



QC-STORY AS COST MANAGEMENT SUPPORT TOOL APPLICATION AND EVALUATION IN A CLOTHING INDUSTRY

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ABSTRACT

A good cost management is a business need, where the process failures are identified and corrected, seeking continuous improvement, since competitiveness and lower prices are the market demanding. Such good management reflects on process economies, whether economic or energy efforts, and results in benefits for the company and final consumer, who receives a less costly product. In order to achieve this process of continuous improvement in costing process, the QC-story method was used to identify and analyze problems in cost calculation. For analysis of the problems some Quality Tools were used, making possible to identify the causes of the problems with cost management. At the end of the analysis, an action plan was proposed using the 5W2H tool to achieve the desired improvements. The application of the QC-story method was justified by the fact that divergences in cost management are common in all collections, directly impacting the company's income generation.

Keywords: cost management; cost accounting; QC-story; quality tools



1. INTRODUCTION

Companies have put special emphasis on the management of their costs, since knowing how much the product costs, is no longer a differential in the consumer market. With the increase of competitiveness, the consumers ended up becoming market experts, always opting for the most advantageous option (Baharudin & Jusoh, 2015).

Baharudin and Jushoh (2015) also emphasize that the consumer market has become extremely demanding, looking for products and services of high quality with competitive prices. Faced with a political and economic crisis, such as the one that Brazil has been facing since 2014, the instability of the economy and the increase in unemployment, causes demand to occur, and at that time good management is essential to make decisions about how to get around into hard times.

Therefore, good practice in cost management is essential, and according to Silva Júnior (2000) companies that do not meet this type of requirement will not be able to survive, since the quality associated with low cost has become fundamental for the maintenance of the consumer market. It is necessary to carry out a rigorous analysis in the company, since it is evident that the costs are not only linked to the production.

Dertouzos, Lester and Solow (1989) emphasize that a customer-focused strategy, tend to gain benefits from a variety of management techniques, which should be treated as a package of initiatives directed towards a particular organizational vision. Cooper and Slagmulder (2004) emphasize the importance of how companies implement interorganizational cost management during product design and the characteristics of the relational contexts associated with them.

Following the trend of concern with cost management, a problem that affects apparel companies is the price variation of their estimated costs in the development of collections and the real costs in the product mix (mix is the variety of products that are offered to customers). At the beginning of the collection's development, a mix is planned, ranging from affordable prices, called "door entry", to higher prices with specific and differentiated products. After approval of the mix, a collection is developed, according to the planned price ranges, and the products have an estimated cost of production. The problem is that there are divergences between the estimated cost in planning and the real cost calculated in the production period of the collection. This difference ends up in some cases compromising the initial planning of sale price setting of the collection.

The setting of the selling price of manufactured products is a very complex task, and several factors must be considered. Companies can focus on a variety of combinations of



product differentiation and low pricing strategies, and also invest in the use of management techniques to improve processes, quality systems and innovations in manufacturing systems (Shank, 1989; Belohlav, 1993). Chenhall and Langfield-Smith (1998) argue that accounting management practices focus on the development of more accurate product costs, provide a broader focus to assess the effectiveness of manufacturing processes, and relate activities and processes to strategic results.

Kuźdowicz and Kuźdowicz (2012) points out that the cost of product manufacturing is a variable that plays an important role, mainly because the company cannot sell below its cost. Therefore, it can be observed that the problem mentioned in the manufacturing companies directly affects the setting of their selling price and consequently their result.

The objective of this paper is to analyze the process of selling price formation, aiming to identify the causes resulting in divergences of estimated cost and real cost, in order to compare the estimated cost with the implementation of the target cost, making clear in which stage of the process major failures occur. In order to analyze the problem, the QC-story method was used, which is a systemic tool to approach situations that may require decision making due to an unsatisfactory situation, finding guidelines for correcting causes and proposing alternatives for action.

The article is divided into 6 sections, in addition to this introductory section, section 2 deals with the theoretical framework, section 3 describes the research method, section 4 shows the case study, section 5 presents results and discussions and finally in section 6 the conclusion.

2. THEORETICAL BACKGROUND

2.1. Cost Accounting

Cost accounting has two important functions: aid to control and support to decision making (Kuźdowicz & Kuźdowicz, 2012). With regard to the control, Horngren, Foster and Datar (2000) addresses that its mission is to provide data for the establishment of standards, budgets and other forms of forecasting. In relation to support for decision-making cost accounting is of great importance, and consists in feeding information about relevant values that concern the short- and long-term consequences of measures to be taken (Laitinen, 2014).

It is noted that cost accounting is an orderly process that uses accounting principles to record the costs of institutions but compiles them in different ways to make them more useful to management. In this way, it establishes standards and budgets, makes forecasts and comparisons (Laitinen, 2014).



The appropriation of production costs is carried out by companies through costing methods, where appropriate would be allocate their costs incurred to what is being produced. Each costing method uses a form of appropriation (Zanievicz *et al.*, 2013). The absorption costing, method adopted by the analyzed company, consists in appropriating all the costs of production to the manufactured goods (Horngren, Foster & Datar, 2000). It is a process of costing, whose objective is to allocate all its elements in each phase of production, so a cost is absorbed when it is assigned to a product or unit (Kuźdowicz & Kuźdowicz, 2012).

2.2. Standard Cost, Estimated Cost, Real Cost and Target Cost

An effective way to plan and control costs is to set goals to be achieved by the company. Thinking in this way one can implant the concept of standard and estimated cost (Martins, 2009).

The standard cost or ideal cost is the production of a good or service with its full productive capacity, with the best raw materials, the best manpower or 100% efficiency in the planned processes. According to Kuźdowicz and Kuźdowicz (2012) the ideal standard cost is a cost determined in the most scientific way possible by the company's production engineering, under the ideal conditions. It is known that companies have great difficulty in achieving this level of production, so the ideal standard cost is used more for comparison purposes, a long-term goal and would only be used for comparisons made at most once a year to have an idea of how much has evolved in relation to previous years (Martins, 2009).

The estimated cost is based on past averages for a future projection, different from the standard that requires many studies and planning. For Martins (2009) the standard cost integrates theoretical and practical aspects, while the estimated cost would only take into account the practical ones. The actual cost of production is calculated using traditional cost accounting, using absorption costing, for example, which shows all the costs that the company obtained in the period (Kuźdowicz & Kuźdowicz, 2012).

When obtaining the real cost values, it is possible to make comparisons with the standard cost or the estimated cost, where you get the cost variations. These variations can be of materials, quantities, prices, among others. The information obtained through the comparisons will help the decision making and planning for the next production periods (Martins, 2009).

The target cost is a cost management strategy that establishes a cost limit for the products, thus evidencing how much it will cost in the market, according to the desired profit margin (Sakurai, 1989). Kato, Böer and Chee (1995) consider target costing within the



systemic view, defining it as an integration mechanism linking the various functional units of a company within a single system. In addition, Hiromoto (1989) points out that this cost strategy can effectively remove internal communication barriers among employees by providing tools that empower employees to think and act in the right way.

For Martins (2009), the target cost is used to measure the maximum cost supported to achieve the desired return of a product, i.e., it is an inverse way of calculating its cost, starting with its market value (Reckziegel, Souza & Diehl, 2007). Horngren, Sundem and Straton (1996) corroborate this definition by highlighting it as a strategy that the company adopts with the objective of enabling an adequate profit margin, considering the price accepted by the market and an adequate cost.

Target costing begins with the question: “What should a product’s cost be?” This question can be answered by Equation 1 (Feil, Yook & Kim, 2004):

$$\text{Sales Price} - \text{Target Profit} = \text{Target Cost} \quad (\text{Eq. 1})$$

Sakurai (1995) points out that the basic procedure for the determination of the target cost is that, starting from a projected sales price and deducting the profit objectified by the company, there is the corresponding cost, or allowed cost, with this one being the new goal. This determination of the sale price is discussed as follows.

2.3. Setting the Selling Price

Setting the selling price of products is not an easy task for businesses, requires a study of various economic scenarios and internal planning. In the process of deciding the price to be fixed, not only cost data should be taken into account, but also a range of market information. Thus, price-setting is an analysis of cost data, market elasticity, and company planning. The merging of all this information helps in deciding what price is most advantageous for the product to reach the planned targets (Martins, 2009).

In some cases, the market is the great price indicator. Consumers started to have more strength to influence the price. In this new environment, the company no longer has the power to impose the prices of its products. It is the market, therefore, that ends up dictating the price it is willing to pay. Companies must verify whether it is feasible to offer a product at a price that allows the profit generated to adequately remunerate the investments made in the companies by their owners. In this mechanism, cost is no longer the basis for price formation, but represents the value that the company can spend to manufacture the product. To reach this cost, the company serves two stakeholders: customers, who determine the price; the business owners, who determine the profit (Megliorini, 2012).



There are two methods which, although present variations in its applicability, use cost as the basis for the formation of the sale price, the first Mark-up or Price-rand. The second one is called the Target Return Rate or Target Price Setting (Bernardi, 2010) being the Mark-up one of the most popular methodologies, according to Sardinha (1995).

The method used by the company under study to define the price of its products is the formation of a cost-based selling price, this method is also called prices from the inside out, and is determined by the absorption cost criterion. On the cost obtained by this process, a margin called mark-up is added, which should be estimated to cover costs not included in the cost, taxes, commissions and the desired profit by the managers (Megliorini, 2012).

This method of calculating prices based on costs is widely used by companies, but may present deficiencies if the information obtained is not reliable with the reality faced. Martins (2009) sees as deficiencies not to consider the conditions of the market and to set the percentage to cover expenses in an arbitrary way, thus the importance of mark-up in the process, as well as the other factors already mentioned, is perceived.

Megliorini (2012) highlights the Mark-up as an applied index on the cost of a good or service for the formation of the sale price, being this index such that it covers taxes and fees applied on sales, selling and administrative expenses, and profit. Therefore, the mark-up divider is the percentage that is obtained by taking an integer (100%) and subtracting the percentage of taxes and sales taxes and the gross profit margin. Finally, the spot price of the mark-up splitter can be obtained by Equation 2:

$$\text{Selling Price} = \text{Cost} \div \text{markup} \quad (\text{Eq. 2})$$

In this way, it is observed that the sale price formation works as a system, where each subsystem works with the purpose of reaching a target objective, and thus reach as close to the budget as possible (Martins, 2009).

3. RESEARCH METHOD

The type of research developed is a case study, which presents a restricted form of acting in the face of the problem. The case study is circumscribed to one or a few units, having depth and detail character being or not being performed in the field (Yin, 2009).

The Analysis and Problem-Solving Method QC-Story has a sequence of logical procedures that allows analyzing the characteristics and causes of the problem, and then planning goals and corrections (Pathak & Aher, 2013). The QC-Story Method was adopted in this study with the objective of identifying the causes of divergence between real cost and estimated cost and propose solutions to minimize these divergences.



Figure 1 highlights the stages of QC-Story and their relationship to the PDCA cycle (Plan, Do, Check, Action).

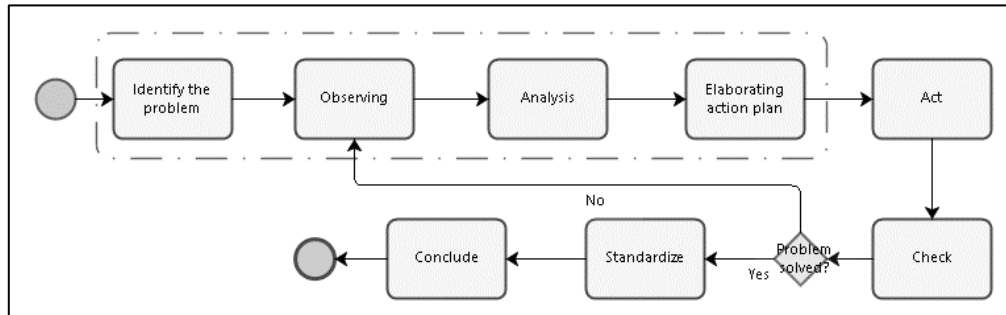


Figure 1: Stages of analysis and problem solving (QC-story)

In the **Identify the Problem** stage, it is analyzed the cost data. These data were analyzed through the Pareto diagram, which allowed identifying the main problems. In the **Observing** stage, the mapping of the processes in the departments with the highest index of problems was carried out. The mapping was performed using the BPMN notation (OMG, 2013), using the software Bizagi. In the **Analysis** stage the root causes of the problems were defined through the Ishikawa Diagram. At the stage of **Elaborating Action Plan**, the action plan was elaborated through the tool 5W2H. The other stages were not applied in this study, but actions were recommended for improvements in future studies.

4. APPLICATION

The case analyzed is of a large company, a joint-stock company, belonging to the apparel sector, which works with industrialization and trade of clothing and accessories. It is located in the city of Cianorte, state of Paraná.

The problem for apparel companies is the cost divergence of their products estimated at the beginning of the collection design, at the time of production, causing a negative impact on the planned product mix (about 300 models per collection), sales price setting, and budget and collection sales.

4.1. Problem Identification

Through analysis performed in the company it was possible to identify the main problems that affect the cost planning for the collection. Consulting the estimated and real cost data between the last two accounting years shows that problems recur between collections and the main causes remain at the top in those two years. The Graphs of Figure 2 and 3 show that errors in raw material consumption (1), price divergence (2) and model changes (3) lead the problems, followed by other causes that are separately irrelevant but contribute to the

divergence of any planned collection. In the analysis of the data it is possible to observe that there is a general divergence of 10% in relation to the estimated and real costs, a number considered high by the board and analysts.

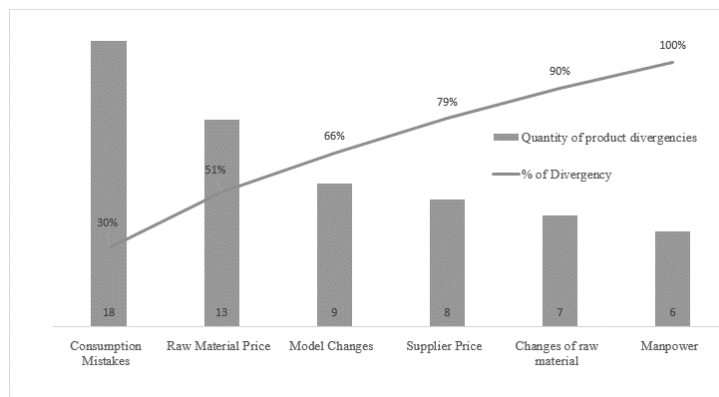


Figure 2: Cost divergences - Year 1

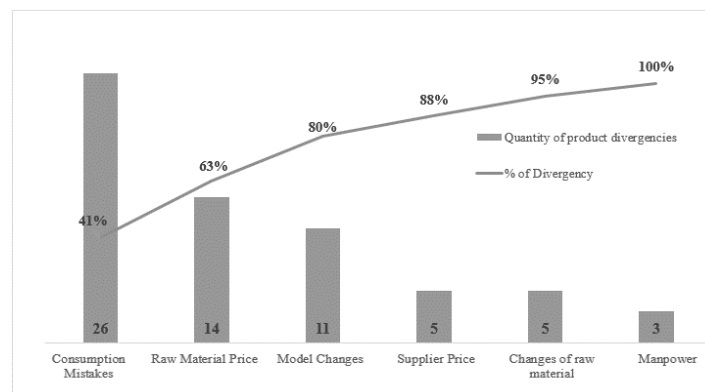


Figure 3: Cost divergences - Year 2

Figures 2 and 3 show that there are divergences due to different causes. The "consumption error" case occurs when the budgeted consumption of raw material for the product exceeds or decreases beyond the planned loss, thus causing unexpected loss. The cause "price of raw material" happens when the price of the article used in the product changes by unexpected exchange rate variation, or other factors of the suppliers, thus causing injury in the product.

The "change of model" cause happens when the developed model has changes after the estimated cost has been defined, diverging with the new real cost. The "supplier price" cause occurred the same as the divergence of price in raw material, except in this case it is with products bought ready, and the divergence happens when the supplier changes the price previously agreed by changes or variations. Finally, the "raw material exchange" cause happens when the raw material is changed after the definition of the estimated cost, distorting the current real cost.

Considering the data presented in Figures 2 and 3, one can observe the main problems that cause the cost divergences in the company, the Pareto analysis was used to select the main problems and to carry out a deep study, since the diagram of Pareto works using a simple technique of separating problems into a few vital and a trivial few evidencing the greatest losses of the process. The most important problems, which account for 80% of the amount, can be observed through the 80/20 analysis.

By Pareto analysis, it can be observed that the three main divergences in the process are the consumption mistakes, raw material price and finally the model changes, which together represent 80% of the cost divergences in the process. These divergences that analyzed within the whole process of the company represent a 10% variance in the real cost, in a large company is a representative loss within the collection period.

4.2. Problem Observation

In order to understand how the causes of the problems occur, a mapping of the estimated and real cost process was performed, helping to identify possible bottlenecks and problems in the process, since process mapping is a tool that visually documents and presents the dynamics of information evidencing the value flow of the company (Werkema, 2012).

In order to perform the maps, the BPMN notation was used, and the drawings were elaborated using the software Bizagi. In the process mapping of the estimated cost, (Figure 4), it can be observed that all information from the departments involved is sent to the technical file sector, which gathers the information and obtains the estimated cost. The technical file sector is subordinated to the style department, responsible for the design and creation of the collections.

In the real cost process mapping (Figure 5), the process is very similar to the estimated cost, but the information is received by the cost department, and analyzed with more discretion.

In the real cost process mapping, Figure 6 shows that some departments (fitting and timing) are not the same as the estimated cost process, this is due to the production processes being separated between pilot product and scale production.

Comparing the two process mappings presented (Figures 4 and 5), it is possible to observe that the estimated cost process is performed by the data sheet department, which also performs other aggregated functions, without maintaining a total focus on the process, thus not being able to identify possible incorrect information received from the departments involved.



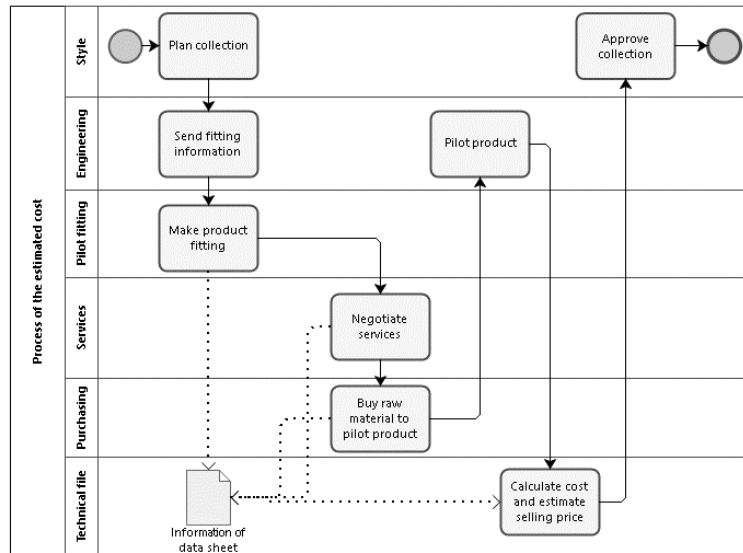


Figure 4: Process mapping of estimated cost

Therefore, it is perceived that the estimated and real cost process is based on organizing the information received and also on being able to identify possible errors in the data, this being possible, even knowing, superficially, the whole process. To identify the problems and inconsistent information that cause cost divergences, a process mapping was undertaken of departments identified as most problematic in cost divergences.

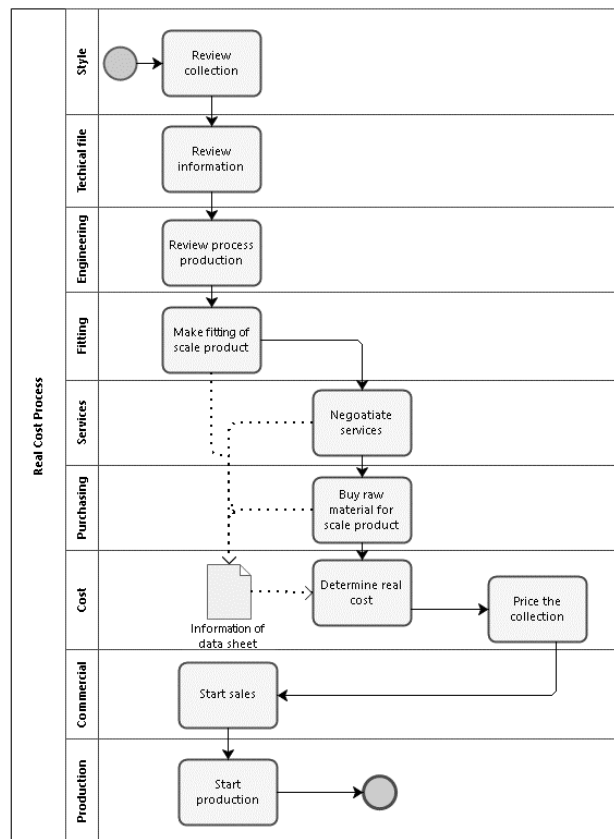


Figure 5: Real cost process mapping

4.3. Problema Analysis

Faced with the problem presented, it is necessary to be able to understand the causes of inconsistencies in information, thus causing differences in prices. The processes of three departments were analyzed in order to understand how the main causes of the cost process occur. The first department to be analyzed is the fitting, responsible for the problems of consumption of raw material, followed by the purchasing department, responsible for the prices of raw material and finally the department of style, responsible for all changes of the products during the process.

The fitting department acts as a programmer on how the parts will be cut by the cutting department. This department is responsible for showing how to take advantage of the raw material, through simulations via the system. These simulations present the amount of raw material to be placed in each table, which sizes to combine and which is the best way to cut, taking advantage of the raw material in the best possible way. By analyzing the processes of this department, it is possible to perceive that each raw material has a peculiarity to follow for better use, this information is provided by the product engineering. Due to the high volume, some data may not be sent or incorrectly sent, thus causing an error in the process, this failure reflects in errors of raw material consumption. In Figure 6 one can observe the flow of the docking department through a process mapping.

Analyzing the mapping of Figure 6, it was verified that the estimated and real cost processes are very similar, but the main difference observed is that they are not performed by the same department, the pilot fitting is located within the product engineering, is an independent department. In the estimated cost process the cutting schedule is still performed with many uncertainties, as the products undergo many changes until obtaining a standard product. The fitting of scale production (real cost), does not work with uncertainties, its standard product has already been defined, so it is possible to perform cut programming without divergences. Figure 7 shows the main problems identified in the fitting department through the Ishikawa diagram, also known as a cause and effect diagram, which is a tool used to relate all the causes that influence the problem.



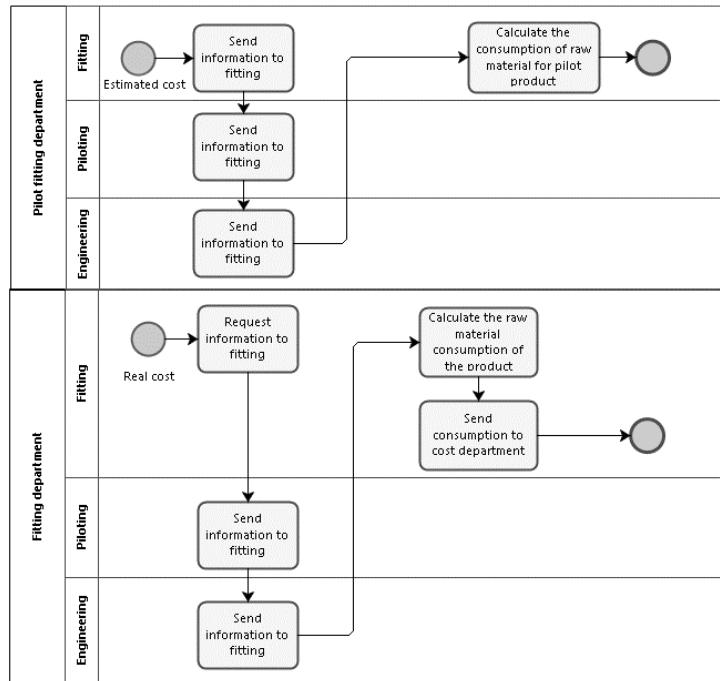


Figure 6: Mapping of fitting department

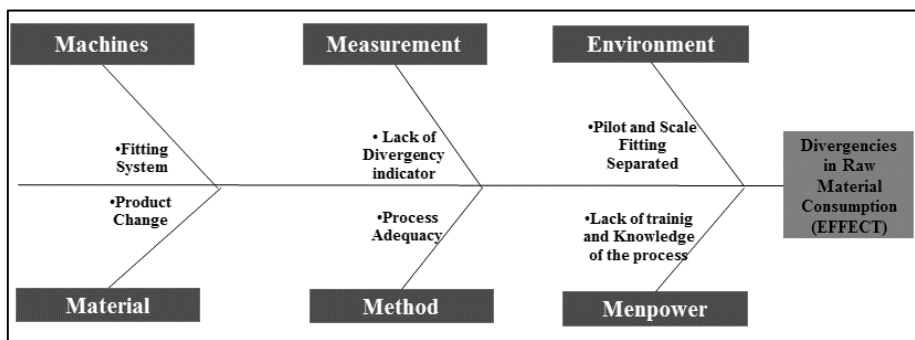


Figure 7: Ishikawa diagram – fitting sector

The purchasing department starts its work early in the development of the collection, and acts as a link between supplier and style. After the development request to the suppliers, the purchase receives samples and budgets of the raw materials. From these samples, the pilot products that are approved in the collection are developed. At this moment, the datasheet receives the pricing information used to calculate the estimated cost. The divergences of raw material prices occur because in the process there are still changes in the articles, and these changes reflect in price and consumption. Figure 8 shows the process flow of the purchasing department.

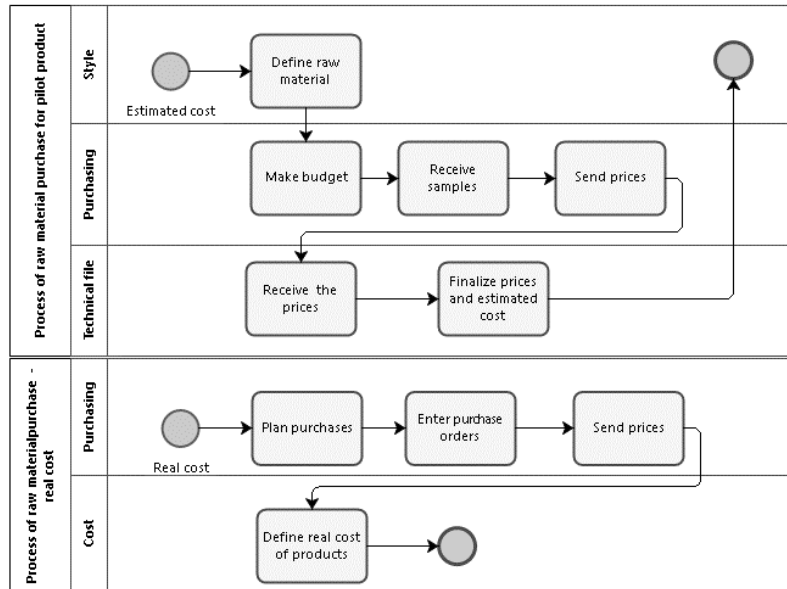


Figure 8: Process mapping of the purchasing department.

By the process mapping of Figure 8, it is observed that up to the approval of the collection the raw material to be used in the product undergoes changes, and this makes difficult a correct budget of its use. Another factor causing price divergence is the exchange variation, since most of the raw materials used are imported. After approval of the collection, the cost department receives the set prices, and does a job of controlling the inputs of raw materials in the inventory, to ensure that the prices used in the actual cost do not exceed the amount posted. Figure 9 shows the main problems identified in the purchasing department.

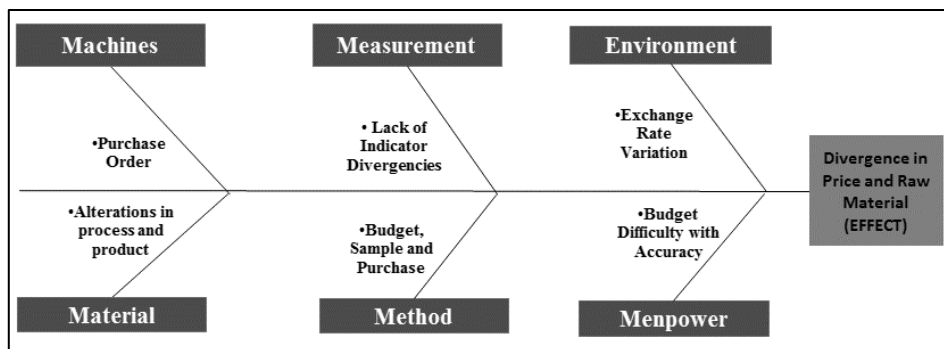


Figure 9: Ishikawa diagram – purchasing sector

The style department is responsible for developing the collections, and carries out a follow-up from drawing, raw material selection, testing, and production to sale. In the estimated cost process the information is cleared by the technical file sector, after the design and choice of raw materials. This is a time of uncertainty with processes, prices and articles to be used. After the pilot product is produced, the proof of the collection happens, and changes may occur in the product, causing disagreement with the estimated price previously. One can observe the process of the style department in the mapping of Figure 10.

Through the process mapping of Figure 10 it can be observed that the product can undergo several changes in the estimated cost process, making it difficult to assert what price it will cost. In the process of real cost, the cost department calculates the products already defined, so the cost will be really the price of the product. In Figure 11 one can visualize the main problems identified in the style department.

As evidenced in the Ishikawa diagrams, a plan of action is needed to change something that has already become a corporate culture. Planning must be done by each department, making them sub processes, which together achieve the overall goal of the company. In the action plan, it is necessary to relate the causes that induce the effects (problems) with the proposed solutions.

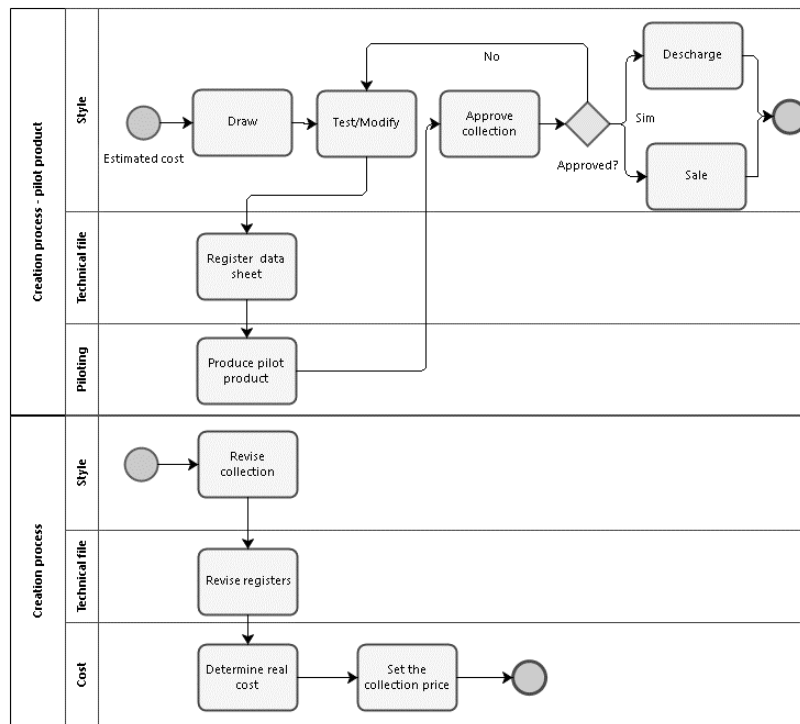


Figure 10: Process mapping of the style department

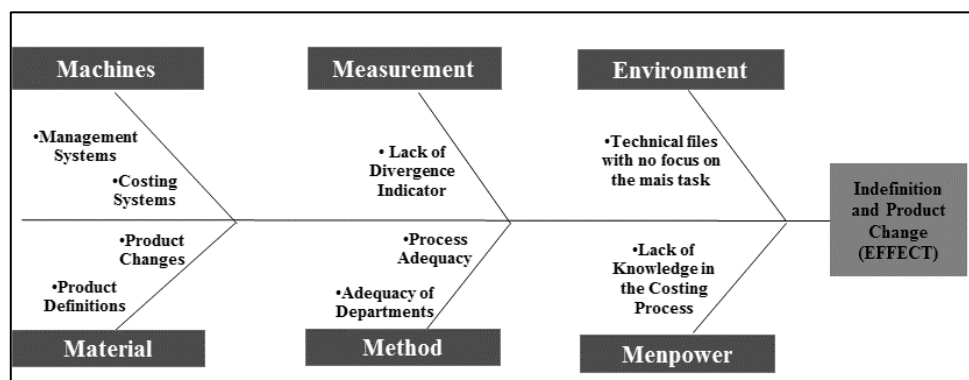


Figure 11: Ishikawa Diagram – Style Department.

4.4. Action Planning

In attempt to solve the causes of the problems related to the Ishikawa Diagram, it was necessary to elaborate an action plan using the 5W2H quality tool, which is used to describe in a complete way an action plan, which shows what to do, why to do, how to do it, who will be responsible, when to do it, where to do it and finally how much it will cost. This action plan presents implementation of new processes, change of habits, hierarchies and implementation of indicators.

The first action suggested is to measure the performance of the departments, through indicators, which can show whether the problems analyzed are still happening. The cost department can deploy indicators in the style, technical file and fitting departments, demonstrating to those involved the percentage of error in the finished collection, analyzing the problems encountered and suggesting corrections, in order to make a continuous improvement process. The second suggested action is to change the hierarchy of some departments, the technical file today is linked to the style department. It is noticed that the process of the data sheet happens in conjunction with other processes of the style, failing to maintain total focus on the estimated cost process.

The suggestion is to change the hierarchy of the data sheet, becoming independent or connected to the cost department. With this change, the technical file can improve the estimated cost process, being able to follow changes in prices, consumptions and processes, being more precise, since it will not be connected more with development, but evidencing the correct plug of the product created. Another change of hierarchy is in relation to the pilot docking department, which instead of being linked to product engineering, must make a single department with the production docking, receiving the same training and executing the same process, thus minimizing the consumption differences found in the analyzes.

Another suggested action is the implementation of the target cost for the style department, which will have a major impact on the company culture, and will only be possible after the stage of implementing indicators, as these will help in demonstrating the problem. With the implementation of the target cost, the department will establish pricing guidelines in the creation of its products, knowing how to create to achieve the target price.

Today, the style only knows the price of its product after the calculation of the estimated cost, already with the study of the implanted target cost, where the price is done from outside to inside, it is possible to have notion of how much the product will cost at the beginning of the project . This action requires great care and involvement from all departments, since a change



in the creative department can negatively impact the entire company. To reach the level of all stakeholders, it will only be possible by demonstrating through the indicators that the divergences are reducing the gains of the collections, and that the target cost will help reduce these indexes, bringing mutual benefits. At the end of each process it is suggested to implement an indicator that shows the total cost divergences of the company, thus demonstrating how much the process needs evolution. Table 1 shows how the execution of the suggested action plan will work.

Table 1: Action Plan.

Action Plan						
What	Why	Where	Who	When	How	How Much
Actions	Reasons	Local	Responsible	Deadline	Definition of actions	Cost
Datasheet Indicator	Evidence of departmental cost differences, drawing up action plan for correction.	Technical File Department	Cost Department	Immediate	Create and deploy the indicator in the department, highlighting the cost divergences in the collection.	No cost
Fitting Indicator	To demonstrate the divergences of raw material consumption of the department, elaborating plan of action for correction.	Fitting Department	Cost Department	Immediate	Create and deploy indicator in the department, evidencing the divergences of raw material in the collection.	No cost
Style Indicator	Evidence of department changes during collection, drawing up action plan for reduction.	Style Department	Cost Department	Immediate	Create and deploy indicator in the department, highlighting the changes that occurred during the collection.	No cost
Datasheet Hierarchy	Datasheet will have more focus in its process, since subordinated to the style, it executed other tasks of creation.	Technical File Department	HR/Cost	After Implantation of Indicators	Create a new department, making the technical file independent, requiring a coordinator.	Recruitment of 1 Employee
Hierarchy Pilot Fitting	Improve the process, departments are now separated, and end up not applying the same techniques.	Fitting Department	Fitting Department	After Implantation of Indicators	Make the two fittings a single department, so that they use the same techniques in the creation and production processes.	No cost
Implement Target cost	Assist the style in the creation of the products for the Mix, through implemented price goals.	Style Department	Cost Department	After Implantation of Indicators and Changes in Hierarchies	Implantation and training of the target cost, creating goals according to the mix of the collection, originating products with prices from outside to inside.	Training, Workforce
Cost Indicator	Evidence of the divergence between actual and estimated cost of the entire company.	Cost Department	Cost Department	After Implantation of other Indicators and Target Cost	Create and implement indicator in the department, showing the cost divergences of every company.	No cost

Table 2 presents the performance indicators proposed from the attributes name, objective, goal, calculation formula, and unit of measure, frequency, and data source and responsible, as proposed by Braz, Scavarda and Martins (2011).

With these actions of proposed improvements, in each collection it will be possible to observe, analyze the problems and apply solutions, thus making a process of continuous

improvement, thus contributing to the planning of the product mix and the general objective of the company.

5. RESULTS AND DISCUSSIONS

The QC-story stage: action, verification, standardization, and conclusion were not contemplated regarding the implications for the company and considering that the research is an analysis and proposal. As in this case study was identified, analyzed and suggested actions to the problem, the other actions are as a suggestion for future work in the company. The first action suggested is the implementation of the indicators, which will highlight the problems and motivate the suggested changes. The changes of suggested hierarchies may take more time for their total implantation, to move the organizational chart of some sectors, but it is a necessary change to the solution of the studied problem.

The best thing to do is to make changes to hierarchies gradually, so that the collection in effect is not impaired. Changing the hierarchy of the technical file department will be the most felt in the process, so it needs to be done carefully. Therefore, the change in the hierarchy of the fitting department may be immediate, since it does not have great impact. After the hierarchy changes, the next step is to implement the target cost in the style department, with the help of the data sheet. Following the methodological assumptions pointed out by Sakurai (1989) that emphasizes that the target cost must be defined during the Planning and Design phases of the product life cycle.

With the indicators working, the QC-story stages of act, verify, standardize and conclusion, thus making a continuous improvement process. In this process, with each collection, the indicators will show the divergences in the estimation of the estimated and real costs, thus indicating the possible errors. Thus, it will be possible to analyze the problem and develop actions to correct the process for the next collection, forming a continuous chain of improvement.

Table 2: Proposed Indicators

Name	Goal	Target	Formula	Unit	Freq.	Data Source	Responsible
Changed Products in Collection	Evidence of changes during development	Achieve the lowest rate of change	Quantity of products changed / collection total	(%)	In each collection (3 months)	Cost Department	Cost Department
Products with Divergence of Cost	Evidence of differences in the costing process	Achieve the lowest rate of divergence	Quantity of products with divergence / collection total	(%)	In each collection (3 months)	Style and Technical File Department	Cost Department
Products with Consumption Divergence	Evidence of divergences in the	Achieve the lowest level of	Quantity of products with consumption	(%)	In each collection (3 months)	Department of Cost and Fitting	Cost Department



	consumption of raw materials	divergence of consumption	divergence / collection total				
Costing Divergencies	Evidence of divergences in real cost and estimated cost.	Achieve the lowest percentage divergence of cost	Divergent Cost / Total Cost of Collection	(%)	In each collection (3 months)	Department of Cost and Accounting	Cost Department

6. CONCLUSIONS

Through the application of QC-story, it was possible to observe, identify and analyze the main causes of the divergences in the cost management of the company in question, and in view of the quality tools, it was possible to elaborate a plan of action and suggest the implementation of improvements. These improvements will benefit the entire cost management process, reflecting better utilization of product mix planning, and improved profitability in the collection, thus achieving the previously budgeted goal.

Finally, it can be concluded that the application of QC-Story and other quality tools were extremely important for the improvement of the company's process, which will bring benefits and results to the departments involved and to the company as a whole, reflecting even the client, which will receive a product less burdened by errors and waste in the process. These benefits can be evidenced in the next works, with the application of the actions suggested in this article.

Also worthy of note is the contribution of this work to the entire clothing sector of the city of Cianorte-PR, where it can be seen that these problems occur in several companies in the same sector, which can benefit from the studies carried out.

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