

# The u.s. stroller

Business



Recently, profits are down and competition is entering the market that the company dominates. Proposals have been made to go to a SIT production system or to a Cell approach for production.

The purpose of this case is to show how a batch system can be dramatically improved by SIT or Cellular concepts.

The case clearly describes the changes that must be made in the production system to achieve the benefits sired. This amounts to a complete change in layout of the production floor and a substantial overhaul of the MR. system.

The case nicely ties together some of the material from the text on SIT, GET.

EX. and MR.. Company background U. S Stroller is a leader in the production and sales of baby strollers in the United States.

It is well known for its innovative design and its good distribution system.

There 2, 000 different sites in the U.

S to distribute company products and has been a market leader for over 50 years. At the present time it conquers 40 percent of the market. U.

S Stroller started its business in 1934 with the introduction of the regular model which sells at \$ 49 retail. In 1955, the company introduced a deluxe model which sells at \$ 99 retail and in 1974 it introduced its shopping centre stroller which sells at \$ 149. The company is currently selling 106, 000 units per year of the three types of strollers with the sales approximated at \$ 4. 5 million per year.

The gross profit is 25% of sales and the net profit for the fiscal year is 2% of sales.

Its inventory turnover is at 2.4 times per year and the company has earned a 3% on net assets on an after tax basis and also 8% on Wiener's equity.

Problem Statement Cell Hawkins, Director of Manufacturing of U. S Stroller is tasked by his sister, Judy Hawkins, President of the company to take closer look at the plant and check on and check on how to go about to implement SIT. Question 1: Evaluate the current situation facing U.

S Stroller. None yet, but financial results are poor based on percent of sales and return on equity. Also, Japanese competition is coming. Even though U. S.

Stroller still commands the dominant share of the market, they are vulnerable on both quality and cost grounds. The Japanese are following a typical Japanese strategy by entering the market with a high quality stroller on the low end of the market. The Japanese can be expected to come after U. S. Stroller directly after gaining a foothold in the market. U.

S. Stroller cannot delay making improvements, until after they have lost market share.

They must improve now in order to pre-empt the competition and to improve profits in the face of probable price erosion. There should be a sense of urgency in making drastic improvements in order to protect their market share. Some changes should be made, assuming U.

S. Stroller wants to survive in the long-run. Question 2: Discuss the pros and cons of the options presented in the case. Option 1: This option proposes putting in three final assembly lines and dedicating various pieces of equipment to each of the three stroller models.

A JIT pull system will be put in place, setup time will be reduced, and smaller lot sizes will be used. Pros Option 1 reduces inventories by the following amounts Change Inventory Savings (\$) Finished Goods from 80 days to 22 days (l) 765, 000 to 210, 000 Work in Process from 4 weeks to 2 weeks 22, 000 to 161, 000 Raw materials from 12 weeks to 2 weeks 337, 000 to 56, 000 1 The case says finished goods will be 15 to 30 days which is an average of 22 days The Savings in inventory will improve the balance sheet and return on investment.

In addition the annual savings will be 25% of the inventory reduction or a total savings of \$249, 000. In addition to the above savings, U. S. Stroller will achieve a shorter response time for customer orders. Customers will be able to order with a 2 week lead time instead off 4 week lead time. While U.

S. Stroller has been supplying the customers from its finished goods warehouses, the shorter lead time will provide advantages for promotions, special orders or other customer changes. Option 1 will also improve quality through faster correction of problems in the plant.

This will not only result in less rework and scrap, but will result in a better product being delivered to the customer. If the cost of quality, for example, is 30% of sales at U. S.

Stroller and is reduced to 20% of sales, a savings of \$456, 000 per year will be realized. Thus, the quality savings could be even greater than the inventory savings. Of course, quality can be improved without SIT, but the two approaches reinforce each other. Cons amount of time and other costs (including training, lost production time during changeover, management time, etc. ).

Nevertheless, these costs could be paid off in one or two years depending on what savings are assumed for quality improvement, and inventory reduction. The effort in implementing Option 1 should not be underestimated. Top management will have to be involved, everyone will have to be retrained, a lot of changes will be needed in procedures and systems by all departments. If this is not done with a careful and dedicated approach, a con could be failure to achieve the promised benefits of this option or failure of the effort. Another con is the loss of flexibility in option 2.

Since equipment and final assembly lines are dedicated, changes in final demand cannot be easily handled.

You cannot simply shift over from one product to another. One part of the plant could be put on overtime, while another part is idle, unless you have very high worker cross training. A second shift may even be needed in one part of the plant while other workers are on one shift. This can cause problems with the work force and is a result of the loss of flexibility. Option 2 : Cellular Approach This option involves setting up a separate cell for each of the three products.

Some additional equipment must be purchased because of the indivisibility of equipment and people must be dedicated to each of the product lines.

Pros The Pros are the same as option one except things are carried one step further. Assuming all inventories can be reduced to 1 week, this option will reduce finished goods inventory from \$210, 000 to \$67, 000; work-in-process inventory from \$161, 000 to 80, 000; and raw materials from \$56, 000 to \$28, 000. The annual savings of these reductions is an additional \$62, 000.

Option 2 will also improve quality even further because of quick visual feedback and cell stoppage when there is a problem. Further savings of as much as \$450, 000 per year can be realized if the Cost of Quality is reduced from 20% to 10%.

The response time (lead time) of this option will be reduced to one week and could be even shorter if suppliers are located close by. This option will cost more (\$1 50, 000 for additional equipment over option 1) plus there costs of moving equipment, training, etc. Nevertheless, this option would probably be attractive as an investment proposition because of relatively short payback.

The cellular approach results in even less production flexibility, because workers and equipment are totally dedicated. Thus the company must have confidence that demands will not fluctuate too wildly from week to week.

The case indicates that weekly demand fluctuates 25% from averages. This amount of demand change could certainly be absorbed by safety stock. But the presence of safety stock introduces more costs into the system. Question 3: What will be the impact of these options on the MR. System currently in use? The MR. system will have to be dramatically changed.

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In both options a pull system will be used, so that MR. cannot be used to control the shop floor. The most that MR. could be used for is for “ Major Event Planning”. In this case orders would can be useful as a planning tool, but not for control of the actual production process itself.

Major event planning implies a skeleton (Type I) MR. system. The master schedule for a few weeks in advance (say 2 to 4 weeks) would be exploded through he bill of materials and planning orders would then be given to work centre supervisors and suppliers for planning purposes only.

The actual order to produce will come from the Kanata Pull system that is dependent on what is happening on the shop floor. MR.

could be scrapped altogether, especially if U. S. Stroller believes that schedule changes will be minimal. If approximately the same amount is produced from week to week and there are few engineering change orders, there is really no need for MR.. Any changes can be “ manually” exploded and advance deices sent to suppliers and work centers, especially for the simple product line at U.

S. Stroller. Question 4: What option do you recommend and why? We recommend that the company proceed with Option 1 and then move to Option 2, if demand and product changes are relatively stable. It appears in this case that Option 1 can be financially justified and that substantial benefits will flow to the company in profits, balance sheet improvements, and in holding market share. After implementing option 1, they will have time to evaluate whether a further move to option 2 is also desirable.