

The use of lean production



Executive Summary

Lean thinking was introduced in 1960 by the Toyota company as a scientific approach to identify and eliminate waste or non-value-added activities in an organisation through continuous improvement with the aim of creating value. This study relates the lean approach to a large bread manufacturing company, Warburton, located in Bolton, UK. It was introduced in 1876 and developed 5000 employees, 14 bakeries, 15 distribution depots and 900 delivery vehicles. With the introduction of the lean approach, the company achieved overall financial, social and environmental benefits. The company developed its own farming to produce wheat that generated 10% profit, new technology to stop the machine when the product is finished that generated 3 million profit, developed its own mill to turn wheat into flour that created 4 million profit, new ways of kneading and mixing and so on. To use the lean system they provided a high level of training and skill development to their employees and reduced them by 2%. Systematic use of JIT, 5S and TQM approaches enabled the company to maintain consistency, increase delivery speed, volume flexibility, low cost operation, high quality product, reduce waiting time and continuous improvement for long-term sustainability. The company got overall improvement in seeding, farming, milling, baking and customer satisfaction.

Chapter: One

Critically evaluate the use of lean production and /or lean services in your chosen organisation

Operations management is the systematic design, direction and control of the processes which convert inputs into services and goods where outputs go to internal as well as external customers. Input may be information, raw

materials or even customers. These inputs are transformed into goods and services by the help of transforming resources that may be facilities of the operation.

For this task, I have chosen the “Warburton Family Bakers” company located in Bolton, UK. Married couple Thomas Warburton and Ellen started this company since 1876. Now, it has around 5,000 employees, 15 distribution depots, 14 bakeries and 900 vehicles for delivery. Warburton is the second largest grocery brand company in the UK. It has more than 25% market share in their wrapped bread market which leads it as the market leader. The company, produce variety of bakery product as: Bread (white, wholemeal/brown, seeded/grained, deity, and healthy), Bakery snacks (fruited loaves and buns, and snacks) and 14 varieties of rolls. Every day, it produces 2 million baked and distributed all around the country. 400,000 tonnes of wheat being used every year which is equivalent to 14,000 lorry load. Mainly raw materials in this company are: best seed to grow wheat, natural resources to grow grain, ovens, mills, fuel, farmers, other employee, etc. For raw material, 5% of the wheat they buy from open market for rest 95%, they have third party contract over UK and Canada. Some farmers they have been closely working with Warburton’s more than 50 years. So they are providing quality grain particularly using less fertiliser to grow wheat.

Some people described lean simply as collection of tools such as Just in Time (JIT), Kanbas, 5S and so on. Other describes lean as, working people smarter, working people harder and Total Quality Management (TQM) or Kaizen.

These definitions are inadequate and inappropriate. So, lean systems can be defined as operations systems that maximize the value added by each of a

company's activities by removing waste and delay from them. (Krajewski, Ritzman and Malnotra: 2010, page 316).

The concept of lean system was developed from Japanese Toyota Company in 1950. Its main purpose is to reducing all kinds of wastes thought the organisation and achieves more. Toyota use this concept thought its operation and got very high profit. So, nowadays most of the companies are trying to reduce their waste implement this concept. Where, waste can be defined as any human activity which absorbs resources but creates no value. Main elements of lean production are Total Quality Management and (TQM) and Just in Time (JIT). The aim of JIT is to avoid duplication effort and reduce the holding excessive stock cost as holding huge amount of finish goods or components. TQM refers to make sure the quality of raw material or finish goods or whole organism which needs to satisfy customers need. Upgrading the value adding activity and reducing the non value adding activities gives the benefit thought the organisation..

Also we can introduce TPM (Total Preventive Maintenance) concept for Mills and ovens. Standardarization of wheat and shed, etc are regularly checked in order to prevent from waste and to increase quality. Sometime they need to replace or they may not work such that company may lose huge amount. If there is something wrong during the work, it may require double check leads us loss in the business. Principle of lean production includes communication, teamwork, efficient use of resources continuous improvement (kaizen) and result is reduce waste . Lean can be introducing in this Warburton to reduce waste in its all process (beginning to end) mechanism which can be shown diagramitally as:

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By the use of lean production, company can reduce different types of wastes and achieve high quality, sustainability, profitability and competitiveness by lowering overheads and unit cost. Customer loyalty is the most important which can be achieving by continuous improvement in goods and services. Producing high quality bread is the value for its customers. Warburton can reduce its non value added cost by lowering health and safety risks using renewable and alternative source of energy.

Finally, Warburton can use lean approach to generate more income from the following process:

Introducing own farming palant rather than imported from different suppliers, which can generate approximately 10% profit in the process of hiring raw materials.

Using less fertilizer and natural resourcss to grow the wheat. This leads to profit of 5% and increase the quality of wheat due to own plant.

Introducing new technology to increase oven insulation and gas burners which stop automatically when the product stops. This would be the main saving in the company. Roughly 3millions profit will generate form this.

Using own mills to turns the grain into flour rather than contracting to another supplier. This will save the cost of 4 millions.

Introduce new technology for kneading and mixing the dough which enable to make more elastic for right loaf. This new technology will generate 5 million profits to Warburton.

Proper implementing of above process warburton can reduce the employee from 5000 too 4900 making them trained , skilled and flexible workforce. This can save 2% of total cost of the employee. this is due to the introduction of new method.

Chapter Two

Discuss and recommend how waste is /can be managed along your chosen organisation's value chain.

Waste can be defined as wrong or unnecessary use of money, time, ability, substance, employee, equipment etc. In Warburton, waste can be identified by two ways. First, waste in company's overall activities as starting from raw material seeding to customer satisfaction which can be shown clearly from following diagram.

The aim of lean philosophy is to eliminate eight kinds of wast(shown below) , produce product and service only needed and regular improve value added activities of the operation. A JIT philosophy organises information flows, resources and decision rules that may able to give benefit to the organisation. Lean system looking continues improvement. In Japanese term continuous improvement is known as kaizan.

Main importantly the elements/tyees of waste can be shown by following diagram which need to reduce in warburton in order to generate more income.

Number of people/employee: we can reduce the employee by making more skilled, trained who can perform more. Also, machinery can be used which

can save more manpower. Flexibility and all round development of the employee, reduce the more workforces which can be saved.

Overproduction: produce the goods when order comes. If we manufacture the item before the order, it is problematic to detect defects which create excessive lead time and inventory.

Inappropriate processing: using costly and high capacity machine where simple machine could handle the same act. It spends more capital assets. Using smaller and flexible machine, which can save space and money.

Waiting: When the product is not in the process we waste time. Long production need to run where material flow and process are not linked well to each other, gives time to be spent waiting.

Transportation: material handling and excessive movement of product during process which may cause deterioration and damage of product quality for no significant customer value.

Motion: unnecessary bending, stretching, reacting, lifting and walking make waste of time so, Warburton need to reduce it.

Defects: as a result of quality defect loss of cost, rework, increase inspection, rescheduling effort, loss of customer, good will which all are non value added waste.

Inventory: Extravagance inventory hides various problems on consumes space, soap floor, inhibit communication and increase lead times.

Material Use: use the materials as required. Do not consume unnecessary, high capacity and use and throw materials.

Space: arrange the items well which enable the Warburton use the space properly. If the space is not used or need more space due to lack of arrangement, both of these cases are wastage.

-Warburtons need to buy their own farms because they can achieve more control over its methods of producing wheat and supply chain which are being used.

The production of wheat by their farms becomes cheaper and qualitiabale than external farmer.

Working effectively, they can reduce transportation cost.

They can reduce waste by using appropriate scheme of packaging.

Also delivering fresh item daily, regular ensuring the product deliver on time, reduce its carbon foot print and give information to retailers.

-mainly reduce the waste by implementing new technology as: by installing energy efficient hard dryers, less energy lighting as well as responsive light control which do switched on and off according to its need.

Warburton can save energy and fuel by home insulation or car sharing.

Also the concept of 5S is popular in waste management. In this Warburton 5S can be implemented as flows:

A method consisting of five practices in workplace as sorting, straightening, shining, standardising and sustaining which are conducive to lean production and visual controls. The systematic practices of 5s lead to achieve good lean system. 5s from an effective cornerstone of reducing waste and remove unnecessary tasks, materials, and activities. Effective practice of 5s leads us lowering cost; improve delivery on time, productivity, safe working place or environment, scientific use of space in the floor and higher product quality.

Chapter three

Evaluate the impact that your recommendation will have on your organisation's resources, and justify how your recommendation will ensure increased competitiveness, long term sustainability and corporate social responsibility.

Impact of my recommendation on warburton

Before lean

After lean

They have the contract to third party farmers to provide wheat. For that they are paying more.

Warburton have now using their own farms and farmers. So they achieve more control over its methods of producing wheat and supply chain which are being used.

Expensive and using fertilizer to plant wheat during its production, which is not good for health.

The production of wheat by their farms becomes cheaper and quality than external farmer

Old technology and big machine were used.

Introducing new technology to increase oven insulation and gas burners which stop automatically when the product stops.

They were contracted to third party millers to turn the grain to flour. So they are paying high cost.

They have own mills to turn the grain into flour.

The loaf and mixture were not perfect.

Introduce new technology for kneading and mixing the dough which enable to make more elastic for right loaf.

Use of more resource, capacity, employee, low quality product.

Saving cost by using less resource, capacity, employee for the same task and high quality product.

Also second impact on recommendation

After the use of lean approach Warburton got success in many aspects which can be shown by above table. Also the company need to apply following approach to increase its competitiveness:

Low cost operation: Warburton design all process effectively and rigorous analysis that address overhead, workforce, methods, rework or scrap, automated facilities that reduce the cost per unit product or service.

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Quality: delivering top quality product, high level customer contact and service, high helpfulness, availability of servers and courtesy. It requires high product features, greater durability and close tolerance from a manufacturing process.

Consistency: high level of monitoring and testing the items regularly, prevent defects and achieve almost same result over time without reducing the level of quality.

Delivery speed: design the process which reduces lead time through planning backup capacity cushions, using premier delivery option and storing inventory.

Development speed: introducing any new product or service very quickly.

Customization: different customers have different desire so Warburton can address to satisfy unique needs of customers by widening its variety of products and services.

Volume flexibility: According to the market fluctuation the company need to produce its product quickly. Sometime such as Christmas and New Year the market demand is high so it may require more goods and services.

Warburton being one of the largest market leaders, it requires to supply regularly high quality bakery product. For this, Warburton need to focus on innovation and continuous new product development. Warburton can gain long term sustainability by managing its supply chain to meet its customers need. Also it needs to establish good relationship with millers and farmers to

supply quality product for long term. So, Warburton need to take as key factors for following for its long term sustainability

For corporate responsibility:

Warburton Keep employee safe as well as provide opportunity for learning and development.

Warburton helps the customers to be healthy and environmentally friendly choice.

Manage stewardship supply chain sustainability and ethically.

Warburton minimise the impact of business on environment and also help to alleviate climate change.

Warburton using the energy more efficiently, this helps to manage CO₂ emission.

Warburton reduce the use of paper, stationary and printing and increase recycling.

Warburton do not compromise for quality which is health.

Making work place safe and personal well being.

Warburton can save energy and fuel by home insulation or car sharing.

Waste to landfill, use of energy during production, use of water during production, levels of packaging to consumer, impact of transportation

Benefit of lean approach

Remove all kinds of duplication and waste.

Centralise on improving productivity, quality of service and speed of addressing of customer need.

Provide proper training to staff, motivate and involve them, by encouraging such that they take ownership for further improvement. As a result Warburton enable to cope on value adding activities. Practice of new culture as performance management and continuous management provide sustainability.

Warburton reduces in manufacturing time.

When the manufacturing time is reduced, the operation time and cost is increased by saving utilities, energy, wages of labour, etc.

It helps Warburton to maintain, retain, increase saving and widen its margin and help it to generate saving from lowering the cost.

Making the floor neat, clean, spacious and peacefulness, leads to avoid unnecessary accidents.

Human resource and labours are significantly lowered.

From the above practice, increase the productivity and customer satisfaction results sales will increase.

Good customer and client relationship

Chapter four

Using porters value chain as a template, create a framework that will assist a newly employed fist line manager in your organisation with the following:

a. Identify the types waste in both primary and support processes.

b. The danger ‘ signals of each waste’.

c. How to respond to the ‘ dander signals’<http://www.themanager.org/models/ValueChain-Dateien/image002.gif>

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Waste related to support activities:

Infrastructure: It is the set activities as general management, accounting, planning, quality management and legal government affairs. So the Warburton need to minimise the waste related to infrastructure.

Human resource: human resource management includes recruiting right people; provide proper training, development, incentive such that they can handle their tasks more effectively and scientifically. So Warburton can reduce the cost to pay more employees. This is the most important part of the organisation because employee handles all the activities in the organization so the wrong process of recruitment leads the loss of business.

Technology related waste: Mainly reduce the waste by implementing new technology as: by installing energy efficient hard dryers, less energy lighting as well as responsive light control which do switched on and off according to its need. Working effectively, they can reduce transportation cost.

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Procurement related waste: procurement refers to the act of purchasing items/inputs used in the firm's operation process. It includes raw materials, machinery, office equipment, lands, building, etc. Warburton need to buy their own farms because they can achieve more control over its methods of producing wheat and supply chain which are being used. The production of wheat by their farms becomes cheaper and qualitiabale than external farmer.

Inbound related waste: these are the wastes related to storing, receiving and diffusing input as wheat and flour into product process such as warehouse, material handling, vehicles scheduling, inventory control and returns to suppliers. -working effectively, they can reduce transportation cost.

Operation: packing, oven and mills maintenance, testing and printing are common waste of Warburton.

Outbound logistics: collecting, storing and distributing the finish goods to the buyer. In Warburton 900 vehicles can be effectively use to deliver their goods to the suppliers and the customers.

Marketing and sales: quality product reduces its marketing waste because people search quality product not advertises products. Online shopping rather than store shopping so, promote online shopping. Reduce more advertising.

Services: long time to delivery, long times to change the defective items, product adjustment, etc are the related waste in service.

Also the primary and secondary waste involved in the process of following fist two figures and third is the result of primary and secondary processes.

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