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SUBJECT: IMPLEMENTATION OF A METHODOLOGY OF PROCESS MANAGEMENT IN DEVELOPING AEROPOSTAL SHIRTS MEN IN THE COMPANY TEMPOCODECA CIA. LTDA. LOCATED IN THE CITY OF IBARRA

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IMPLEMENTATION OF A METHODOLOGY OF PROCESS MANAGEMENT IN DEVELOPING AEROPOSTAL SHIRTS MEN IN THE COMPANY TEMPOCODECA CIA. LTDA. LOCATED IN THE CITY OF IBARRA

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Abstract. *In this project Degree, a proposal for improvement applied to a real case is developed; processes of Textile Company TEMPOCODECA CIA. LTDA; the new methodology Process Management for the company develops with the aim of improving productivity in the development process aeropostal men and is available to the company all the information that serves as a tool to establish and process management continuous improvement. The project began with the development of theoretical-scientific used in the case study foundations, after an analysis of the current situation of the company is performed to identify the problems faced and information relating to the current situation is documented using tools industrial engineering to determine the process performance. Subsequently identifying problems in the company is done to make a proposal for improvement and results indicators show documenting information in a manual of procedures; the end results analysis is done, presentation and socialization of enterprise deployment respective presenting the conclusions and recommendations.*

Keywords

Process Management, Distribution Plant, Rolling Lines, Efficiency, Efficiency, Productivity, Production Capacity.

1. Introduction

At present the Company TEMPOCODECA CIA. LTDA., Does not have a management capable of minimizing the workforce of operators and downtime presented in the process of developing aeropostal men, despite having production capacity in well defined and structured processes Currently, it is for this reason that tasks are not always made according to internal customers.

Besides the production capacity at the company was affected by not following proper management by processes that allows compliance with planned by management.

This project is feasible to do, because the problem is real within the company and the new Process Management methodology improves productivity in the development process aeropostal mens, in order to perform efficiently procedures to continue and increase the production capacity of the company to ensure its permanence in the market.

This research takes into account the information directly from those involved would be: Workers, Engineers Textiles, Administrative Management Members of both production and sales, in addition to this secondary sources used to provide possible solutions for the benefit of the company is used.

Once the process map is set to follow in the daily activities of each area for the development of aeropostal men, is concerned also perform a management documentation processes to achieve avoid mistakes in production.

According to the identified problems arises to make a survey of processes using flowcharts processes and then make a time study in each process observing the work in the business daily, then the standard time is calculated by process and analyzed by cause and effect diagram problems in each area then analyze and find solutions to the problem considering improvements according to the production process, to end the approach is analyzed and improvements are applied when comparing results and documented them to finally draw conclusions and recommendations about the project.

2. Materials and Methods

2.1 Procedure of methodology development process management

Survey Process

For lifting flowcharts process applied to each area of the production process taking into account the sequence of their activities was used.

Breakdown of tasks in operations

The development process aeropostal men step in a suitable format for recording data sequence and described.

Taking times

The operations were subjected to time study with stopwatch resulting in the standard time for the 4550 pledges, which calculate correctly the standard time is obtained for each garment line aeropostal production for man, that was later used for the calculation the process cycle time.

Problem determination

To clearly identify the problems in the production process cause-effect diagram, which facilitated the identification of the main causes of the problem in each area, taking into account the approach used all workers.

Priorization causes

The main causes of each area are identified and prioritized according to the frequency and criteria of the company to identify the root cause of the problem and possible solutions; for this the Pareto chart is used as the main tool.

Operations analysis

After prioritizing the main causes of the problem are identified in the respective areas and to attack these problems check sheet for analysis of operations, in which the main points are specified to improve the production process is performed.

Calculate Productivity

The respective calculation of productivity of the process, including for this production capacity and efficiency of the process is done.

Proposed improvements

According to the analysis of problems using the aforementioned tools, process management improvements that will help improve process productivity arises; accordingly arises-balancing lines and an improvement in the distribution of plant, to complement the proposal arises apply the story board for continuous improvement.

Implementation of the new methodology

The new management methodology is implemented by processes according to the line balancing and distribution of plant and performs again the timing and cycle time to see improvement, documented in a manual of procedures as mentioned in the proposal.

3. Results

RESULTS TABLE				
Detail	Current	Enhanced		Units
		Line Balancing	Lay Out	
Cycle Time	272,39	80,53	80,50	time/shirt
Production Capacity	0,28	0,94	0,94	shirt/min
Labor Productivity	0,41	0,90	0,94	%
Process Productivity	0,52	0,95	0,95	%
Process Ratio	0,70	0,72	0,77	%
Cost of Production	29828,28	93398,40	93398,40	\$/Production
Cost of Turnover	34793,69	113973,12	113973,12	\$/Production
Utility	4965,41	20574,72	20574,72	\$/production
Return Index	1,17	1,22	1,22	%
Variation in productivity		0,70	0,70	%

Figure 1. Table of results of the implementation of the new methodology for process management.

In Figure 1, it is seen as improving cycle time of 272.39 hours / 80.50 hours to 4550 t / 4550 t; production capacity of 0.28 t / min to 0.94 t / min; productivity of the process from 52% to 95%; the rate of return of 17% to 22%, focusing the variation of the process productivity is 70%, taking into account the result of improvement is applying the balancing lines and distribution plant.

4. Conclusions

All scientific foundations theoreticians who served aid in the development of the project, using the applicable Reference Tools Industrial Engineering was investigated.

A survey process was conducted using a basic tool such as flowcharts, which allowed us to meet the production process applied in the company.

Time study of the production process, using diagrams description of activities to identify the time per unit in each area of development process aeropostal men was performed.

Problems identified in the process by cause-effect diagram that facilitates the identification of problems and ideas for improvement for them and these problems are prioritized using a Pareto chart to focus on finding suitable solutions for process improvement.

A mathematical model that describes the behavior of the current process and productivity, production capacity and unit cost of production based on a costing of production orders is determined arises.

It designs and implements a process management methodology, the same that aims to improve current productivity of the production process; for it is proposed and implemented the following actions:

Production line swayed reaching an improvement in cycle time of 272.39 hours / 80.50 hours to 4550 t / 4550 t; production capacity of 0.28 t / min to 0.94 t / min and the productivity improved from 52% to 95% resulting in a change in productivity of 70%.

Distribution plant that facilitated the flow of material from each workstation, thus achieving increase process performance indicator, which quantifies which represent transactions that generate value added in the production cycle (RATIO process) was improved 70% to 77%.

A graphical tool called Story Board to monitor improvement, allowing recognition before and after project implementation through images was applied, also applies globally using the 5's in the production process as a complement to Story Board detailing what should be done to maintain order and cleanliness within the company.

It developed, implemented and socialized manual procedures to reinforce the improvement in the production process, the same as was applied to each area.

It Developed, implemented and socialized manual functions, the same that describes the activities and responsibilities that each operator must perform in office designated to meet the development process of developing aeropostal men.

After designing and implementing the new methodology for process management in developing aeropostal men analysis of the variation of the indicators proposed as cycle time, production capacity, labor productivity, productivity of the

production process is performed index productivity and productivity change.

Besides a detailed economic savings in time after the implementation of technical improvements proposed analysis was performed, this includes the calculation of the IRR, NPV, Reason B / C and the payback period on investment (PRI).

- B / C: $1.33 > 1$; Project considered profitable.

- IRR: 56%; viable project.

- VAN: \$ 19,594.73; to be a positive value the project viable.

- PRI: the investment is recovered in five months, because the amount in this month is already more than the amount of the investment.

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