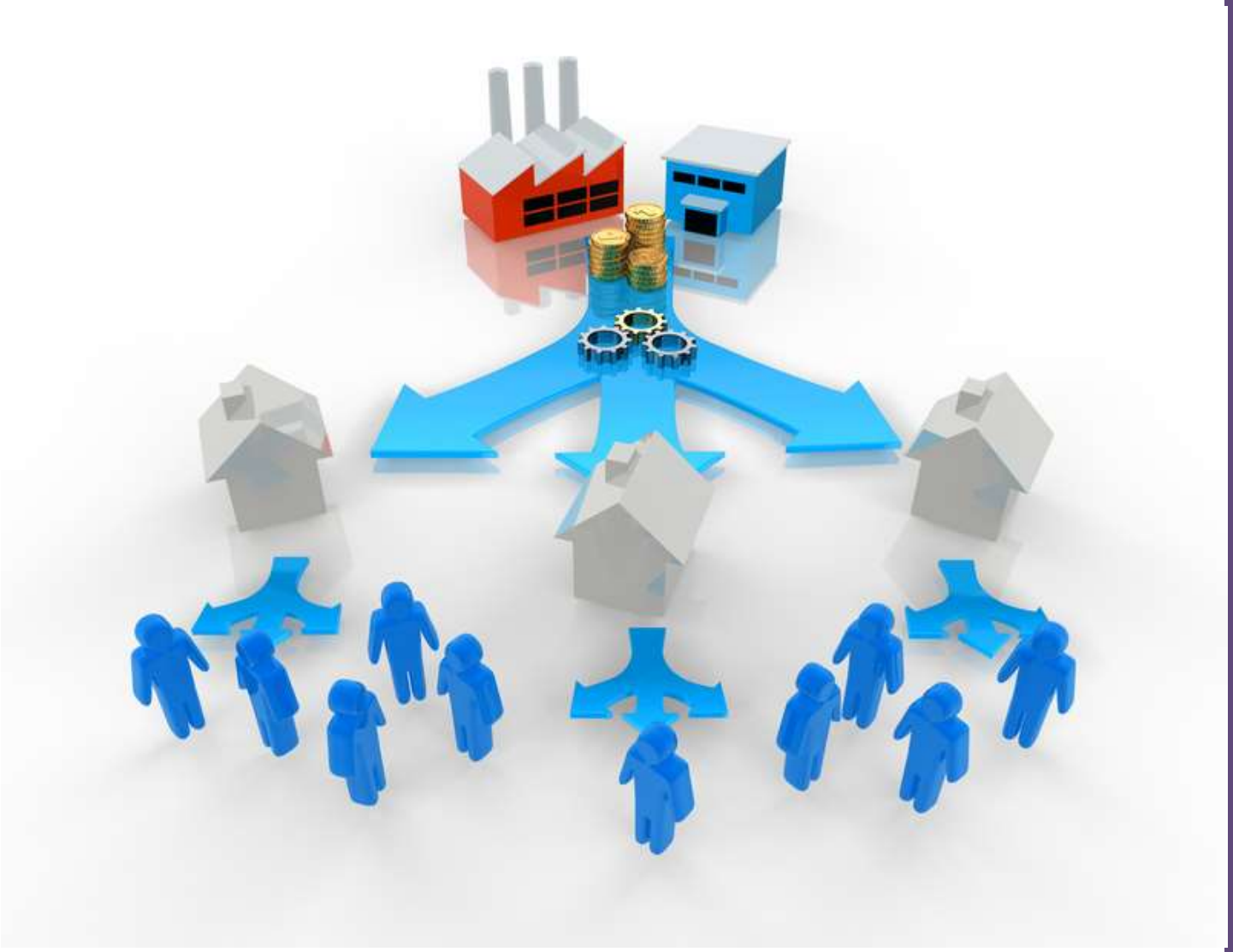
Operations Management



Executive Summary

This report aims at analyzing the operations strategy of ABC(Pvt) Ltd and the quality management practices. It also aims at illustrating the industry best practices with regarding to quality management of processes and products. The detailed analysis would aim at identifying the bottlenecks in the operations and then recommendations are given for overcoming them. The core cross functional business functions have been analyzed along with the drawbacks that could be identified currently in the process. Efforts had been described in re-engineering those processes and further developing them.

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Introduction

Operations Management is a vital academic discipline that becomes important in practically managing the core operations in an organization in an effective manner in order to get a competitive advantage over competitors.

Like the other functional strategies, operations strategy should be set in line with the overall business strategy and it deals with devising a course of actions for conducting business operations in maximum effective and efficient manner. This includes minimizing cost while maintaining the quality of the products and processes.

This report elaborates on the operations strategy of ABC (Pvt) Ltd. Which is a cable manufacturer based in Rathmalana, Sri Lanka. The company serves both industrial and domestic sectors with over 175 assortments and over 400 varieties of cables. Among the major customers, there is Sri Lanka Telecom, Ceylon Electricity Board, and LECO etc. The products of ABChost large scale construction projects too.

The company operates with a long term vision of being the nation's leading electrical solutions provider through imagination, excellence and innovation. Its mission is to provide integrated electrical solutions. Inspiring its employees to embrace a quest for exceeding customer expectations by developing the highest standards of excellence in products, processes and relationships, whilst increasing and maintaining their loyal customer base The Company has a set of core values that include quality, teamwork, sustainable growth, and customer focused solutions, equality, continuous improvement, environmental conservation etc.

01. Analysis of the Operations Strategy of ABC Cables

1.1 Manufacturing Process at ABC Cables

There are two main products in the factory which are copper wires and aluminum wires. To produce them mainly required 3 types of raw material.

I. Copper- Imported from Egypt or India
II. Aluminum- Imported from Egypt or India or supply by CEB
III. PVC

PVC is imported from Singapore and Vietnam

Wire Drawing

The process of wire drawing like the name implies is to draw a wire of a bigger diameter through a hole with smaller diameter hereby reducing the diameter through plastic deformation while the volume remains the same.

Drawing Dies

Drawing dies are typically made of tool steel, tungsten carbide, or diamond, with tungsten carbide and manufactured diamond being the most common. Wiredrawing dies are the most important tool in wire drawing due to their direct bearing on quality of wire and economy of the drawing process. During the drawing process, the dies are subjected to severe abrasion. All these factors have resulted in a search for harder, more wear resistance and finer die materials for manufacturing quality wire economically. (Mahadevan, 2010)

Dies must be cleaned regularly, subject them to the microscopic inspection and should decide whether the dies should be sent tore-polishing or resizing.

Heavy Duty Wire Drawing

By heavy duty wire drawing machine 8mm rod is reduced to 2.79 mm diameter wire. In order to draw wire to the size 2.79 mm it should be passed through a number of sequentially placed drawing blocks. Here there are six blocks and before the wire wraps around the block it is passed through a die box which contains a wire drawing die.

Medium Duty Wire Drawing

The wires of 2.79mm which are outputs from Heavy Duty wire drawing machine are drawn to 2.14-0.53 mm by this process. To draw wires to different sizes there are die sets with different combinations. It depends on available dies, required diameter of the wire and here maximum of 18dies and minimum of 5 dies are used. When drawing, the die set is immersed in a lubricant bath which contains a mixture of cutting oil, Rajultra-form copper lubricant and water (Jae, Siegel, 2005)

Fine Duty Wire Drawing

This process is very similar to medium duty wire drawing process. Input size ranges are output ranges of medium duty wire drawing machine and output size ranges from0.30mm–0.15mm. The maximum number of dies used here are 21andminimumare 14.But here no weight loading is done because the wire is too thin and easily broken. The lubricant used in this process is a mixture of cutting oil, Raj ultra-form copper lubricant, lubricool Ac and water. Lubricool Ac is a coolant.

Annealing

The Annealing is a low oxygen-free zone used to eliminate oxygen and prevent the wire from oxidizing at elevated temperatures. The wire is heated by electrical current and then cooled by a water quench. This process relieves the stress caused by the mechanical drawing and restores the copper wire flexibility and makes the wire more ductile than hard copper.

Bunching/Stranding

After the wire is annealed, it is wound on reels and are put for bunching/Stranding on the wire Stranding/bunching machines for getting different size range of bunched/stranding wires. The wires are twisted with specific geometric patterns with specific twist length. This is to increase the ability of the wire to flex repeatedly without breaking and allow the wire to be used more easily.

Bunching

It is a high speed operation that allows for large number of ends to be assembled quickly by wrapping ends together. In a bunch each end has node finite place to occupy in the final construction, as a result ends can (and will) shift and float freely.

Insulation

Insulation is the coating of wire and wire coatings are manufactured with extrusion. In order to achieve a variety of electrical, mechanical and thermal barrier properties insulation should be done. The bare wire passes through the back of the die and is drawn forward through a stream of melted plastic. (Jae, Siegel, 2005)

Braiding

High speed braiders produce a tubular braid over a core material or over a solid cord product. They have two sets of carriers rotating in circular paths and in opposite directions. The braid strands from the lower carriers are guided over and under the upper carriers.

Sheathing

Sheathing bundles multiple insulated conductors and provide additional protection such as environmental or fire resistance properties.

Extruder

Polymer melt is applied to bare wire as it is pulled at high speed through a die. As light vacuum is drawn between wire and polymer to promote adhesion of coating, Wire provides rigidity during cooling–usually aided by passing coated wire through a water trough. Product is wound onto large spools at speed up to 50m/s. (McLachlin, 2010)

Spark Tester

The spark tester provides testing of the cable insulation to ensure that there are no breaks or pinholes. This is achieved by the use of a high voltage electrode, typically comprised of a curtain of beads through which the cable passes.

Packing

1.2 Strategic Aspects of the operational strategy

Strategic aspects of operational strategy refers to the aspects that link with the functions and decisions of the top level managers and has an impact on the overall business strategy of the company.

Design of cables

Designing of cables in a special manner so that the cables are fire resistant, durable, and flexible and safely is a core competence for the company

There is a special team of engineers who are involved in designing new cables according to the requirements of the customers. This is a cross functional process where the marketing manager is involved in designing the label and advertising, finance manager is involved in costing for the new product, production manager is involved in deciding the capacity in the factory, production planning etc.

Location Strategy

The manufacturing plant of ABCis located in Rathmalana; in close proximity to the Galle road. This location brings strategic advantage in meeting the order requirements of its customers and also it aids in transportation to foreign countries due to the availability of Rathmalana airport and Bandaranayake International airport in Katunayake.

Layout Strategy

Layout strategy refers to the arrangement of the workstations, departments etc. in the factory. The optimum and cost effective layout should be determined by the company so that it could hold its competitive advantage. (Jae, Siegel, 2005)

The plant layout at ABCis designed in a flexible manner that supports the flow of information, materials, and people. The space utilization is optimized within the limited space available at the premises. There are safe working conditions for employees within the plant.

There are safe work equipments like masks for some activities and fire extinguishers are set in proper places thus ensuring work safety.

Currently, there is a product oriented layout at ABCwhich focuses on optimum positioning of personnel and machines in repetitive or continuous production. The production process for

cables is more or less the same for all varieties that it produces but small amendments would be done at certain points in the process according to the variety.

The advantages that were seen in this type of layout was the low variable cost per unit, high rate of output, reduced work in process due to continuous process, easy training and supervision etc.

There were certain disadvantages where the whole process becomes standstill when one point in the process becomes inefficient and high volume is required for effectiveness. The change in varieties requires amendments to the process.

Process and Capacity Design

The main reason behind strategic capacity planning is to adjust the level capacity to suit the demand for the product. In designing the optimum level of capacity, decisions must be taken about equipments, space, employee competencies. Improper capacity planning would result in lost customers and high cost.

Capacity design strategies include leading capacity where changes into the capacity are done based on the expected future demand, lagging capacity where capacity changes are done after experiencing a change in the demand. Tracking capacity is another strategy that focuses on incremental changes to the capacity level over time.

The two basic functions in capacity planning are design capacity and effective capacity.

Design capacity means the maximum product or service capacity or rate of output based on which the facility is designed. Effective capacity is the difference between the design capacity and personal and other allowances. These could be used to find the efficiency and utilization.

Efficiency =Actual output *100/Effective Capacity

Utilization=Actual Output*100

Design Capacity

When considering the capacity planning process at ABC Cables, they consider short term and long term demand changes and accordingly decide the capacity level. Production of cables is affected in the short term due to seasonal, random and irregular fluctuations in demand.

ABCuse human resource policies such as employee recruitment, hiring temporary employees, increasing the shift of work, paying for overtime work etc. when there is a peak demand and there are employee layoffs and reduction in shifts during low demand times.

When the economy comes to an expansion stage in the economic life cycle, the demand for cables increase, this occurred in the rapid expansion period after the war. And also, economic, political changes in foreign countries also affect the company through foreign demand for ABC Cables. With identifying the increase in demand over time, the company should find ways and means of increasing capacity over the long run in order to cater to the increased demand.

In this manner, the company tries to avoid any excess capacity or under capacity that would be inefficient in terms of the level of demand.

The facilities layout at ABChas positively affected the capacity effectiveness because it enables spare capacity to be utilized at peak demand times. And also the uniform nature of the product and the materials has led to standardization of methods and materials. Process factors like quality maintenance has resulted in continuous flow of goods at similar rate. And also they do overnight changes to the machinery layout when a different variety order comes thus the facility is efficient in that respect too.

When considering the negative factors on capacity, employee layout has been a problem, mainly the lowest level employees. An also the late deliveries of stock and wrong decisions on purchasing has reduced the capacity level at ABC Cables

Human resources and job design

Human Resources Management of the company aims to attract and retain the best quality employees within the company in the long run. In order to retain employees with the company, they should be supplemented with the necessary career development, address their grievances, welfare etc.

At ABC Cables, the lower level employees engage in different tasks which are repetitive. Therefore, they are encouraged to learn with rotating between tasks once they get specialized in a task in order to prevent job boredom and over specialization. There are employee performance evaluations based on multiple criteria and the employees are given a feedback through which they are motivated. (Jae, Siegel, 2005)

Supply Chain Management

Supply Chain Management of ABCinvolves all activities from the sourcing of raw materials till the dispatch of goods by the customers. The effectiveness and efficiency of the process has been a major factor behind the cost effectiveness and competitive advantage.

Efforts were extended at ABCin analyzing the supply chain activities and devising strategies to eliminate no value adding activities thereby reducing the costs. This will increase the value of activities and deliver value to the ultimate customers. (McLachlin, 2010)

At the initial stage of the value chain, ABCaccepts orders and then the orders would be synchronized with the sourcing of raw materials, labor requirements, and physical capacity requirements. Then, after production planning, the production starts at the factory after preparing the equipments and machines according to the requirement. As the final step, the produced wires would be transferred to the warehouse and then stored until dispatched by customers.

1.3 Tactical Aspects of the operational strategy

Layout and structure

The product layout at ABCconsists of a assembly line where there are several workstations arranged in the logical order in the same line and the processing cables move along the line with completing the production requirements at each workstation.

Line balancing is an important task at ABCwhich is a technique of planning the efficient flow of work load through the workstations located along the assembly line. If assembly line balancing is properly done, cycle time would be calculated and the conveyor belt would carry the work in progress accordingly. This minimizes the accumulation of stocks in workstations and hence minimizes inefficiencies and time consumption.

The processing cables at ABCare not moved across workstations through a conveyor. The finished work would be manually loaded to the next workstation. This is a very inefficient practice and it consumes labor and time unnecessarily. This has made the facility so untidy and has created a negative mental feeling to the employees.

The employees at ABCface an uncomfortable work setting where they have no proper seating facilities and their hand and body movements were not standardized and they involve in motions that are unnecessarily consuming energy. (Jae, Siegel, 2005)

Equipment Selection and Replacement

Equipment selection and maintenance is a vital factor which directly affects the quality of the end product. And also machines with poor condition result in frequent breakdowns which is a cost to the company as well as it results in idle labor. There should be proper planning for maintenance, replacement, sourcing quality machinery from reliable vendors etc. which is a function of the management. This will ensure continuous flow of production and hence meet the customer orders on time.

When analyzing the machinery maintenance and replacement at ABC Cables, it was observed that there were frequent machine breakdowns and the maintenance was not done in a proper manner. (McLachlin, 2010)

This has affected the efficiency of labor and the overall production process. There were broken machines still waiting in the factory which has become a disturbance to the other machines that are in use while consuming space unnecessarily.

Project Management Methods

Projects supported by ABCare being managed effectively by a team of engineers which is nourished by the support and assistance by the finance manager, IT specialist, marketing manager. Therefore it is a multi-functional project team that manages the project in multiple aspects such as the technical aspects, costing, delivering customer awareness etc.

1.4 Operational Aspects of the operational strategy

Scheduling and control of operations

Scheduling and control of operations at ABCwas properly done by the team of engineers who were in charge of the production activities. In the case of approval to a new order, the management calls up a meeting and informs the production department. Then the production

scheduling would be done with changes incorporating to the resource requirements, sourcing of materials, labor etc. and ways and means of increasing efficiency.

The master production schedule would be prepared based on the total estimated demand for various types of cables during a specific period of time.

The needed machinery would be arranged accordingly in the work floor in the linear manner and the placing of workers, equipment etc. would be determined accordingly.

Inventory management

In the warehouses of ABC Cables, there are raw cables that are required to produce the cables (therefore they are raw materials that are about to go into the production process) and finished cables that are about to be dispatched by the customers. Work in progress is mostly remaining in the workstations in the assembly line. (Jae, Siegel, 2005)

The finished cables would be packaged with polythene and cardboard boxes and then are stored in racks which are specially prepared for storing packed cables.

There are no sophisticated methods of inventory management like JIT but they follow the traditional lead time method for stock controlling. (Mahadevan, 2010)

Quality control and inspection

When considering the quality context at ABC Cables, there are several quality control practices carried out. There were strict quality controls in terms of the cleanliness of the interior of the cables, quality in packaging, adherence with Sri Lanka Standards etc. Sometimes these quality practices were carried out by disturbing the smooth flow of production which negatively affected the productivity. Therefore there could be seen a tradeoff between quality assurance and efficiency of the production process.

Quality control was not a continuous process that went throughout the production process, after checking the raw cables at the onset of the production; the half-finished cables were then checked for quality at a stage when it has passed many steps in the production process. Therefore, it was seen that the cables were loading increasingly at the quality check point in the middle of the production process. (Jae, Siegel, 2005)

Traffic and materials handling

The overall efficiency in material handling is not effective in ABCbecause the copper coils that move from one workstation to the next through bobbins are done manually. If there is a method of transferring the bobbin from one point to another, the production process could be made efficient.

When bobbins are not properly placed after unloading in the workstation, the entire work floor gets untidy and that can be a negative impact on the stressful mind of employees.

Equipment maintenance policies

Machinery maintenance at ABCis kind of preventive maintenance where all machinery would be serviced at a fixed time interval. Although there is preventive maintenance, there could be observed a little number of machines just idling due to sudden breakdowns. This has anyway affected the inefficiency in the production flow.

The maintenance crew has to be informed of any breakdowns and they are sometimes assigned to some other production tasks and so they take time to attend to the required place. This too affects the production efficiency. The main reason for such idling of broken machinery was the inadequacy of technical knowledge for the existing maintenance crew. In such cases the company has to hire external specialists.

02. Quality Management Practices

Quality management is an important practice in the manufacturing companies because it determines the quality of the end product. Total quality management refers to the management of every aspect of the organization in manner to ensure the quality of the end product. This excels from the careful design of the product or service and ensuring the consistency of the quality of the process.

The practice of total quality management is based on principles such as leadership, customer orientation, strategic planning, employee responsibility, cooperation, statistical methods, training and education etc.

2.1 Existing Quality Management Practices at ABC Cables

Checking the quality of inputs

At ABC Cables, the inputs such as the copper coil and PVC are checked for the required quality by the quality supervisors. This is done according to the set standards.

Copper coil should have a diameter of 8mm. This is checked with the tool called vernier caliber and then a sample is used for the tensile test. Then the composition of copper in the coil is measured as to ensure it is pure copper. Since the company lacks the required laboratory facilities, a sample of each supplier is annually sent to the University of Moratuwa for testing the composition of metals in coils. (McLachlin, 2010)

Process Errors Detection

The copper coil which is drawn through the production process is being checked for quality while in the process. The diameter of the coil is reduced through drawing machine. For this purpose diamond die is used in the machine which ensures quality and precision in wire drawing. The person responsible for the diamond die is responsible for maintaining the required diameter of it. This is again checked for quality in the laboratory along with the strength.

Insulation Quality

Insulation is done using Poly Vinyl Chloride and it is applied as a coat over the cable. One method is the manual method where a person touches the wire as it draws through the process and feels any damages if have occurred. The other method is the automatic method where the drawn cable is sent through chains and those chains would be provided with high voltage electricity. Then if there are any damages, there will be a spark. In such cases, the wire would have to be cut from that point and the process would be continued.

Sheath Cover Quality

The quality here is that the insulation and the sheath should not contact each other. This is tested through conducting the tensile test again for checking the strength in stretching. The PVC weight per unit length of cables is measured. Then again the distance to which a fire would propagate would be testes under laboratory conditions and the diameter of the sheath would be measured. These measures are tested against the standards which they follow; Sri Lankan as well as British Standards which are accepted as company standards.

Sheath Label Quality

After completing the production of cables, there would be a label printed on the cables. This includes the name of the manufacturer and the identification code of the cable etc. These would be checked by a separate person with taking a sample before and after putting the label. It should be correct and with right alignment. If it is improperly printed, it would be erased and again printed. (Jae, Siegel, 2005)

Facility Quality

It was seen that the cleaning team do their best to keep up the quality of the work floor. But overall, the untidiness that has created as a result of improper ways of moving wire loads from one workstation to another and the existence of bobbins which are empty all over the factory has made the place so untidy. Sometimes since the employees have no properly labeled places to keep their tools, they could be lost. This has created accidents within the work floor and sometimes creates disturbances to other processes too.

2.2 Industry Best Practices in Quality Management

Total Quality Management

This is an important concept in quality management which has its own set of principles, techniques and practices. Principles such as customer orientation, continuous improvement, team work etc. are the principles upon which the philosophy is based on. There is a range of practices backed up with techniques which ultimately support the aforesaid principles.

Several prerequisites are there for the successful implementation of TQM within a company. The continuous commitment of the top management is very important. Active participation and encouraging lower level employees to carry out quality practices is needed.

Along the techniques that support TQM, benchmarking is widely used by companies. This is where the industry best practices with relation to policies, activities, processes etc. would be sought out and kept as a guiding factor to be aimed at achieving through operations. This would be helpful in identifying the current shortcomings in the process and then taking the necessary corrective actions in order to reach the benchmark.

Quality Management systems

Quality Management systems are another practice in the industry which is aimed at identifying the bottlenecks in the production process and faults I other activities as and when they arise. This would ensure the timely execution of corrective actions which is a delegated task to the staff who is involved in each activity.

Quality Function Deployment

This is another quality practice in the industry which is to be incorporated in the planning stage of the management process. The main focus is on reducing the level of waste and the rejection rate due to quality problems through excessive planning at the beginning. Hence this is aimed at minimizing the cost. This is also incorporated for activities, processes, product planning etc.

Quality Circles

This is a Japanese concept which is aimed at forming a group of employees from different functional areas within the plant and then they are made to interact with each other and discuss the problems they face during the functioning of their particular areas in the production process. Quality Circles promote the power of collectivism in achieving quality and solving problems which takes into account multiple view points and different ideas that would be useful. (McLachlin, 2010)

Five S Systems

The five S s represent the words Sort, set in order, Shine, Standardize, and Sustain. This is a total quality management process which would be implemented all over the factory including different functional fields, activities, processes etc. with obtaining the cooperation of all employees in all levels in the hierarchy.

Sort- This is the starting point of implementing five s. First, the work environment has to be observed and analyzed in order to point out the negative points that disturb the whole process either by consuming time or energy or cost. The process of finding out these abnormalities would be done by the workers themselves and they are motivated to think about new solutions or ideas for improving those points effectively. (Jae, Siegel, 2005)

Set in Order- The abnormalities would be marked with a red label and further sought to implement lasting solutions in a practical manner for the problems that have been identified as abnormalities. According to this step, different kinds of material within the warehouse would be tagged with identification tags so that the employees would find it easy to find the needed inputs quickly. And also there would be proper places allocated for each kind of material. The machine spare parts, tools, lubricants and other technical items would also be labeled properly and kept in proper places so that they would not be misplaced.

Shine- This means the shining of the work environment which means the cleanliness and tidiness. According to this, the shelves in the racks of the warehouse would be neatly arranged and the area would be clean without cobwebs and the floor would be dust free and mopped. This includes the assigning of duties to the cleaning staff in proper manner.

Standardize- This refers to the standardization of activities that had been identified as solutions to the abnormalities. According to this, the labels and identification tags used for different purposes would be documented and displayed publicly. And also the waste ready for disposal would be separated as recyclable and non-recyclable waste. There would be different schedules displayed with indicating the responsibilities for cleaning, tools maintaining etc.

Sustain- All the above steps show the efforts in implementing quality practices. This step emphasize on continuing the efforts taken. First the implementations should be evaluated and the drawbacks should be identified with the aim of redefining the new solutions or taking corrective actions. Quality Circles could be used for this purpose.

Six- Sigma

This quality management practice involves reducing the defect rate of manufactured products by 99.99966%. This approach involves a combination of other quality management methods and statistical justifications. This is concerned with the quantitative measure of defect rate and aims at minimizing the defects related costs and waste. (McLachlin, 2010)

03. Core Cross Functional Business Functions

Core Cross Functional Business Functions means activities that are carried out with the participation or contribution of different functional fields. In a company, the different types of business functions include marketing, Information Technology, Production, Finance, Accounting etc. At ABC Cables, cross functional business processes are coordinated by a leader appointed from within the team of functional managers or employees. Here the goal of every functional manager should be aligned to one goal which is to accomplish the process successfully. This would ultimately focus on the corporate strategy and mission. Since people from different departments come together into one process, there is much human interaction, collection of new ideas, analytical viewpoints that aid in effective decisions.

3.1Process of preparing budgets

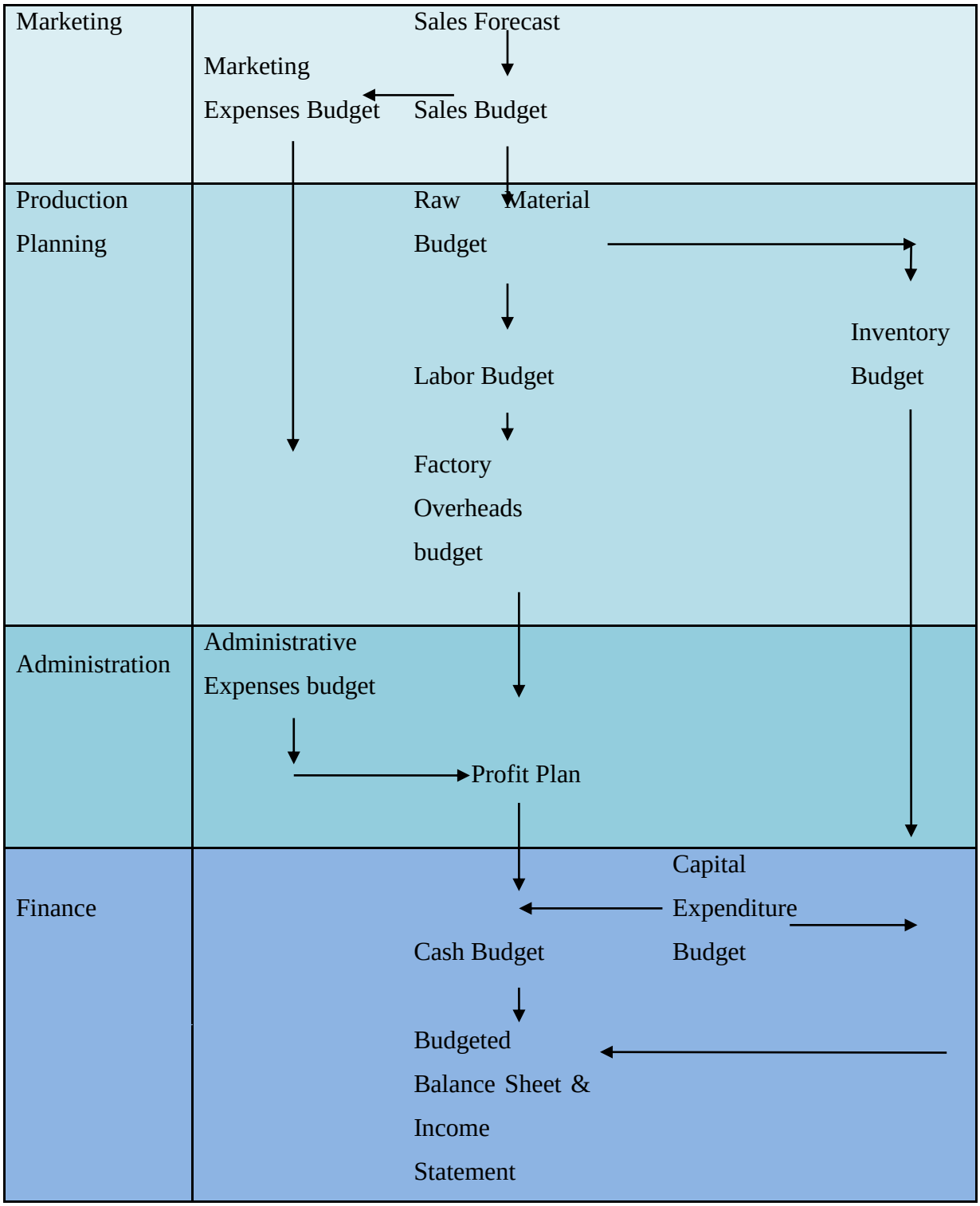


Figure 1 - Process of preparing budgets

This is a cross functional core business process where different kinds of budgets are prepared by different departments. First, the sales budget would be prepared by the marketing team based on the sales forecast for the forthcoming year. Then based on the sales budget, the

production planning department would prepare the raw materials and other accessories budget in order to suit the production for the demand. The labor requirements would be assessed by the production and then the recruitments would be forwarded to the Human Resources Department. (Jae, Siegel, 2005)

This process embeds several problems because the process is not very interactive and different views are not entertained to be in open argument. The process of communication is not open and hence the final meeting often ends up with a heap of arguments than a completed budget. It could be recommended that the budget preparation should be an open process where managers of all functional fields get into one table along with their documents and then discuss with constructive criticisms and new ideas. The proposed method is illustrated below. This kind of discussions should be regularly done with involving the suggestions of the lower level employees which are valuable. The finance manager who is to be the chief in the budget committee should always align the team to a single goal that is in line with the corporate goal.

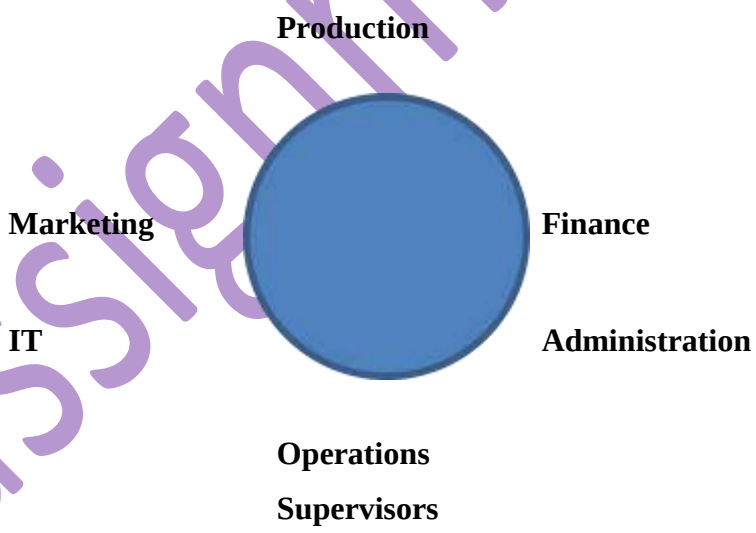


Figure 2 - The proposed method

3.2Process of fulfilling orders

At ABC Cables, the process of fulfilling orders involves the assistance of several different functional departments. The orders for different forms of cables would first reach the sales division which operates under the marketing division. Then the feasibility of the order would be assessed with regarding to the quantity required and the specialist skills requirement etc. If the order is feasible, it would be forwarded to the production planning division where the necessary adjustments to the factory floor would be carried out. In here, the production schedule would be prepared with specifying the amount of raw materials required, amount of accessories required, types of machines required, the amount of labor required etc. in order to fulfill the order by the deadline given by the customer. Meanwhile, the availability of inventory in the warehouses would be checked. If there is a deficiency of raw materials, orders should be placed. After receiving the required materials, production would begin. The finished goods would be packaged with putting the label by the marketing division. The packed goods would be dispatched to the local customers and to the airport and harbor through the logistics department of the company. (McLachlin, 2010)

In this cross functional process, there are several drawbacks identified. These could be corrected through a re-engineering effort.

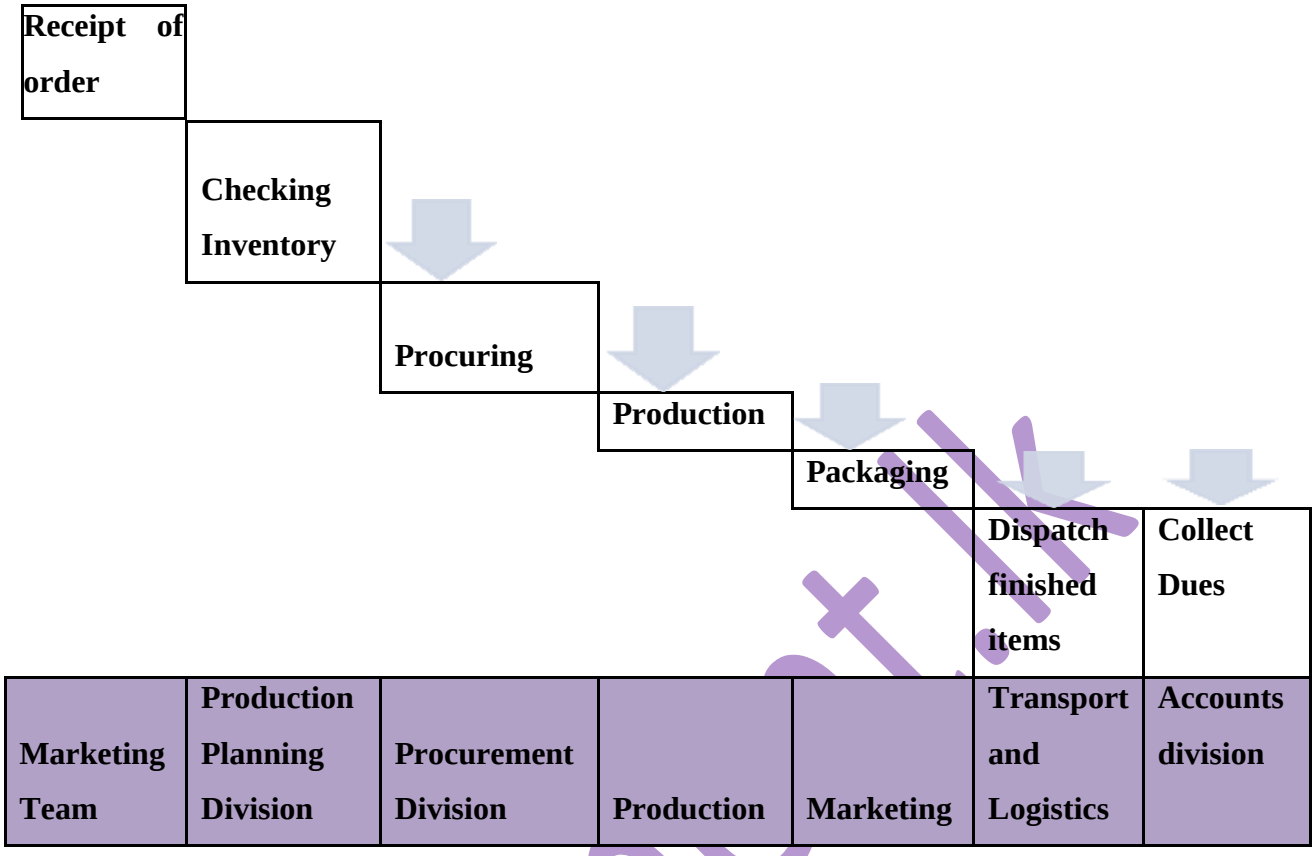


Figure 3 - Process of fulfilling orders

It is seen that the different departments at ABCare not equipped with many employees those who have the specialization in different component parts in the same department. Therefore there is much time consumption in conducting the process. This could be overcome by recruiting employees with necessary expertise in different functions of the same function.

Another drawback is that the inventory is not computerized and linked to a system. Hence, other than checking the availability of materials from written records, there should be a physical count in order to identify the materials that are not suitable for use, lost materials due to theft and damaged items etc.

This could be overcome by computerizing the materials in the warehouse with properly arranging them in the warehouse and by ensuring warehouse security. One of the most prudent methods would be to implement a Enterprise Resource Planning system which integrates all functional processes in a cohesive manner. This would be automatically updated with the issue of inventory and the production of cables. And once the goods are dispatched or finished producing, the invoice would be automatically sent to the customer according to

the details entered into the system. Hence it would be a solution to the time consumption in processing orders. (Jae, Siegel, 2005)

3.3Designing of new cables

There are certain cable types which are predesigned. But some customers order for different cables with different features and diameters which have to be designed by the company according to the requirements. Designing of new cables is the main responsibility of the production team and the finance manager would engage in the costing part of the cable with including the required materials, financial feasibility etc. Marketing team is informed of the required changes to the label that is fixed to the cable. Once the product development is finished, it would be sent to the production planning division for preparing the production schedules. (McLachlin, 2010)

This cross functional process too has several drawbacks.

The current process goes in an individualistic manner where each functional manager does his/her part and then submits to the production department head. There is always a barrier within two functions which embeds communication barriers as well as the lack of interpersonal skills, no blend of new ideas etc.

This could be overcome with the aid of a round table discussion where all managers of different functional fields get together and discuss the new product development progress. This would ensure the generation of new ideas and viewpoints irrespective of the functional specialization of managers and through which everybody can benefit.

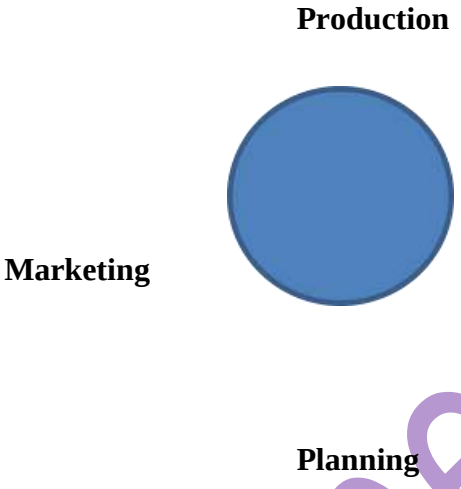


Figure 4 - Designing of new cables

3.4Process of updating the company website

At ABC Cables, the website is a major tool of offering contact details, information on products, advertising the products etc. Hence the website is of strategic importance to the company. Hence the website should always be up to date and reflect the organization promptly.

Maintaining the company website is costly to the company and making changes is much more costly. Web designing process at ABCinvolves several functional fields. Since the website maintenance has been outsourced to a third party, the company always has to think of the cost of making changes.

It could be recommended that the re evaluation of rejected proposals could be avoided in the below process if the company establishes a website designing team in house. Hence maintaining and updating would be the duty assigned to the new employee.

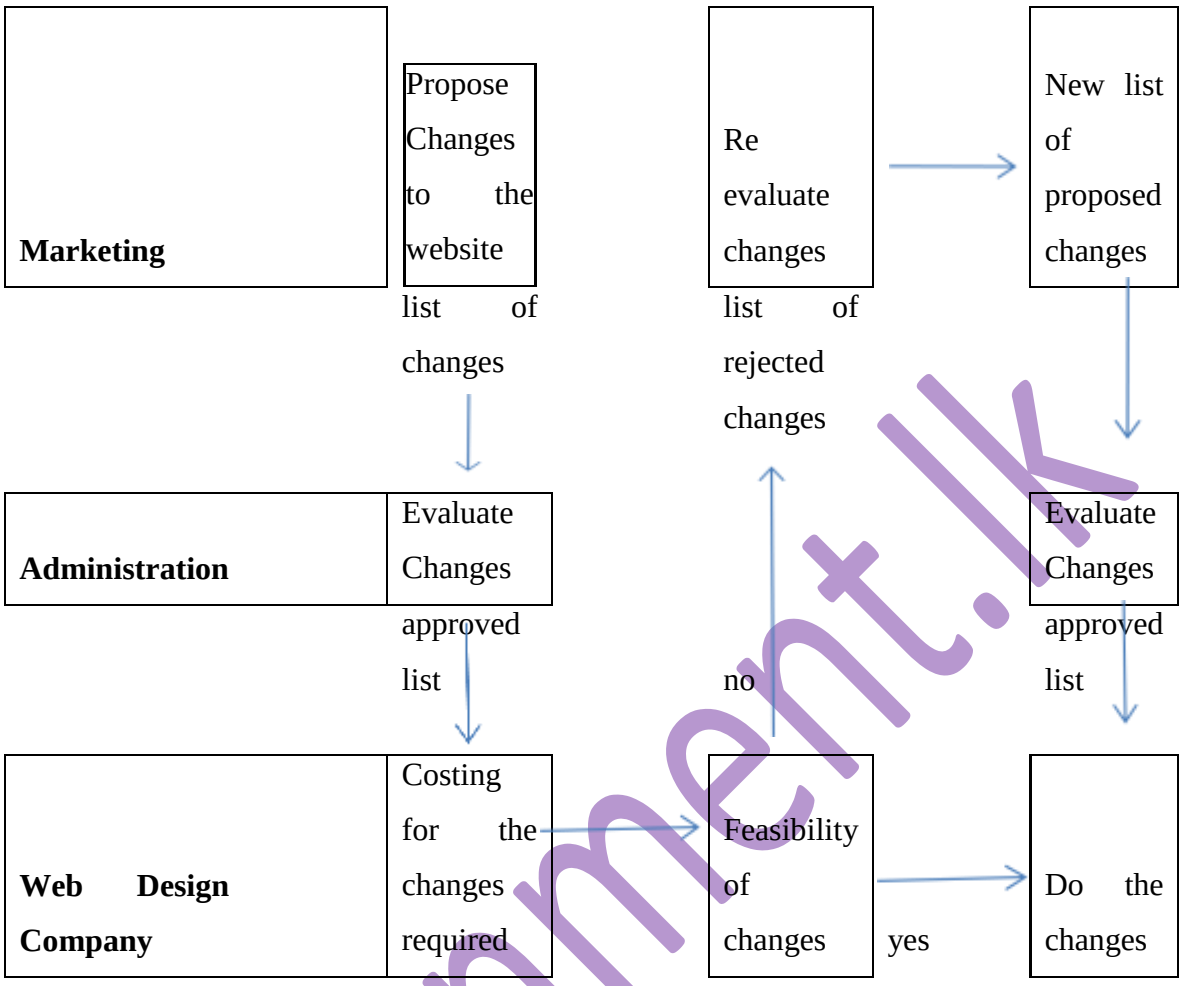
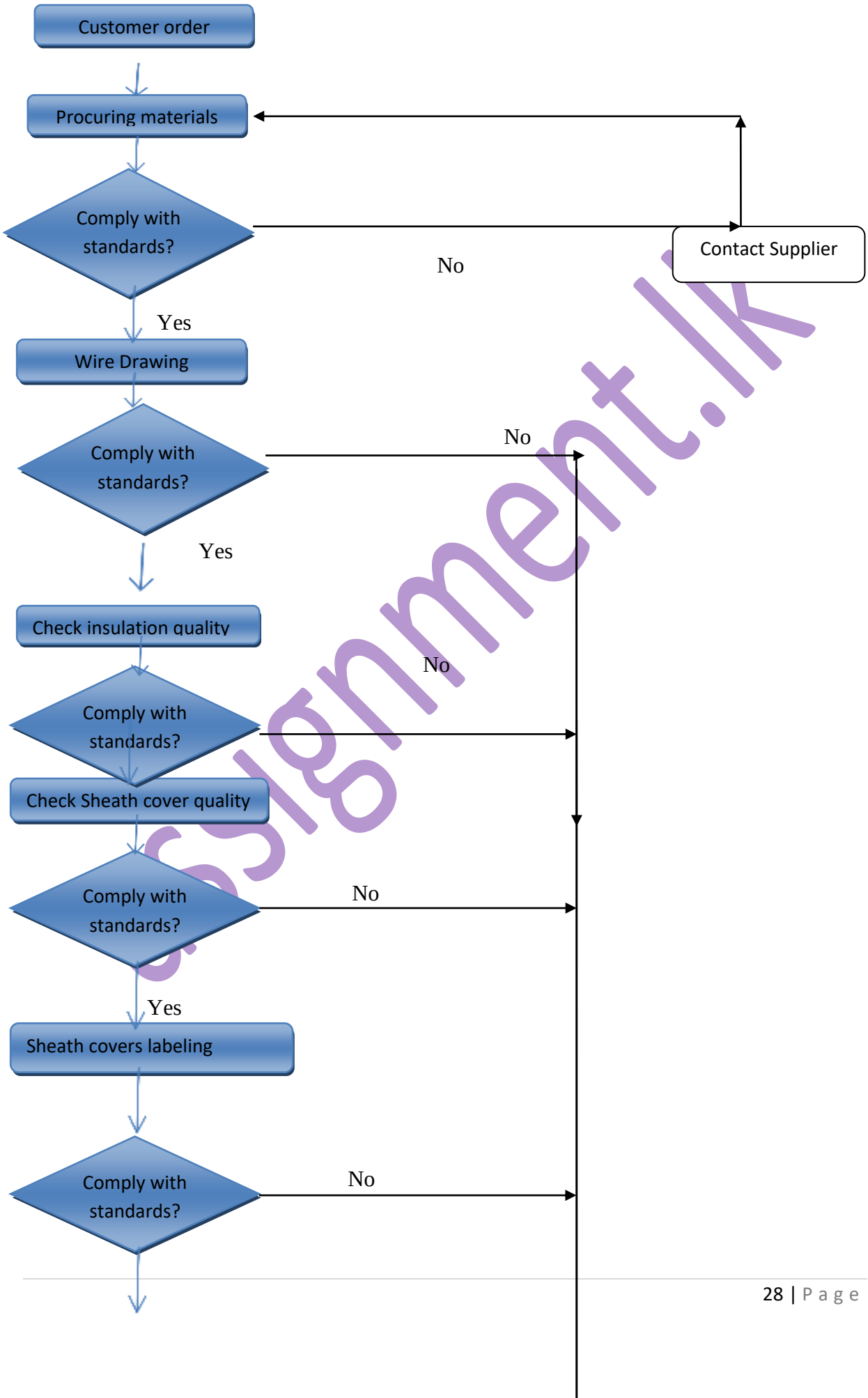


Figure 5 - Process of updating the company website

3.5Production Quality Checking Process

There is a concurrent quality checking process within the production process at ABC Cables. It is a cross functional process. The raw input copper is checked for its diameter with using the vernier caliber and then the tensile test is carried out. Purity of copper is tested with the assistance of National University in Moratuwa. Then the production process is searched for quality at differet stages by the quality supervisors assigned.

This process has several drawbacks. Sometimes, the faults in the production process would be tried to conceal with putting the blame on procurement division for obtaining low quality materials.This could be overcome with establishing a culture of quality where employees are free to meet each other and discuss their quality problems and take preventive actions without putting the blame on each other. (McLachlin, 2010)



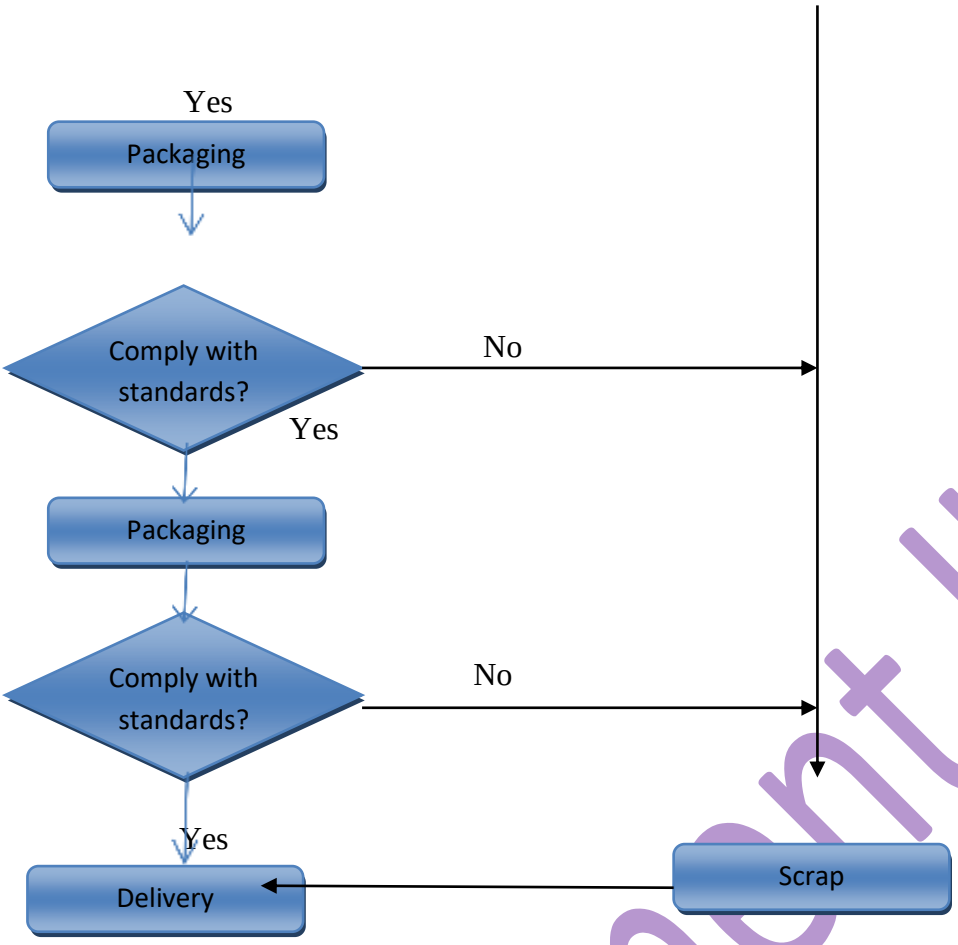


Figure 6 - Production Quality Checking Process

04. Process innovation and improvement

4.1Innovations

Companies in any industry should generate new products and services in order to fulfill the needs of the target customers in different ways. This would be a crucial factor behind the competitiveness among peer companies and to face the changing and challenging environment.

Innovations could be in different forms. Product innovations, process innovations, structure innovations etc. (Jae, Siegel, 2005)

ABCis into the production of cables and is highly process oriented. Innovative processes would be significantly advantageous in reducing costs, reducing time consumption, increasing time to market etc. And also new innovations mean development of the company which would ultimately benefit employees through increased financial performance.

4.2Total Innovations Management

Total innovations management refers to embedding creativity or innovations to the culture, systems that are currently in the organization, technology used, processes, structure of the company etc. and bringing in sustainability in the dynamic business environment.

In ABC Cables, TIM would be applicable because the company lacks the above mentioned innovative processes, innovative culture, technology etc. The employees are trained only to operate with the existing methods and machines. When the structure is concerned, there is minimal amount of bottom up communication of suggestions and ideas.

It could be seen that the communication pattern should be a dual sided process and the company meetings should encourage the lower level workers to rise up their views and suggestions in an effective manner. And also the recruitment policies should be focused on recruiting not the traditional minded people but to get people with new ideas and innovative thinking. (Jae, Siegel, 2005)

The tall organizational structure at ABCwhich creates a huge power difference between the layers should be revisited and should be made short as much as possible. This would result in re engineering the communication channels too hence increasing interpersonal skills.

Systems innovation would deal with re defining the existing systems in a new way such as creative rewards system, considering creativity in performance evaluation, training, promotions etc.

Technology Acquisition

The type of technology utilized at ABCcould be further developed based on the high standard technology that is used in global cable industry. The existing technology in the company consumes more time, labor involvement, etc. and hence not so cost effective.

The exposure to new technology with gaining the necessary specialist knowledge from abroad would prove to be a solution in the long run to the inefficiencies with the current technology. The existing workers must be trained and the existing covered culture should be influenced with highlighting the benefits of new change.

4.3Replacing Manual Processes

The introduction of computerized systems for replacing the manually operated processes such as the inventory counting, preparation of accounts in the accounting division, the hand post applications in recruiting etc. would bring significant time and cost savings due to reduction of documentary work and saving of energy.(McLachlin, 2010)

When considering the current situation, once a new order arrives, the inventory counting has to be done manually because the paper records do not capture the unsuitable materials in the warehouse because the poor structure lead to frequent theft and damages.

Conclusion

According to the analysis of the operations of ABC Cables, it was revealed that the company could be more effective and efficient with adopting to the industry quality practices such as TQM, Quality Circles, 5S etc. which has proven to bring positive results to the companies.

Certain problems related with the production process had been highlighted such as the improper scheduling of machinery maintenance, planning problems, poor factory facilities etc. These problems hinder the efficient execution of the production lines and hence badly affect performance.

According to the reengineering efforts extended at the cross functional business processes, several solutions such as the quality management practices, new recruitment policies, changes to facility layout, ERP systems would be effective. New management approaches such as total innovations management would help the company to create a competitive edge over competitors and to obtain cost advantages while empowering with profitability.

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