Case study of kaizen

Business

The emergence of high wage jobs and a shortage of young workers due to the low birth rates in Japan in the previous two decades ere the primary reasons for this. The number of women and aged people was increasing in the country labor pool. These people avoided heavy manufacturing work. Toast’s strong focus on Improving productivity and production efficiency over decades had created strained work atmosphere as the workers were reportedly ova ere burdened. This led to an exodus of young workers from the company. In 1990, around% of newly hired young workers left the company in their first year itself.

To deal with the labor shortage problem, Toyotaemployed many temporary workers in the assembly plants. The ratio of temporary workers in the workforce soon reached more than 10% -some work groups had around 75% temporary workers. As these temporary workers weren’t adequately trained, the annual working hours of the company increased, while productivity decreased Further, according to analysts, Toyota management’s focus on increasing production efficiency by achieving higher production levels with less number of workers resulted in Increased stress for the workers. This also played a major part in the worker exodus.

Toast’s problems Increased with by the global upsurge In car demand urine 1987-1991 because of which the demand for labor shot up.

As high wage jobs were easily available to the limited pool of young male workers, many Toyota workers began to leave the company. To handle the crisis, Toyota radically changed its production management and human resource management practices. The company decided to change its

working conditions to attract high school female graduates and workers over forty years. Toyota realized that It would have to rely on Kamikaze for modifying Its existing assembly lines to attract t worker.

Toast’s history goes back to 1897, when Chichi Toyota (Chichi) diversified into handloom machinery business from his family traditional business of carpentry.

H founded Toyota Automatic Loom Works (TALL) In 1926 for manufacturing automatic looms. Schlock Invented a loom that stopped automatically when any of the threads snapped I Nils concept AT selling equipment to stop so Tanat detects could D immediately formed the basis of the Toyota Production System (TAPS) that went on to become a major factor in the company’s success. N 1933, Chichi established an automobile department within TALL and the first passenger car prototype was developed in 1935. Chichi’s son Chicory Toyota Chicory) convinced him to enter the automobile business. After this the production of Model AAA began and Toyota Motor Corporation was established in 1937.

Chicory visited theFordMotor Company in Detroit to study the US automotive industry. He saw that an average US worker’s production was nine times that of a Japanese worker. He realized that the productivity of the Japanese automobile industry had to be increased if it were to compete globally.

Back in Japan, he customized the Ford production system to suit Supermarket.

He also devised a system wherein each process in the assembly line f production would produce only the number of parts needed at the next step on the production line, which made logistics management easier as material was procure disaccording to consumption. This system was referred to as Just-in-Time TOT) within the Toyota Group. The KIT production was defined as ‘ producing only necessary units in a instrumentality at a necessary time resulting in decreased excess inventories and caseworker’s, thereby increasing productivity. Chicory realized that by relying solely on the central planning approach, it would be very difficult to implement KIT in all he processes for an automobile. Hence, TAPS followed the production flow conversely.

People working in one process went to the preceding one to withdraw the necessary units in the necessary quantities at the necessary time. This resulted in the preceding process producing only quantities of units to replace those that had been withdrawn. Toyota flourished during the Second World War by selling trucks and buses to the army and the company launched its first small car (AS Model) in 1947.

After the war, the company faced a series of financial problems. A financial support package from consortium of banks (after he intervention of the Bank of Japan) helped Toyota tide over its problems. The package consisted of a series of steps that included downsizing and restructuring the company into separate manufacturing and sales divisions.

As per the revival package, The Toyota Motor Sales Company Ltd. Was formed in 1950. In the same year, Chicory resigned. By 1952, Toyota made a

turnaround and in 1953, the company appointed distributors in El Salvador and Saudi Arabia and started exports.

Meanwhile, Tactics Non (Non) took charge of the company.

In 1957, Toyota entered the US market through its subsidiary, Toyota Motor Sales, USA. In 1959, the company began its first overseas production in Brazil and over the next few years, developed a vast network of overseas plants. Besides manufacturing, Toyota started a global network of design and Research and Development facilities covering the three major car markets of Japan, North America and Europe. By the early sass, Toast's sales exceeded that of Chrysler andVolkswagenand its production was behind that of only General Motors (MM) and Ford.

Toyota continued testifiers to make its production system more efficient and also developed flexible manufacturing systems.

It also began to tap the markets in the Middle East and by Il/ten layout corolla, (launched In AY) Decade ten largest selling car In ten world. Minion, Toyota entered into a Joint venture with GM and established the New United Motor Manufacturing Inc. (ANNUM). By the early sass, as Toyota expanded its overseas operations, the excessive capital spending affected its profit margins.

Tasters Toyota (Tasters), who took over as thecompany President in 1992, began to control costs by eliminating all unnecessary expenditure.

In 1995, after Tasters resigned due to health reasons, Hiroshige Gouda Gouda) became Toyota president. In 1996, Toyota consolidated its

production in North American production units into the Cincinnati based Toyota Motor Manufacturing (North America). Len 1999, Gouda replaced chairman Choroids Toyota and Fuji Choc (Choc) became the president. In the same year, Toyota listed its shares on both the New York and London stock exchanges.

By the end of 2001, the company's net income had reached $5, million and net revenue reached $106, 030 million (Refer Exhibit I for the company's financial performance over the years). According to analysts, Toast's success in both the local and global markets as mainly because of its state-of-the-art and well-planned operational strategies.

The company had continuously focused on gaining a competitive advantage through implementation of innovative and path-breaking ideas on its production floors. TAPS worked on the basic idea of maintaining a continuous flow of products in factories in order to flexibly adapt to demand changes.

The most important feature of TAPS was the way it linked all production activities to real dealer demand through implementation of Kanata, KIT and other quality measures that enabled Toyota to manufacture in low quantities. ABOUT KAMIKAZE & THE TOYOTA EXPERIENCE Under One's guidance, Toyota adopted many operational practices that later became benchmarks for production practices across the global corporate world. It was one of the first companies in the world to adopt practices such as Kanata, 1 [1]Kodak2[2]and KIT.

However, Kamikaze kept TAPS, KIT, Kanata, and Kodak working smoothly as an interlinked 1 [1] Tactics Non devised the Kanata system based on the

American supermarket system to manage KIT production. It can be defined as an information system to control the production quantities in every process. In this system, the kind f units and the number of units needed are written on the Kanata jacaranda sent to the people of the preceding process from the subsequent process. 2[2] Kodak involves designing machines with an in-built capability to detect any faults in the product as soon as they occur and respond suitably.

Strategic operational plan. Some analysts even felt that Kamikaze was the major contributor to the company's global success.

The founder of the Japan-based ' Kamikaze Institute,' Miasmas Imam, defined Kamikaze in his book, ' Kamikaze – The Key to Japan's Competitive Success' as, " Kamikaze means continuous improvement in the personal life, home life, social life and irking life. " When Kamikaze is applied to the workplace it means continuous improvement for – managers and workers. Thus, Kamikaze involves everyone in an organization to make improvements Without large capital investments. It can be seen as a culture of continuous sustained improvement focusing on eliminating waste in all systems Ana processes. I en Kale strategy Deigns Ana ones Walt people.

Kamikaze, an involved leadership guides people continuously to improve their abilities to meet high quality expectations, low cost and on-time delivery, which in turn helps the organization gain a competitive edge. The two most important elements of Kamikaze are – improvement/change for the better and ongoing/continuity. If either of these elements are absent, then a concept cannot be considered as Kamikaze.

Kamikaze’s concept was based on the belief that a days should not pass without some kind of improvement in the company. One of the pre-requisites for the implementation of Kamikaze in organizations is that the top management should improve and change the way it deals with employees. The Kamikaze philosophy cannot be easily implemented in organizations where the culture to adopt to change is not present (Refer Table I for the pre-requisites for implementing Kamikaze in organization).

TABLE 1 Pre -requisites for kamikaze Discard conventional fixed ideas.

I Think of how to do it, not why it cannot be done. I Don’t make excuses. Start by questioning current practices. I Don’t seek perfection.

Do it right Away even if for only 50% of target I Correct it right away, if you make mistake I Don’t spend money for Kamikaze use your wisdom. I Wisdom is brought out when faced with hardship. I Ask WHY? Five times and seek root causes. I Seek the wisdom often people rather than the knowledge of one. I Kamikaze ideas are infinite. I Non was a great believer of the Kamikaze philosophy and initiated it at Toyota in the aryl sass.

Non laid great emphasis on improvement of production processes to increase efficiency and reduce waste irrespective of the fact that the tasks were small or major. About seven types of wastes were identified at the company in this context (Refer Table II) TABLE 2 Seven types of wastes identified at Toyota: Over production ahead of demand I Idle time I Unnecessary movement of materials and products I Over processing Excessive inventories I Unnecessary movement of people I Production of

defective parts I I Kamikaze activities at Toyota were largely aimed at eliminating these wastes and ere practiced in a two-pronged manner.

This consisted of Kamikaze as implemented by the supervisory staff and engineers; and Kamikaze as implemented by workers through. Quality Circles 3[3] And a suggestion system. The latter was followed globally with many companies in the West reaping Kamikaze benefits through voluntary worker participation.

But Toyota realized that its economic gains namely cost reduction and increased productivity, came because of the former. Prior to 1990, the Toyota management set a target cost for each part and standard time for their production and shop floors through

Kamikaze to meet the time and cost targets . Group leaders, chief leaders and engineers were responsible for implementing Kamikaze in the production phase and it was called organizer Kale. ‘ A product manager or a cancel engineer along Walt ten eagles engineers worked on the new product designs. The design stage started with the product manager fixing a product plan and setting target costs.

The design engineers designed the parts and components of the vehicle to meet the above set target costs.

After the design was finalized, the cost arrived at became the referential cost of the product. The production-engineering division then planned the final assembly line as per the budget constraints. In the production phase, for the first few months, the target costs and standard time were usually not met –

as the workers were not used to the new system. If the work group failed to achieve the referential cost even after three months of mass production, then the Kamikaze activities were pursued to increase the workers' efficiency to achieve the target costs.

Even if the work group achieved both the referential cost and the standard time, Kamikaze was used to reduce both further to increase productivity. To reduce the material costs involved in the production ' cost councils' were set up. The management tried to reduce labor costs by fixing an amount to be reduced by balkanization activities. Though the responsibility of these Kamikaze activities was wit h director of the Production Division, a cost council meeting was held every month to manage results of Kamikaze as well as to discuss the various measures that needed to betaken. Ender Kamikaze costing, costs were controlled through a division of responsible attestations group leaders, chief leaders and engineers. The group leaders were in hare of reducing the time taken by the workers by improving their operating process.

Their main task was to establish standard work and standard time and the line stop system (stopping assembly line when a problem was found and sorting out the same) was used. Quality Circle comprises employees who meet regularly to discuss quality related work problems so that they may examine and generate solutions to those problems.

Quality circles are empowered to promote and bring the quality improvements through to fruition Autonomous study groups were formed to discuss these problems and the various measures to solve them. The chief

leaders were engaged in reducing the standard time of their working unit by means of process improvements for reducing the workers in their unit. The reduction of workers from the production line was called ‘ Shaking.

‘ This was an important method at Toyota for increasing production efficiency and decreasing labor costs. Try Teams’ were formed comprising skilled workers, whose main responsibility was to measure the time necessary for installing the parts in a car body through trying production’ off new car before launch of its mass production. This try team was involved in the Kamikaze activities of the assembly nine in close co-operation with engineers. Another important aspect in the management of labor costs at Toyota was that it was calculated on the basis of production efficiency.

Production efficiency was defined as the inverse of the ratio of the real working hours necessary to produce the products within their standard time. It was calculated as Tools (Standard Time) x (Production Volume) Production Efficiency Real Working Hours of Working Group Only defect-free products were considered in the production volume and workers had to maintain the quality of products to increase production efficiency.

As and when defective parts were found, suppliers were notified and their engineers were asked to verify and solve the problem.

If the production line was stopped, the supervisory staff was forced to revise the standard tasks after verifying the cause of delay and Kamikaze was used to improve the working process of the production line. According to production efficiency, work groups were classified into four levels A, B, C, and D. A standard time cutting rule was implemented according to which the

standard time was reduced for the work groups, which were classified higher. This arced the working units to keep improving their production efficiency through Kamikaze. Toyota placed the responsibility for improvement in the hands of every worker.

Each worker was expected to question every process and test all assumptions. Errors werewolves as learning opportunities and the top management encouraged workers detections problems as challenges and to look harder until they found something attended to be fixed. Apart from the Kamikaze activities, voluntary practices at Toyota involved the team members through: Encouraging an active role in quality control. Utilizing employee ideas and opinions in production processes. Encouraging the practice of Kamikaze in every work sphere . N the production line, the team members treated the next person on the production line as a customer and so did not pass a defective part to that person.

If any worker found a problem with a part or the automobile, the line was stopped and the problem corrected before the vehicle moved further down the production line. Quality Circles and the employee suggestion system, which rewarded employees for ideas, played an important role in the Kamikaze at Toyota. It was reported that more than, OHO employee suggestions were accepted each year and some individual tea members gave more than 1, 000 suggestions.

At Toyota, each team member was a quality inspector and any time during the production process, whoever spotted a problem could stop production by pulling the ‘ Anton cord 4[4] ‘ located next to the assembly line. Anton

allowed the supervisor to locate the problem with a blinking light and a distinct musical tone. This helped in solving the problem immediately.

Toyota became famous for its operational excellence as it continued to f cuss improving the TAPS and implementing tools such as Kamikaze, Kanata and KIT over the decades, Toyota became world-renowned for its operational excellence.

The two most gallants Detentes AT tense Annihilates were noun and efficiency. Teal enhance quality A tool of visual management, originating from Japanese for ‘ lamp. ‘ In Anton, lights are placed on machines or on production lines to indicate operation status. Commonly color-coded green (normal operations), yellow (changeover or planned maintenance), and red (abnormal, machine down).

Often combined with an audible signal such as music or an alarm. Also, the manufacturing methods were flexible enough to adjust to fluctuations indeed and. The company also saved a substantial amount through cost savings.

The company saved around 10 million yen as cost saving through quality initiatives in 1993, which increased to 107 million yen in 2001. The company also won numerous quality awards throughout the world.

Its vehicles were consistently rated near the top in third-party customer-satisfaction surveys across the globe. Many companies throughout the world adopted Toast’s quality, productivity, management, and employee relation standards. According to a census f manufacturers conducted by Industry

Week, many world- class plants have adopted KIT, quick-changeover techniques, Kanata and other methods that Toyota used.

Though ‘ organized Kamikaze’ worked well for a long time, the labor crises in the early sass made Toyota realize that it needed to adopt a new approach. The company began an exercise to modify the way it implemented Kamikaze to attract workers by making its assembly lines more ‘ human-friendly. ‘ THE MODIFICATION The modification began with the management deciding to allow plants to set their own annual production efficiency targets.

The production divisions council, which checked the plants objectives occasionally modifying them, taking into account the company’s profit targets, replaced the production allowance councils.

After approval, these objectives became the Kamikaze norm of each plant in terms of production efficiency. The method of determining the production efficiency was altered to make it electrification’s as the standard time was fixed by measuring the time really required for worker’s operations whereas earlier standard time was fixed on the basis of the best standard time marked in the past. The try teams started considering the working segments where young female workers and aged workers were employed for fixing the standard time.

Prior to the sass, the try team used to consider only skilled male workers for fixing the standard time. The standard time was fixed on the basis of the best standard time marked in the past, while after modifications it was fixed by measuring the time required for worker’s operations three months after launch of mass production.

After negotiations with the unions, the management decided to reduce the long annual working hours and the method T calculating ten production allowance was altered Tort Ole collar workers Ana removed for white collar workers.

The production efficiency was now determined with respect to the activities of all workers including permanent employees, workers in Kamikaze groups and maintenance team workers while earlier only permanent workers were considered for this category. The production efficiencies were classified through a group of homogeneous factories such as a group of foundries, forges, and stamping and sheet metal shops because of difference in the mechanization level among them, which affected the productions mince.

The production efficiency of all workers within the group was classified into three levels A, B and C to determine their production allowance. The method of work in the assembly line was revised to reduce the high turnover rate and also to enable young female workers and aged workers to work there.

The production engineering division developed the Toyota Verification of Assembly Line (TVA) to measure the workload of all operations. Those operations whose TVA value was higher than a certain level were discontinued as they were considered as heavy operations.

After concussions with workers, the assembly line was divided into 10 segments with every worker having a ‘ buffer’ work corresponding to five minutes of operations so that even when work was stopped in one segment because of a problem, the others could continue to work. The buffer reduced the workers idle time to a large extent as the loss of time when work was

stopped in a segment. The assembly lines at various Toyota plants were reorganized by organizing engineers, try team’ staff, chief leaders and group leaders so that they could collaborate to have an ideal assembly line about which no on had any clear conception.