

Traditional Collection Development: Lessons from Fast Fashion

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Abstract--The paper herein seeks to study which lessons can be learned from lean thinking, approached in fast fashion, and taken to companies with traditional launches, so that they become more dynamic in the response to the consumer. For such, a bibliographic research has been carried out about the development of collections in the traditional model and fast fashion analyzing the advantages and disadvantages of each one and the main objectives proposed in the literature of lean thinking. From such premises, a discussion was held about the adaptations to be carried out in the traditional model of the fashion industry aiming at reducing the lead time and minimizing the risk of collections to meet the demands of the consumers, without, however, losing the innovation differential of the collection.

I. INTRODUCTION

The marketplace has modified itself, showing more dynamism in the relation of product consumption.

The negotiation power and the wide access to information triggered in the consumer the expectation of goods and services available in shortened deadlines, forcing the organizations to offer a wider variety of products [1].

For the companies, the need to find a fast response to the market and remain competitive has led to the change in operations and production processes.

Such changes affect the fashion industry, that promotes even even more innovation and variety, trading items of fast visual obsolescence [26], which changes every season.

The variety of a collection have a level of demand that is difficult to foresee accurately [1], since their life cycle is short, volatile, with unpredictable demand in quantities and number of varieties. In addition to that, the period between production and sale of end products is very long, not allowing reaction to demand.

The literature observes that in seasonal markets, such as this one, maintaining a small inventory would influence directly the business results, whatrepresents a challenge considering the time needed to cover the fashion long operational chain.

It is observed in other production chains, for example the automotive industry, that the application of concepts such as “lean thinking” have brought high efficiency either in terms of costs and or in agility to serve the demands, and the challenge proposed in the fashion market is to search those same gains by applying the same concepts.

Supported by the practice of fast response, the development and production of the so called fast fashion could solve the problem. Fast fashion works with smaller

lots, in a pulled production flow, applying the lean thinking through all production processes.

Nevertheless, the substantial criticism to this type of operation is that there is no fashion trends differential, representing only adaptations from the innovation proposals of the regular collection model.

The paper herein seeks to study which lessons from fast fashion lean thinking can be applied to companies with traditional launches, so that they become more dynamic in the response to the consumer.

Despite the extension of supply chain that involves many processes from spinning to the ready garment, the scope of this study is delimited to the stages of collection development and clothing manufacturing.

For such, a bibliographic research has been carried out about the development of collections in the traditional model and fast fashion, analyzing their advantages and disadvantages.

There was an effort to collect the essence proposed in the literature of lean thinking and, from such premises, a discussion was held about the adaptations to be carried out in the traditional model of the fashion industry.

This paper is structured as follows: in section 2, bibliographic review towards the fashion industry, lean thinking and postponement concept – a tool allied to the lean production actions – is presented.

Proposed adaptations are presented in section 3. Finally, conclusions of the authors about the theme and suggestions for future research.

II. THEORETICAL REFERENTIAL

A. Manufacturing of a Fashion Product

The manufacturing of clothing comprises several stages, being able to highlight two main strands: creation/development of prototypes/products and large-scale reproduction.

The first phase absorbs more time and is the period of experimentations until the approval of all characteristics of the product [26], whereas the second strand contemplates the stages which reproduce the approved clothes in the determined amount of times, manufacturing lots for sale.

The involved companies in this sector execute their tasks according to the collections which govern the fashion schedule.

B. The Fashion Collections - Clothing

A fashion collection is a set, or series, of products elaborated in the form of models, which have a relation between themselves [21], taking into account the requirements of the clientele of each company, together with sales control information of previous collections, contact with fashion professionals, international trips, trade fairs and materials specialized in trends [27].

Fashion trends are guidance about what the desire for consumption for the next seasons will be. The process of capturing them is undertaken by the *Comité de Coordinación de L'Industria de La Mode Mundial* [Coordination Commission of the World Fashion Industry], which counts on thinkers, philosophers, sociologists, psychologists, artists, stylists and coolhunters, making up a group of specialized researchers, whose task is to anticipate factors which will influence the consumption behavior of the future society [22].

This process starts about 36 months before the product is for sale at the stores.

The channeling is developed throughout the actors of the chain, such as manufacturers of coloring, spinning, weaving to the stylists of the manufacturing at about 1 year and 8 months in advance [27].

In the decades of 80/90, industries produced from two to four collections a year [23], respecting the climate seasons – spring, summer, fall and winter. Currently, traditional companies have increased the number of launches, placing some smaller collections called “previews” in between the main collections.

On the other hand, fast fashion forecasts biweekly launches and, in some cases, weekly, contemplating only families of models, and not a complete collection.

Such “shortening” in the period in between the collections has decreased the life cycle of the products linked to the trends, forcing selling the garment as fast as possible, since in a short period of time they will no longer be attractive to the consumer.

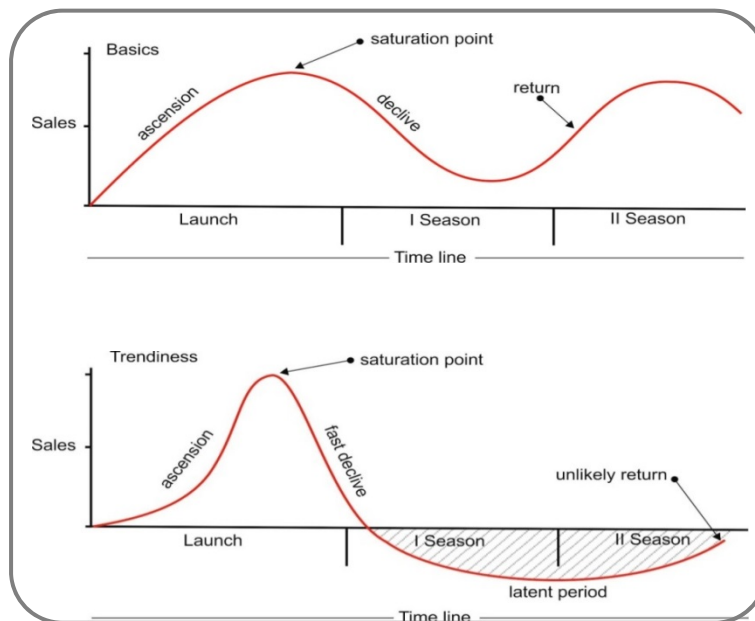
Next, Image 1, there is a comparison of life cycles of fashion products according to its correlation with their trends.

Fashion items can be divided into two main categories: basics (or classics) and fad. As one can realize, basic items are products which do not become completely obsolete, remaining accepted for a long period of time, and do not represent high risk of sale. On the other hand, trendiness are items strongly related to the trend bet of each season, being able to get in and get out of the scene in a single season, representing, thus, high risk to the companies.

A trend can even reappear, years later, but interpreted with changes in raw material, details and proportions [12], which, overall, renders the previous produced pieces of clothing useless.

Such scenario threatens fashion companies, because the time of research and execution is still very long in comparison to the time products will be available at the stores.

Undoubtedly, fashion entrepreneurs and managers face today a major challenge, in which the long cycle of researching, developing, launching, selling, producing and delivering a complete collection every season no longer fits in a business model where innovation is essential and the number of collections are multiplied throughout the year. [32]



Source: Adapted from Jones (2005) and Frings (2012).

Image 1: Duration of a fashion product life cycle

C. Analysis of the Traditional Model

In the traditional model of the clothing industry, manufacturing is driven in a pushed flow, that is, the production is scheduled from demand expectations [39]. Projections are determined by the economy, sales background and collection strength particularly [12].

The launch of collections through this method represents major risk to the company, because it obliges them to develop products only oriented by trends and behaviors that have not yet been expressed [25].

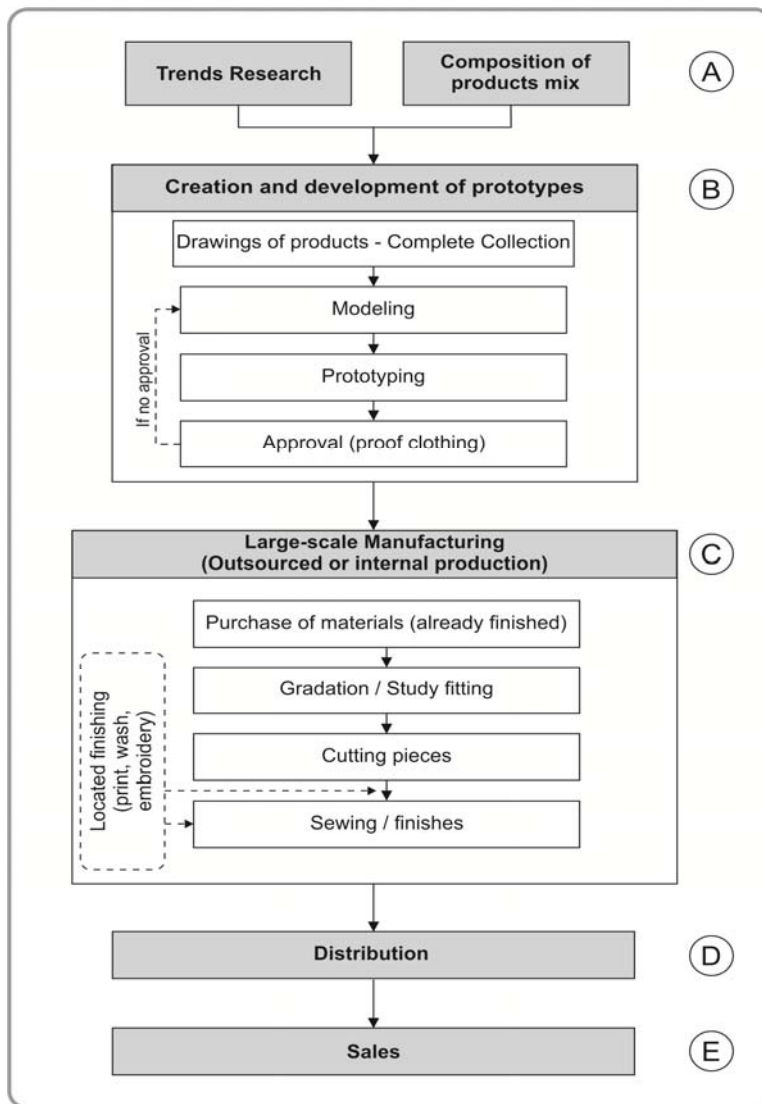
In Image 2, the main stages that structure a fashion collection in the traditional model are classified. The processes start with trend research (A) and move to the prototype creation and development phase (B), where several models are designed – about twice as much as pieces of

clothing that will be officially produced – and submitted to tests for approval.

The test consists of having a person wearing the garment, considered a fitting model, to evaluate the fit of the fabric, the aesthetics and the movements [26]. If there is no approval, it returns to have adjustments done.

The following stage of the process (C) is the reproduction of approved models in large scale. For such moment, the first step is the purchase of inputs [40], since the models have already been approved by the product development team, the purchase is done with raw material and notions already dyed in the color needed or in prints.

The second step, for large-scale reproduction, is the organization of labor needed to manufacture the collection, identifying the need of new hiring or outsourced services.



Source: Developed by the authors

Image 2: Operations structure in the traditional fashion model

Currently, many brands do not have internal sewing workshops, in a vertical process. Most of them make use of outsourcing: domestic (outsourcing), where the supply is obtained from an outsourced company located in the same country [6], or even international outsourcing (offshoring).

The production by subsidiaries in Eastern countries has become the best option of lower costs to fight with the competition. Therefore, it rises the lead time of the product, since transportation and shipment time increases considerably.

Phases D and E correspond to, respectively, the moments of distribution and sales, that although they have direct connection to the company's operations, are not part of the scope of the study herein.

It is observed that, since the fashion collection is thought much in advance, there is no space for major modifications after the launch. The researched authors estimate that only 20% of the ideas for products can be adjusted after the beginning of the season.

D. Analysis of the Fast Fashion Model

The fast fashion model has attracted several companies for its quickness in responding to changes. It is a new strategy that adapts products according to the preferences of the consumer in a faster and more efficient way as possible [4].

Fast fashion is not a market positioning, is not fashion, is not only the fast exchange of products in the store, but a business model [...]. The main idea is involving the consumers' choices in the product conception. And differently from the past, when the idea was that people would choose from a certain number of available products [...]. In the fast fashion model, the creative process is continuous and the consumers' choices are immediately incorporated to the new design and new products. We could call it "adaptable form" or "adaptative design". [5].

In Image 3, it is possible to observe its operation structure. In phases A and B, a differential in the traditional model is noticed: the product development team does not work with all items of the collection the same way.

They are divided into 2 main lines: a basic one, related to the seasons of the year, and the other of "adaptation of models" with high sales rates, in which the customers' opinions are taken into account [4].

The key basic pieces of clothing are planned one year in advance, combining the items that sold the most in the previous collection and the colors of the new season [38].

Three times more models are designed than in fact will be produced [4], which increases the possibility of choices during the collection.

The literature diverges in the amount of models that are produced after the first launch: some authors assert that about 15 to 25% of the garment are produced in anticipation, 50 to 60% are produced in the beginning of the collection, whereas the remainder (15 to 35%) is manufactured during the season. On the other hand, other authors defend that 50% of the models are produced in the course of the collection [38].

Regardless the exact value, producing on the course of the collection is only possible because the product development team follows the sales reports on a daily basis [38], in addition to having direct contact with the commercial team, maintaining the creation focus on the type of product with higher potential of sales and not taking into account those with little output from the stores [29].

The execution task of prototypes for approval is optimized by the use of softwares; the designers refine colors and textures in an aided design computer system [10] – CAD – in which clothing fitting is also carried out in a virtual doll, created with the measures of the body the company wants. That avoids the physical manufacturing of several samples, which shortens the development time and avoids waste of raw material and notions.

The purchase of inputs is linked to the product development, still in phase B, purchasing them with no dye, to enable more adaptation flexibility of colors and prints during the season [38]; [28]. Postponement is used to benefit products closer to manufacturing, or even after that, close to the sale.

Fast fashion companies develop long-term partnerships with suppliers of materials instead of constantly changing supply sources [31].

By taking the products to phase C, in which they will be manufactured, the division into two lines is kept: the more basic models are sent to international subsidiaries (offshoring), whereas the products that need quickness, trendiness, are manufactured internally or in closer outsourced companies (outsourcing), in small lots [4].

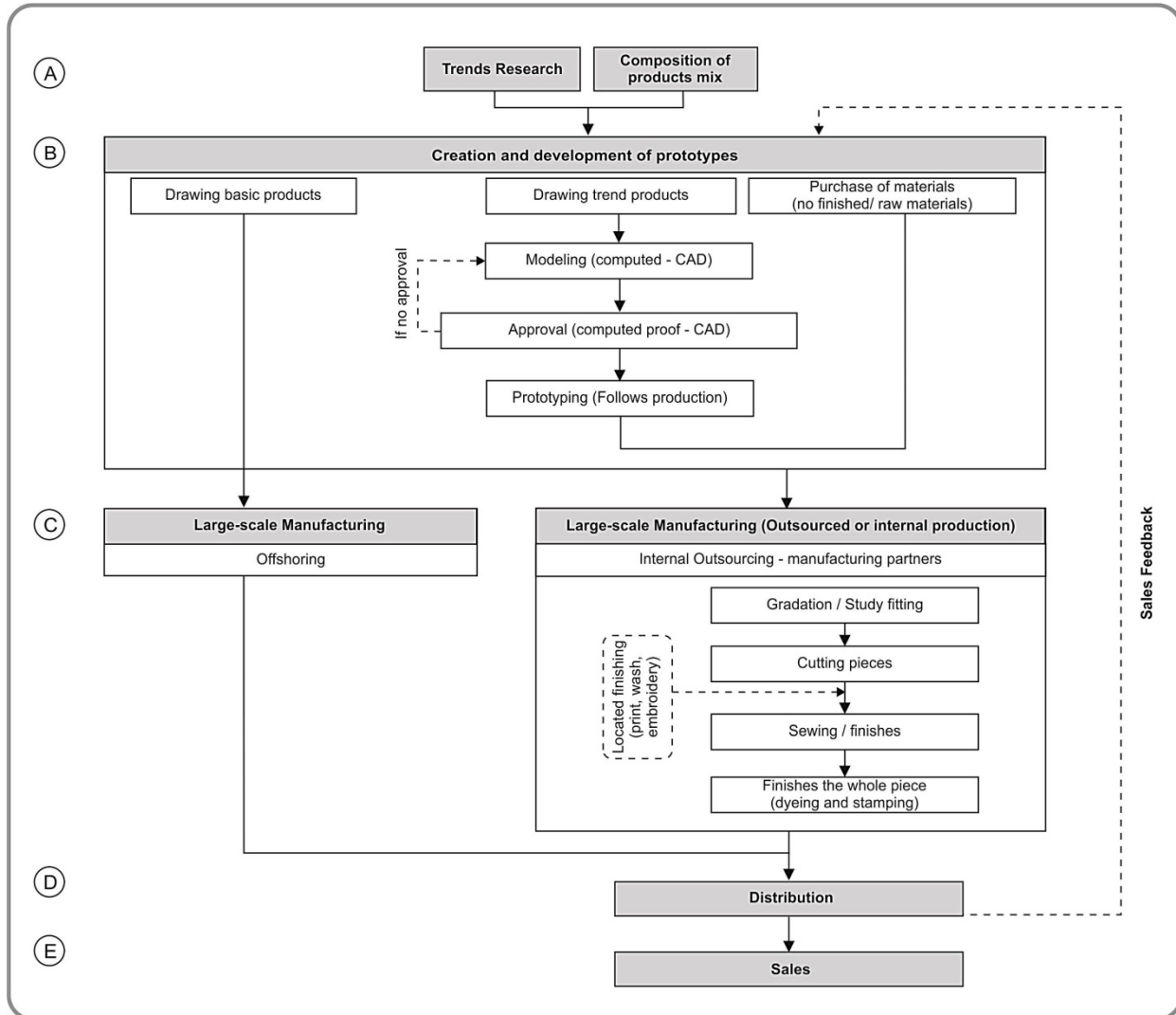
The obligations of urgent supply, due to growing uncertainties of the market forced the companies [...] to divide their supplier networks into two standards: a) low-cost, distant suppliers for predictable orders; and b) close suppliers for urgent and random restocking. [29].

Managers who perform in such companies reinforce that not always a short period of delivery is the best strategy for all products; suppliers are chosen by means of competitive criteria that allow achieving the balance among price, time and quality for each model [38].

However, global sourcing does not always suffice to meet retailers' demands, particularly if they need to replenish a well selling stock mid-season, and so local suppliers are used in tandem with those offshore. Managing the logistics and supply chain for textiles and apparel suppliers and retailers has to be synchronized and is driven by the exigencies of the dynamic patterns of demand, especially for fashion items. [2].

The internal production, or in local factions, can incur in high labor costs, but is offset by the postponement, since the previous purchase of raw inputs make them cheaper.

Finally, the researched bibliography shows the relation among the process of development, production and sales as the key success factor of fast fashion, working as a link between the company and the customer.



Source: Developed by the authors

Image 3: Operations structure in the fast fashion model

E. Advantages and disadvantages of each model

In Table 1, the main characteristics of each studied model have been collected and compared, and shows if they represent advantages (+) or disadvantages (-) to the fast response to the consumer market.

It is noticed that the main advantage of the traditional model is innovating in fashion trends. However it is outdated as per the flexibility of modifying itself according to the

consumer's preferences, in addition to working in a pushed flow which represents high business risks, investing in a collection early with no actual sales numbers.

On the other hand, fast fashion quickly adapts to changes and offers agility in the turnover of products at each collection. Its disadvantage is in not proposing trend differentials in its products, depending on the traditional collections in order to reproduce adaptations.

2014 Proceedings of PICMET '14: Infrastructure and Service Integration.

TABLE 1: COMPARISON OF TRADITIONAL AND FAST FASHION MODELS

	Traditional Model		Fast fashion	
Product Development				
Differentiated proposals	New materials, textures and finishing at each collection	+	Does not propose innovations, but adaptations of what is launched by the traditional model	-
Collections	Complete collections that follow the climate seasons	+	Does not work with collections, only small families of products	-
Relation to the sales	Analysis of previous collections	-	Continuous reports during the collection	+
Development of models	The whole collection at once	-	Division of the collection into two lines: basics and trendiness, with different ways to develop each one	+
Periods of launches	Every 6 or 3 months	-	Biweekly or, even, weekly	+
Change of models during the collection	About 20%	-	From 30 to 50%	+
Purchase of materials	Does not apply at this moment		Purchase of raw inputs	+
Product life cycle	About 2 months before being liquidated	-	A few weeks before going on sale	-
Approval of models	Manufactured prototypes	-	Use of softwares, virtual prototypes	+
Large-scale reproduction				
Purchase of materials	Already dyed and with prints approved by the product development	-	Does not apply at this moment	
Production flow	Pushed	-	Pushed – basic products, and pulled – trendiness products	+
Outsourcing	Seeks low prices	-	Relation between price vs. necessary response time	+
Lots of manufacturing	Large lots to have economy of scale	-	Small lots to have variety	+
Benefits after manufacturing	Does not apply at this moment		Dyes and printworks according to the consumer's preferences	+

+ positive / advantages
 - Negative / disadvantages
 Source: Developed by the authors

F. Lean Production

Lean thinking shows a way to specify value, aligning the best sequence of actions to create it, performing the stages with no interruption and in an increasingly efficient way, every time it is demanded by a customer [42].

Also known as the Toyota Production System, lean thinking was implemented at the end of the 60s, in Toyota's supply chain, and took decades enhancing itself up to the moment it was spread in the organizations at the end of the 80s. Nevertheless, up to today, entrepreneurs face the same problems of economic crisis and needs to reduce costs in order to compete, which makes the lean system very relevant yet [8].

“During the 1980s and early 1990s the strategic trend in Japanese manufacturing was to expand market share” [19]. The way of thinking of those Japanese companies was that the value must come from the customer and not from the company. Thus, one must offer products that the customers

want, in a way that they want, in the quantity and quality desired and at a reasonable price [37].

O1: The lean company aims at satisfying the consumer's needs in the shortest time as possible.

Time is a precious operational resource [...]. By connecting its production to the actual demand of the customer, reducing the manufacturing delivery time to the minimal time required to convert raw material into finished products, a manufacturer can achieve a significant competitive advantage, with the best quality, the lowest cost and the shortest delivery deadline. [36].

In order to achieve the objective mentioned, lean production resorts to an integrated set of activities and methods projected to obtain a production using the minimum raw material inventory, inventory in processes and finished products [17].

The mindset of making more with less – less equipment, less human effort, less time, etc. [14] – integrates and

optimizes the production stages, produces with quality, develops the manufacturing flexibility and speeds up the service cycle of the customers' orders [20].

Thus, lean thinking is based on some principles which directly affect the production department, but which also integrates many roles of the company [34].

In addition to the reduction of inventories, other tools contribute to decreasing the lead time of the products; such as reduction of the size of the lots, reduction of set up [14] and removal of all actions that do not add value to the product [34] – mistakes that demand rectification, production of items that no one wants, buildup of merchandises, etc. [43].

O2: Reducing the size of the lots, reducing the set up and actions that do not add value to the product.

It is possible to analyze the manufacturing and identify the stages that can be enhanced or removed by mapping the value chain.

The objective of an organization is channelizing the value chain to a family of products. That means identifying the families and rethinking their roles to realign the activities of marketing, sales, product development, scheduling, production and purchase. Each family will have specialized teams to produce them [43].

O3: Mapping the value chain, identifying the families of products and realigning the activities to specialized teams.

According to the authors, yet, such mapping makes the stages, in fact, create value, interact in a more harmonized flow with the consumers' needs transforming a pushed system into a pulled system [28].

O4: Transforming a pushed system into a pulled system.

The pushed manufacturing system is the traditional way factories work, in which the production order is issued according to the demand expectation or forecast. The production lots are transferred from one sector to the other with or without the need of receipt, being able to give rise to the increase of the inventory level [4]. For such reason, the pushed production is also called, in some literatures, "production for inventory".

The production for inventory restrains the product to a few variables because it imposes the focus on efficiency [30], its main purpose is to keep men and machines busy at all times [37] through the economy of scale.

One of the main gains of the lean production is to operate in pulled flows, in which the activities of material shift just take place from a customer's formal order [6], which removes the risk of "not selling".

Throughout such process, there are paths that require more attention, the so-called critical managerial tasks. They are the "problem solution" that contemplates from the product conception to its launch, going through the detailed project and engineering; the "information management" starts at the order and finishes at the delivery, following a detailed schedule, and the "physical transformation management",

which goes through the raw material space to the finished product at the customer's hands.

O5: Attention to the critical managerial processes: from the product conception to its launch, manage the engineering project, order information and transformation of raw material into finished product.

It is noticed that the expected objectives in lean thinking are already present in fast fashion production logic, which confirms the intention of the paper herein to take those lessons learned to the traditional way of manufacturing clothing, aiming at more capacity of response and decreasing uncertainties.

G. Postponement

A complementary tool of cost reduction maintaining the value the customer wants, suggests a standardization of the components in initial stages of the production and late differentiation, where the demand is known [11]. Such action, called postponement, favors the economy of scale in the purchase of inputs reducing the complexity of operations and keeping the proposal of value [30] and the flexibility.

Although such concept is not directly linked to the lean production literature, the study has demonstrated that both have similar ideas aiming at the same purpose.

The objective of delaying the distinction of manufacturing is making the production more efficient, but without compromising the variety of the final product [24].

O6: Postponing the product differentiation for the moment the demand is known.

That increases the speed of response and the flexibility for changes, since it allows to vary a generic product driven by the immediate demand instead of being pushed based on uncertain forecasts and in the range of the individual product [39].

Operationally, that means to divide the production process into, at least, two stages: primary and secondary [41]. The primary stage would be responsible for the production of standardized components, whereas the secondary stage would be responsible for the product customization to better meet the customers' demands [24].

The standard components, or modules, are used in multiple products that will be treated, at a later time, in several variables, positively influencing the aspects such as costs, quality, flexibility and delivery services to the customer [35].

Postponement is also part of the fast fashion development and production, ensuring that a large amount of the items are manufactured during the collection and can better meet the demand. For such reason, it is another action that can be taken into the traditional model aiming at making the production more dynamic.

III. LEAN AND POSTPONEMENT PRINCIPLES APPLIED TO THE TRADITIONAL MODEL OF FASHION DEVELOPMENT AND PRODUCTION

After comparing the traditional model with fast fashion, the disadvantages that make them slow and inflexible have become visible.

It was possible to observe, as well, that the operations that make fast fashion agile and flexible are based on lean production and postponement.

From the 6 objectives raised by these concepts, adaptations to the traditional way are proposed as follows, gaining quickness in response.

O1: The lean company aims at satisfying the consumer's needs in the shortest time as possible.

The manufacturing of traditional clothing is distant from the consumer, since it just analyzes the sales of previous collections. On the other hand, in fast fashion, the focus is on the preferences presented by the customer.

That mindset could be added to the traditional model, making the company closer to its customers by means of daily follow-up of sales, retraced to the R&D team through reports, allowing that professionals know the evolution of the collection in real time.

The action is enabled by the use of control softwares available and already used by the commercial department for inventory controls.

The purpose is to foster responses to the consumer during the collection and not only at the next season.

O2: Reducing the size of the lots, reducing the set up and actions that do not add value to the product.

The reduction of manufactured lots decreases wastes and risks of losses with the “not selling”. By decreasing the number of items in each lot, it would be possible to increase

the variety, making the new pieces more dynamic at the point of sale.

Increasing the variety of items could maximize the set up of machinery which would not be beneficial to the company. For such issue, an adaptation in *O6* is presented, working on the modularization.

Maintaining the collection in the store, for months, with no changes, ends up decreasing the value of the product over time. For such reason, it is proposed that the already established launches by the traditional collection are interchanged with small families of products.

The purpose would not be to enable new products weekly, such as in fast fashion, but not letting the period in between main collections so static.

O3: Mapping the value chain, identifying the families of products and realigning the activities to specialized teams.

The highest value raised in the traditional fashion industry is in the innovation of its products, proposing material and shape trends.

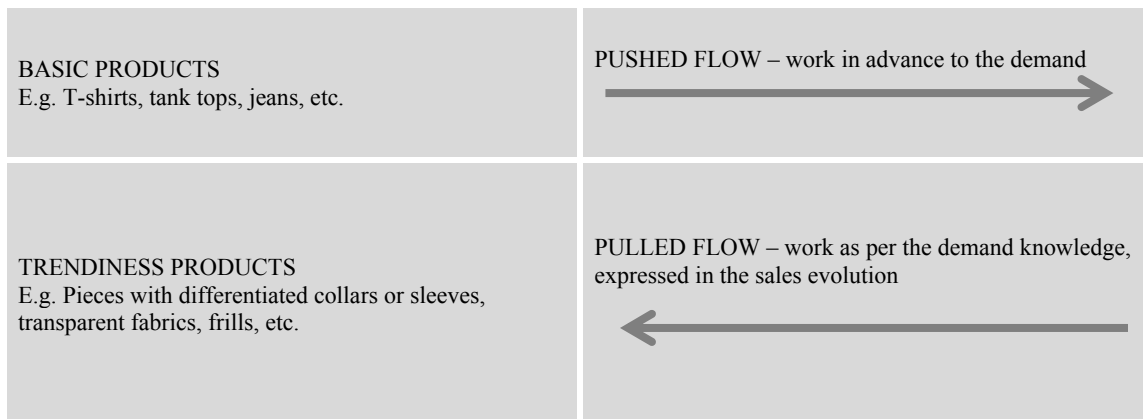
This is the main competitive advantage before fast fashion and must be recognized and appreciated, keeping the development and the production of innovative items as much closer to the company as possible and under their control.

For such reason, the division of the development into two product lines – basics and trendiness – would enable the actions and coordination of the stages which add more value to the aesthetics of the collection, keeping the prices low in classic products by means of distant outsourcing.

O4: Transforming a pushed system into a pulled system.

In fashion, it would not be possible to transform all the production into a pulled flow, taking into account that the consumer, to perform their order, needs to see the product available – and even try it on.

The adaptation proposal would be in a hybrid flow also enabled by the division of the product line:



O5: Attention to the critical managerial processes: from the product conception to its launch, manage the engineering project, order information and transformation of raw material into finished product.

This objective integrates different stages from the idea to the finished product. Since it has a pushed flow, the departments are not interconnected to the traditional model. The development of the product creates, the manufacturing produces and the commercial receives it to sell it.

Managing the collection project, from sales information and with product divisions in different families – that will be manufactured differently – the departments integrate themselves and the collection can be seen as a whole and not only at the individual interests of each sector.

O6: Postponing the product differentiation for the moment the demand is known.

The purchase of raw inputs brings to fast fashion the possibility to postpone the differentiation of its products according to the commercial need.

Such action, applied to traditional companies, would make the inventory in a cheaper process and would increase the assertiveness of the collection.

Another possibility of adaptation would be a modular thinking in product development, which would also contribute to decreasing the set up of machineries (O2), without compromising the variety. For instance, garments with similar shapes would follow the production together, gaining economy of scale, and would receive an application of differentiated sleeves, collars, dyes, embroideries and prints closer to the sale.

It is known that in the traditional model such thing would not be possible in the first product entries, since the trends have to be proposed in the beginning of the collection already with bets of shapes, colors and prints. However, if such practice is used throughout the collection, it would be able to decrease part of the investment “blindly”, minimizing unnecessary costs and increasing profitability.

IV. CONCLUSIONS

Confirming the literature of lean thinking, although adaptations are directly related to R&D and manufacturing, its impact affects the company as a whole, making it more agile altogether.

By presenting adaptations to the processes, the authors expect that the traditional way of launching collections become more flexible in responding to the demand, without losing the innovative differential of fashion products.

From the study herein, it is suggested that other researchers would be able to analyze the process under the reverse optics: how to take to fast fashion the innovative concept of the traditional model, since the latter has as a differential aspect its closeness to the known demand.

The scope of the paper was delimited to manufacturing, however since this is a wide chain, another suggestion of

research would be to enlarge the study of “traditional model vs. response time” involving agents such as spinning and weaving.

REFERENCES

- [1] BALLOU, R.H. **Gerenciamento da cadeia de suprimentos/logística empresarial**. Trad. Raul Rubenich, 5. ed. Porto Alegre: Bookman, 2006.
- [2] BRUCE, M.; DALY, L.; TOWERS, N. Lean or agile: A solution for supply chain management in the textiles and clothing industry? **International Journal of Operations & Production Management**, v. 24, n. 2, p. 151-170, 2004.
- [3] CARO, F. GALLIEN, J. Inventory Management of a Fast fashion Retail Network. **Operations Research**, v. 58, n. 2, p. 257-273, mar/abr. 2010.
- [4] CHOI, C. Y. J. et.al. Logística do fast fashion no contexto brasileiro. **Revista de Logística da FATEC Carapicuíba**, Carapicuíba, ano 1, nº 2, p. 63-77, nov/2010.
- [5] CIETTA, E. Fast Fashion. **O Confeccionista**, São Paulo: Imprensa Editora, ano II, n. 11, p. 20-24, mar/abr. 2011. Entrevista.
- [6] CORRÊA, H. L. **Gestão de redes de suprimentos: Integrando cadeias de suprimento no mundo globalizado**. São Paulo: Atlas, 2010.
- [7] COUGHLAN, A. T. et al. **Canais de Marketing**. 7. ed. Tradução: Sonia Midori Yamamoto, Jorge Ritter e Opportunity Translation. São Paulo: Pearson Education do Brasil, 2012.
- [8] DENNIS, P. **Produção Lean simplificada**. 2.ed. Porto Alegre: Bookman, 2008.
- [9] FACCIONI, J. L. **The black book of fashion: como ganhar dinheiro com moda**. São Leopoldo, RS: Editora UseFashion, 2011.
- [10] FERDOWS, K. LEWIS, M.A. MACHUCA, J.A.D. Zara's secret for fast fashion. **Harvard Business School Working Knowledge - HBSWK**, fev. 2005. Disponível em: <http://hbswk.hbs.edu/tools/print_item.jhtml?id=4652&t=technology>. Acesso em: 29 out. 2013.
- [11] FERREIRA, K.A. ALCÂNTARA, R. L. C. Uma discussão sobre as diferentes classificações da estratégia de postponement. **Revista de Ciência & Tecnologia**, v. 17, n. 33, p. 53-63, jan./jun. 2012.
- [12] FRINGS, G. S. **Moda: do conceito ao consumidor**. 9.ed. Porto Alegre: Bookman, 2012.
- [13] GLASER, D.A. PEINADO, J. GRAEML, A.R. Fatores influenciadores do sucesso da adoção da produção enxuta: uma análise da indústria de três países de economia emergente. **R. Adm.**, São Paulo, v. 46, n. 4, p. 423-436, out./nov./dez. 2011.
- [14] GODINHO FILHO, M. FERNANDES, F.C.F. Manufatura enxuta: uma revisão que classifica e analisa os trabalhos apontando perspectivas de pesquisas futuras. **Gestão & Produção**, v. 11, n. 1, p. 1-19, jan./abr. 2004.
- [15] IEMI – Instituto de Estudos e Marketing Industrial. **Brasil Têxtil - Relatório setorial da indústria têxtil brasileira**. São Paulo: IEMI, 2011.
- [16] _____. **Brasil Têxtil - Relatório setorial da indústria têxtil brasileira**. São Paulo: IEMI, 2012.
- [17] JACOBS, F. R. CHASE, R. B. **Administração da produção e de operações: o essencial**. Tradução Teresa Cristina Felix de Souza. Porto Alegre: Bookman, 2009.
- [18] JONES, S.J. **Fashion Design: manual do estilista**. São Paulo: Cosac Naify, 2005.
- [19] KATAYAMA H.; BENNETT, D. Agility, adaptability and leanness: a comparison of concepts and a study of practice. **International Journal of Production Economics**, 60-61, p. 43-51, 1999.
- [20] KNUF, J. Benchmarking the lean enterprise: Organizational learning at work. **Journal of Management in Engineering**, v. 16, n. 4, p. 58-71, jul./aug. 2000.
- [21] LIGER, I. **Moda em 360 graus: design, matéria prima e produção para o mercado global**. São Paulo: Editora Senac São Paulo, 2012.

- [22] LIMA, T. **Marketing: O Glamour dos negócios da moda**. São Paulo: Imagem – Moda e Marketing, 2008.
- [23] LODI, R. ECHEVESTE, M. E. S. Melhorias no Processo de Desenvolvimento de Produto de uma Indústria do Vestuário do Segmento *Fast fashion*. **8º Congresso Brasileiro de Gestão de Desenvolvimento de Produto – CBGDP 2011**, Porto Alegre, RS, Brasil, 12 p., 2011.
- [24] MACHADO, A.G.C. MORAES, W.F.A. Estratégias de customização em massa implementadas por empresas brasileiras. **Produção**, v. 18, n. 1, p. 170-183, jan./abr. 2008.
- [25] MANARESI, A. Orientação para o mercado nas empresas de moda. In: SORCINELLI, P. (Org.) **Estudar a moda: corpos, vestuários, estratégias**. São Paulo: Editora Senac São Paulo, 2008. p. 127-142.
- [26] MENDES, F.D.; SACOMANO, J.B.; FUSCO, J.P.A. **Rede de empresas: a cadeia têxtil e as estratégias de manufatura na indústria brasileira do vestuário de moda**. São Paulo: Arte & Ciência, 2010.
- [27] MENDONÇA, A. **Organização da Produção em Confecção Têxtil**. 2ª ed. Porto, Portugal: Publindústria, Edições Técnicas, 2007.
- [28] MINADEO, R. Inovações em serviços: adoção do Just in Time pela rede varejista Zara. **GEPROS. Gestão da Produção, Operações e Sistemas**, ano 7, n° 1, p. 35-48, jan-mar/2012.
- [29] MORELLI, G. SANTIAGO, C. E. R. de. Inovação no varejo: Fast Fashion e Pop upstores. In: **1º Congresso de Inovação, Tecnologia e Sustentabilidade – Unifebe**. Brusque/ SC, 13 p., ago/2010.
- [30] NEUMANN, D. Coluna Gestão em Foco. Múltiplas cadeias: habilitando o foco no foco do consumidor. **Mundo Logística**, Curitiba, ano VII, n. 37, p. 82-83, nov.-dez. 2013.
- [31] PETRO, G. The Future of Fashion Retailing. **Forbes**, Lifestyle, out. 2012. Disponível em: <<http://www.forbes.com/sites/gregpetro/2012/10/23/the-future-of-fashion-retailing-part-1-uniqlo/>>. Acesso em: 29 out. 2013.
- [32] PRADO, M. V. Mercado de moda: dinâmico, estratificado, heterogêneo e desafiador. **Costura Perfeita**, São Paulo: Editora Cavemac, ano XIII, n. 66, p. 18-19, mar/abr. 2012.
- [33] **RECEITA FEDERAL**. Disponível em: <<http://www.receita.fazenda.gov.br/pessoajuridica/dipj/2004/pergre/sp2004/pr110a202.htm>>. Acesso em 07/dez. 2013, às 14h04min.
- [34] SÁNCHEZ, A.M. PÉREZ, M. P. Lean indicators and manufacturing strategies. **International Journal of Operations & Production Management**, v. 21, n. 11, p. 1433-1451, 2001.
- [35] SCHNEIDER, C. BUNSE, K. GNEITING, P. Evaluating modularity in production: a case from the car industry. **EurOMA – European Operations Management Association**, 2009, 10p.
- [36] SHARMA, A.; MOODY, P.E. **A máquina perfeita: como vencer na nova economia produzindo com menos recursos**. São Paulo: Prentice Hall, 2003.
- [37] SILVA, C.F. et al. Lean Thinking nas EPP's (Empresas de Pequeno Porte) do segmento vestuário. In: XI SEMEAD – **Seminário em Administração**. São Paulo, 16 p., ago./2008.
- [38] SILVA, O. R. da. VENANZI, Délvio. PAIXÃO, Marisa Regina. Estratégias de cadeias de suprimentos para o setor de vestuário-moda: uma análise das empresas Zara e H&M. SIMPOI. **XIV Simpósio de Administração da Produção, Logística e Operações Internacionais**, 16 p., ago/2011.
- [39] TAYLOR, D.A. **Logística na cadeia de suprimentos: uma perspectiva gerencial**. São Paulo: Pearson Addison-Wesley, 2005.
- [40] TREPTOW, D. **Inventando moda: planejamento de coleção**. 5. ed. São Paulo: Edição da Autora, 2013, 208 p.
- [41] VAN HOEK, V.; COMANDEUR, H. R.; VOS, B. Reconfiguring logistics systems through postponement strategies. **Journal of Business logistics**, v. 19, n. 1, p. 33-54, 1998.
- [42] WOMACK, J.P.; JONES, D.T. **A mentalidade enxuta nas empresas: Elimine o desperdício e crie riqueza**. Trad. Ana Beatriz Rodrigues, Priscila Martins Celeste. Rio de Janeiro: Campus, 1998.
- [43] _____, **A mentalidade enxuta nas empresas: Elimine o desperdício e crie riqueza**. Trad. Ana Beatriz Rodrigues, Priscila Martins Celeste. Rio de Janeiro: Editora Elsevier, 2004.