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Major Case Analysis

Integrative Case 6.0: Lean Initiatives and Growth at Orlando Metering Company

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1. Problem Statement

Orlando Metering Company (OMC) was a leading manufacturing company which was specialized in the assembly, testing and repair of water meters used to measure the amount of water consumed by private homes, organizations and large cities. The company was originally founded in Orlando, Florida in 1974. PMG group, the parent company of OMC based in Europe was seeking growth opportunities in United States. OMC's product offered a new technology that solved issues with traditional meters. The new meters were accepted by many markets and the company had grown since then.

Ed Cucinelli was the vice president of the OMC and was a mechanical engineer as he started his career fresh out of college at OMC in 1993. Parent company of OMC was acquired by its competitor and the board of directors decided to pursue lean manufacturing culture at OMC. Lean manufacturing is a systematic process for waste minimization within a manufacturing system without compromising on productivity. Orlando plant was chosen by board to implement lean manufacturing process and the board decided to implement the project in nine-weeks. Ed was given the responsibility to implement the change in manufacturing process according to the lean manufacturing procedure. To implement this change, training was given to the employees and the teams could see the results. After 18-month implementation cycle, the employees and leaders had succeeded in establishing the lean showcase at OMC.

Implementation of the lean change was successful, and the success can be seen in a case where an hourly employee gives a presentation to a Vice President of Operations of another facility.

In 2001, board decided to relocate four new product lines from a sister facility to OMC. Ed was promoted to VP Operations and he had 18 months' time to implement this change. Ed and his leadership team completed the project in 20 months and OMC achieved a significant savings in labor, floor space and process times. However, the success was short-lived, as the lean culture had deteriorated, and the team-based structure no longer existed at OMC. Turnover in the organization had risen to alarming numbers and absenteeism rates were also very high. This instability has impacted the quality of the products and on-time deliveries, and as a result there had been an increase in the number of customer complaints.

2. Problem Analysis

Ed Cucinelli and his leadership team was successful in implementing the change at small scale at Orlando but failed when they applied the same change at a large scale. When Ed lead the team to implement lean manufacturing at Orlando plant both driving force and restrained force worked in favor of Ed.



Figure 1:A force field analysis diagram shows the forces in opposite directions

As per Kurt Lewin's force field analysis driving force promotes the change and restraining force hinders the change. When Ed implemented the lean concept change at Orlando plant, employee loyalty to the company acted as the driving force for the change. At this point of time many of the employees at OMC had been with the company for nearly 10 years. Employees knew each other, and each other's families and

they felt a sense of responsibility towards their colleagues. Even though OMC did not have the best tools, they offered a compensation package that did not exceed the market average, and ran without air-conditioning, the employees felt that they belonged to something special. Employees quickly realized that small Orlando facility would be closed and relocated to one of the larger sister facilities if the change was not successful. All these factors worked in favor of Ed and there was minimal resistance force for the lean change.

The employees and the leaders worked together to transform the company into a lean showcase. One of the critical elements to the successful implementation of a lean environment is the development and maintenance of self-directed, empowered workforce. Ed and the OMC leadership, with the help of trainer, began an intensive team-based training program. The employees went through training on various topics such as team building, problem-solving, team dynamics, feedback, and communication. The team could see the results of the training and hard work. The employees were motivated and encouraged by the progress and success. At the same time, OMC leaders were focused on making a more comfortable and friendly environment. This was accomplished by adding new lighting that tripled the brightness of the facility; painting floors, walls and equipment; and installing air conditioning. All these changes helped to promote the concept that employees play a key role for the success of OMC.

After 18-month implementation cycle the plant had achieved many benefits such as reduction in the inventory by 50 percent, quality control changes resulted in the conversion of up to 100 percent testing of all products without adding any additional employees or equipment, cutting of total production cycle times from days to minutes and reduced total floor space by 41 percent. Working together, the employees and leaders had succeeded in establishing the lean showcase. People from sister companies around the world came to Orlando. Tours were given by the employees. There was no better evidence in the power of lean manufacturing and empowerment than seeing an hourly employee give a presentation to a Vice President of Operations of another facility. Morale was at its highest point ever. But, the success didn't last long. In 2001, the board decided to relocate four new product lines from a sister facility to OMC. Although OMC had installed new production lines in the past, this change was big compared to the change OMC had done previously. It would require doubling the workforce, quadrupling sales, and conversion of the existing production lines to utilize the lean concepts, all within 18 months.

Ed was promoted to VP of Operations. Ed enthusiastically led the new change, but the technical challenges in the transition proved to be more difficult than expected. To ensure that the project was completed on time and that the change was seamless for the customers, the leadership team focused heavily on overcoming the technical hurdles with the production of the new meters. The engineers at OMC constructed new test equipment to replace the 40-year-old technology previously used. The facility kept limited product and process documentation and relied solely on the worker's experience in manufacturing meters. The team failed to address the impact of change on the employees and other critical processes.

To meet the deadline OMC had to increase its number of employees from 50 to its current total of 108. Ed lacked to hire qualified staff to help him with rapid recruiting, interviewing, and hiring of 58 additional employees. He was forced to choose staffing firms for hiring temporary employees. He hoped that the staffing agency would do the pre-screening for OMC and recruit qualified individuals whom OMC could later hire into full-time positions. However, the lack of appropriate qualifications, low levels of loyalty, and high turn-over of the temporary staff, as well as the fees and costs involved in maintaining the temporary employees had caused a large setback for OMC in its maintenance of the lean team-based culture.

Ed and his team had decided to disperse the existing employees throughout the various production lines, both new and old. His team relied heavily on the experienced employees to help and informally share their knowledge and experience on lean and the production process with the new employees. The team plan to disperse the existing employees had failed and the addition of new employees received least formal

training on the technical aspects of their job. The culture of the organization changed drastically due to the tremendous growth that OMC had undergone. The organization moved from a small, one-shift, family-oriented organization to a midsized, two-shift organization in which many of the employees did not know each other's names or each other's jobs. The constant flux of new employees, the lack of effective training, and limited communications had challenged, frustrated and stressed the employees on a daily basis. Performance of employees had decreased; absenteeism rates reached all-time high. All these lead to deterioration of lean culture. This instability has impacted the quality of the products and on-time deliveries, and as a result there had been an increase in the number of customer complaints. After the new change, restraining force was more than the driving force with many problems at OMC. The equilibrium was lost and the attempt to change failed.

3. Identification of Root Causes

There are many factors which lead to failure of large-scaled lean implementation at OMC. Below are few issues which lead to failure of lean methodology implementation at OMC.

3.1. Issue 1: No study on factors which lead to success of lean concepts at a small scale

Lean process implementation at OMC on small scale was successful and stood as showcase for employees from sister companies around the world. The board at OMC was overwhelmed with the success and felt that OMC facility was underutilized. To bring more business from OMC the board decided to relocate four new product lines from a sister facility to OMC. Rather than acting the board had reacted while they introduced new product lines at OMC. The board should have carefully studied the factors which lead to the success of lean implementation. It should have carefully evaluated the assumptions before bringing new large-scale change at OMC. The lean implementation at small scale was successful because employees were loyal to the company, they had a sense of responsibility to one another and everyone was working towards the goal.

3.2. Issue 2: New product lines pushed into successful plant

The board decision to relocate four new product lines from a sister facility to OMC was flawed. When OMC had become a showcase for its sister companies around the world, many people toured the Orlando plant. Tours were given to VP's from other facility by hourly employees of Orlando plant. The trained VP's should have tried implementing the lean process methodologies in their own facilities at a small scale. Also, the board could have tried to move few key trained employees from OMC to one of their sister plant to train them on lean process. Instead the board moved new product lines to OMC and disturbed the culture at OMC.

3.3. Issue 3: Big change in short span of time

The board had planned to implement lean concept on four new product lines at OMC. The timeline the board planned to implement the change in 18 months was very short. The plant had to double the workforce, quadruple sales and covert the existing production lines to utilize the lean concept. Ed who headed the change faced lots of challenges. Firstly, the technical challenges in the transition of this product proved to be more difficult than it seemed to be. Many existing products were designed nearly 50 years earlier or more and meeting the current quality demands proved to be difficult. Secondly, OMC didn't have the talent and workforce to implement the change in 18 months hence they had to choose staffing firms for employees. New employees didn't have appropriate qualifications and had low levels of loyalty. Finally, the new employees couldn't get proper training. The leadership heavily relied on experienced employees to help and informally share their knowledge with the new employees. All these problems hadn't been considered in the original plan which lead to a delay and the project got completed in 20 months.

3.4. Issue 4: Leadership lost focus on lean-culture

To bring four new product lines into lean manufacturing process the leaders ignored many key objectives of lean facilities. The leadership focused heavily on overcoming the technical hurdles in the production of new meters. In doing so, the team failed to address the impact on the employees and other critical people issues that arose during the change process. All these activities led to deterioration of lean culture and OMC lost the team-based structure. Leadership failed to maintain lean-culture throughout the growth process.

3.5. Issue 5: Hired temporary employees using staffing firms

Ed was in need of additional 58 employees to implement big change at OMC. Ed lacked enough qualified staff to help with the rapid recruiting, interviewing and hiring of 58 additional employees and was forced to choose staffing firms. The new employees had low levels of loyalty and high turnover. To train the new employees Ed and his team had decided to disperse the existing employees throughout the production lines. The intent was to provide a solid base of experienced and self-directed employees within each cell. However, the leadership team failed to provide training accordingly. The new employees received very little formal training on the technical aspects of their job.

3.6. Issue 6: Culture of the organization changed drastically

Due to tremendous growth that the OMC had undergone, the organization moved from a small, one-shift, family-oriented organization to midsized, two-shift organization in which many of the employees did not know each other's names or each other's jobs. The constant flux of new employees, the lack of effective training, and limited communications had challenged, frustrated, and stressed the employees on all the teams in the facility on a daily basis. Even members of the management team had lost focus on the lean culture as day-to-day activities consumed all their efforts. More than half of the management team arrived after the lean transformation, the personal commitment and management styles varied.

3.7. Issue 7: No plans on taking feedback from employees

Ed was completely engaged in implementing the lean concept and concentrated most of his efforts on making things work by overcoming the technical hurdles within the existing system. This made the company realize the profits, but the lean culture got disturbed. Ed should have taken feedback from the employees on the changes he was implementing and should have worked on the problems which employees were facing. Ed and team didn't take time to evaluate employee's motivation levels at work and completely ignored the impact of the new changes on employees.

4. Generation of Alternatives/Evaluation of Alternatives

Ed and team had made many mistakes while implementing lean concept on a large scale. Below are a few alternative actions which Ed and team could have followed while they were implementing the lean concept at OMC.

4.1. Alternative Action 1: Ed should have analyzed the factors that led to the success of lean concept at small scale

Ed had failed to understand the factors that worked for him when he led lean implementation project on a small scale. When lean implemented at Orlando on a small scale, employees were motivated to make lean concept a success since they felt that if the lean implementation fails then they would be moved from Orlando to some sister plants. Employees had a sense of belongingness. OMC could not offer competitive compensation package to the employees, OMC ran without air-conditioning. Ed should have carefully evaluated the impact of all these assumptions before implementing the lean concept on a larger scale.

4.2. Alternate Action 2: Employees from the Orlando company should have been shifted to sister plants

Instead of pushing four new production lines into Orlando factory, the leadership team should have sent some of the employees from Orlando to sister plants without disturbing the lean process at Orlando. Employees with experience on lean manufacturing would have trained the employees in sister plants and have shared the success stories with them. This would have helped sister plants to replicate the success that was achieved at Orlando.

4.3. Alternate Action 3: Incremental change to implement a big change

After seeing the success of lean concept at OMC the board decided to introduce four new production lines from sister plant into Orlando. The timeline for the implementation was very short and the change was big. The board should have introduced the new production lines in a phased manner one production line at time. This approach would have helped Ed and team in understanding what went wrong in the first production line and have helped them in not repeating the same mistake again for the next production line. The problem of employee shortage could have been avoided if the team would have implemented the big change in phased manner.

4.4. Alternate Action 4: Leadership team should try to solve existing problems

Ed and team were aggressive in bringing 4 new production lines under lean concept. While doing so they had ignored technical issues with existing system and tried to push the lean concept. These technical issues grew after the change was forcefully pushed into the system. Forceful changes will always lead to difficulty in solving the problem at a later stage. The team should have tried to solve the technical issues when they encountered it at first and should not have ignored them. This could have led to a small delay in the project yet help OMC yield much better results at a later stage.

4.5. Alternate Action 5: Reuse existing employees

The board gave Ed and team a timeline of 18 months to bring four new production lines under lean concept. To implement the project in 18 months team faced a shortage of 58 employees. To fill this gap Ed was forced to choose staffing firm as he did not have HR expertise to hire 58 new employees. Ed should have tried to hire employees from the sister plant itself rather than using staffing firms to fill the gap in employee shortage. Since existing employees would have loyalty to the organization, have better qualification than the employees from staffing firms and they rather didn't need to spend much on maintaining the existing employees.

4.6. Alternate Action 6: Prevent any culture changes which were detrimental for the company

While implementing the lean change, Ed and team had lost focus on the culture changes that were happening inside the organization as part of large scale lean implementation. Employees started working in two-shifts and there was no bonding between employees as they were working on a rotational basis. Before the lean changes at OMC, employees knew each other and each other's families, and they felt a sense of responsibility to one another. All of these were an asset for the company and once the change was implemented they lost the complete momentum. Ed and team should have carefully evaluated the impact of the culture changes before they started the project on new production lines.

4.7. Alternate Action 7: Take periodic employee feedback throughout the implementation cycle

Ed and team should have considered taking feedback from the employees while they were making large-scale changes at Orlando. While implementing the change Ed and team faced many challenges such as

technical issues with existing systems, unable to train new employees and culture changes within the company. All these problems could have been handled in a better way if the team had received regular feedback on the changes happening at Orlando.

5. Recommendations

- The board should have carefully evaluated the success of small-scale lean implementation at Orlando. They have assumed that by bringing in four new production lines at Orlando they can make more profits.
- The board should have carefully evaluated the assumptions before bringing in four new production lines from sister plants into the successful venture at Orlando. The board assumed the success of lean for four new production lines before it rolled out the project. The key assumptions which impacted the project were existing systems would work fine under new lean concept, employee shortage would be solved by using staffing firm and cultural changes such as working in two-shifts will not have any impact on the lean concept.
- The board should have given more flexibility to Ed and team on implementation time-line, because time constraint caused Ed and team to make several mistakes while implementing the lean concept on a larger-scale. To meet the deadline Ed and team made several compromises while implementing the lean concept which include ignoring technical issues with existing systems, hiring new employees using staffing firms and ignoring cultural changes.
- Rather than introducing all four new production lines at once the board should have considered introducing one production line at a time in a phased manner. The board had taken a wrong decision to introduce a big change into a small plant. The plant was not equipped with the resources to run all four new production lines at the same time under the lean concept.
- Ed should have tried to fix problems then and there itself. Ed and team ignored technical issues with the existing system and these issues increased once they integrated it with the lean process.
- Ed and team should have requested the board to get employees from the sister plants rather than hiring new employees using staffing firms. The new employees hired using staffing firm didn't have appropriate skillset and were not motivated to work.
- Ed and team should have taken feedback from the employees about the large-scale changes periodically. Ed and team haven't realized the importance of feedback within an organization. If Ed and team had taken feedback on a monthly basis from their employees, then these problems could have been avoided from their roots. Ed and team were focused only on the deadline and ignored rest of the problems which they faced during the transition.

6. Summary/Conclusion

OMC was successful in implementing the lean concept at a small-scale, but they failed when they tried to implement the same method on a large scale. Major factors which lead to failure of large-scale implementation of lean concept were short timeline, lack of experience in large-scale lean implementation and mistakes made by Ed and team while implementing the change to meet the deadline. The board was overwhelmed with the success of the lean implementation at small-scale. The board wanted to immediately make big profits they compromised the culture at OMC and forcefully pushed four new production lines under the lean concept. Ed who took the responsibility to bring four new production lines under the lean concept made several mistakes during the transition. Starting from not evaluating the success of lean implementation at small scale to choosing staffing firms to hire new talent required for the transition. All these issues could have been handled or wouldn't have arisen if Ed was given more time for the transition. It was clearly evident in the case that Ed and team took 20 months to complete the transition while planned estimate was of 18 months. Ed and team had made several compromises such as ignoring the technical issues with the existing system during the transition, using staffing

firms to hire new talent and making employees work in two-shifts. Ed should have fixed the problems then and there and should not have ignored them. All these problems complicated once the lean concept had been forcefully pushed into the system. The culture of the organization was the core asset which made the lean concept successful on a small scale. By the end of the 20 months' time-line organization culture was completely disturbed which lead to poor motivation among the employees. All in all, Ed and team should have done more detailed planning and should have carefully evaluated all the assumptions before starting the project.