload could be eliminated. Furthermore she believes that lean gives her space and focus to be creative and therefore actually improves the quality of her work. She admits that she saves resources when developing a concept before...
the team has brainstormed because there is a very high possibility she has to do it all over again. However, would she have all the input beforehand and understand what her customers expect she could put all her effort in that design.

She uses daily 5S, especially streamlining and standardization. She has developed a checklist for briefings to make sure she has all the information she needs and does not have to go back to her customers. She also has developed 5 standard one pagers customers can chose from when in a hurry.

She definitely prefers a Lean environment to a messy environment because she believes that Lean takes away all hurdles between her and her own creativity. But she realizes that Lean is a top down approach, especially if you have never experienced such an environment. However, she recently went to her team and demanded certain meetings to be standardized to save time and confusion.
APPENDIX 4 – INTERVIEW WITH LEAN COACH

Lean Coach and Process Analyst in EU Customer Operations

The interviewee, a Lean Coach, is a strong believer in Lean, however she explains that it is important to apply Lean in the right way to create efficiency, productivity and stabilization. You can’t just apply certain tools without absorption of the philosophy. This requires a to-down approach and therefor leadership support. Lean is a thinking process to get to the root causes of a problem and enables employees to solve problems independently.

The tools she uses not always originate from the Lean movement but follow the same philosophy. She uses Process Mapping, Visioning/ Future state, Root-cause Analysis, A3 thinking, strategy creation and catch-ball.

She explains that any lean transformation needs to start with coaching, followed by training and exercising problem solving or strategy creation for management. However, she also presses the issue that urgency is needed for such a change in mentality and that every company needs to make their own way. Again the philosophy is the essential piece, not the tools.

APPENDIX 5 – USING A3’S

The European office of a global apparel and shoe brand started using A3’s a year ago. They are using strategic and problem solving A3’s. Before the teams used one-pagers which are similar but focus much less on finding the real root cause. The Lean team and certified Lean Coaches promote the use of those A3’s. It is very difficult changing the way we approach a problem or strategy however, most people who learned to use this tools really appreciate its benefits.

It is a great tool to analyze the root cause, finding alignment, coming up with targets and dividing responsibilities. We use A3’s for most initiatives, especially if cross-functional teams are involved.

---

Can fashion brands benefit from leveraging management methodologies developed for manufacturing?

Hannah Gabriel
There is the pitfall of spending too much time in coming up with the A3, especially in the beginning when you are not yet experienced. It is important to learn when an A3 is needed and when not. There are no hard points to go on but only experience and intuition.

There are many benefits using this standard problem solving approach.

1. Easily understood
2. Scalable
3. Comparable

**APPENDIX 6 – CASE STUDY SHAREPOINT COPS COE**

Information hub was structured by teams. After restructuring of the department information for each team was separated in different information hubs. Additionally, information was duplicated, out of date and various versions.

Time was wasted looking for the right documents and different versions led to confusion. This information hub was also used by the COPS teams in the territories who out of frustration opened their own information hubs. This made it difficult to leverage information across countries.

Coming to the conclusion that the countries COPS representatives were our customers which we feed information, we realized we needed to adjust this information hub to their requirements. We created a problem solving A3 to align on goals and roadmaps. After we asked the territories for their input in creating a structure for the new hub we started a 5S exercise.

1. Sort
2. Systematic arrangement
3. Shine
4. Standardization
5. Sustain
Sort

We divided documents on the information hub in 4 categories:

1. Up-to date
2. Not up-to date
3. Not needed
4. Missing

We then deleted all not needed documents and put all missing documents on a to-do list.

Systematic arrangement

With input of the countries COPS we filled the structure with the right documents. The new structure was not divided in local teams which weren’t visible for countries but according to ….

Shine

All documents were updated according to the needs of the country representatives. All missing documents were added.

Standardization

Some documents benefitted from standardization. E.g. layout of training material. This made documents easier to understand.

We also used a standard naming convention to make documents easily searchable.

Sustain

We assigned a process owner which was responsible of the coordination of the new information hub. However every section had owners usually working closely with the documents in their care – they then reported to the hub owner. Quarterly meetings were held to ensure the sustainability of this process.

---

Can fashion brands benefit from leveraging management methodologies developed for manufacturing?

Hannah Gabriel
The result was a clearly structured information hub with easily accessible and relevant information. No more time was wasted searching documents. Additionally less time is needed keeping the hub updated.

**APPENDIX 7 - OBeya, Operations**

Operations is a highly cross functional department tasked in supporting other functions processes. It was difficult to create alignment since there was no overview of projects, progress and responsibilities.

Visual Management had been used in some parts of the company already. However its inconsistency made it difficult to link all initiatives together. After successful application in the IT department, Operations was rolling out their first Obeya room. It was a room accessible for anybody in the building displaying the overall Nike vision, mission and 1 – 3 year strategy on one wall and all initiatives currently working on the other wall – including strategic A3, status and issues and call-outs. The 3rd wall was a free space for brainstorming.

It is currently used for teams to go through their own projects and track their status but also for the management team to observe how the different initiatives link to the strategy.

There is a great atmosphere in the room during those management meetings. Before there was no alignment and initiatives were difficult to link to the overall strategy but now there is visibility and alignment.

**APPENDIX 8 - INTERVIEW JOE DE FEO, CEO JURAN INSTITUTE**

Lean:

- Developed from JIT
- Mean different things to different people, different description
- Improvement of product and service delivery speed and throughput, so customer get’s products faster, cheaper better.
- Rapid improvement events (speed)
- Theory of constraints is applied in lean (came before)

*Can fashion brands benefit from leveraging management methodologies developed for manufacturing?*

Hannah Gabriel
- Understanding market & customer demand and matching your delivery capability to that
- Matching demand (inventory at Toyota)
- Ultimately leads to mass-customization of exactly what customer wants
- 1 car per person methodology
- *Lean Enterprise* is umbrella that includes that collection of tools
- Six Sigma:
  - Evolution from basic QM
  - Lean six sigma (don’t have to fight each other), doing both (rapid improvement, six sigma – small scale, large scale)
  - =large scale
- Looking for simpler and faster method
- Faster, better, cheaper
- Reducing cost so we can do more with that money to bring more revenue
- Has to have effect on top, or bottom line
- It got to be part of the business plan
- Keep improving because needs change