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Lean thinking: Doing More with Less

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Description: An assessment of challenges to and benefits from implementing lean thinking.

Methods: Qualitative case studies

Data Source: Two U.S. and two German secondary wood products manufacturers. Overall, seven managers responsible for lean implementation, three marketing managers, and eleven work-force employees were interviewed. Additional data was received for the U.S. based case companies in the form of the Shingo Prize Achievement Report and associated documentation.

Key Findings:

1. Successful lean implementation can bring a wide array of benefits
2. The biggest challenge during lean implementation is communication
3. An employee focus is very important
4. Exchanging information and experiences with successful lean companies is very beneficial for companies that have just started lean implementation

Introduction

Lean manufacturing/management has been one successful method for improving company performance based on records from industries such as automobiles, aerospace or pharmaceuticals. The Machine that Changed the World described the significant competitive advantage of Japanese car manufacturers over their competitors resulting from their unique manufacturing system, named lean production³.

To gain the full benefit from this new business strategy, it must be fully embraced by top management². It is also important to understand that this concept may be more accurately described as lean thinking instead of lean production. Using the "lean thinking" terminology ensures that the concept is viewed as a total business model, including product development, design and sales. Lean thinking is focused on using a minimum amount of total resources (people, materials, money, machines, etc.) to produce a product and deliver it on time, by implementing specific lean practices and principles.

For a better understanding of the challenges and benefits that wood products companies faced through lean implementation, the research was focused on the following objectives.

1. Identify the common and individual pitfalls and challenges during lean implementation.
2. Identify key resources and assistance that were necessary for successful lean implementation.
3. Identify key benefits realized via lean implementation with an added focus on marketing processes.
4. Summarize similarities and differences between experiences in lean implementation across countries.

Results

All four companies implemented lean thinking rather recently. The most common reason for lean implementation was a minor crisis.

Lean implementation

There tends to be a connection between company size, and the level of lean implementation in different areas. The smaller company in each country implemented lean thinking as a total business strategy, resulting in benefits in all areas of the operation. At the same time, the two larger companies implemented lean rather as a manufacturing tool, not gaining all the benefits possible in all areas of operations. A summary of challenges and benefits consistent to all companies can be found in Table 1.

Employee Focus

Each company had a strong focus on employees. Employees were seen as the most important asset and treated accordingly, something stressed extensively by all managers. Safety is another area upon which companies were highly focused. All interviewed managers were able to report a decrease in accidents since lean implementation. Each company offered extensive training for new employees, and continuous training for other employees. The way employees were trained differs somewhat among case companies, but all managers agreed that training was a critical factor for their success.

Each company had a good suggestion system in place, another indicator of the importance to the companies of employees and their ideas. Teamwork and employee empowerment were identified as important by all managers. To show appreciation to employees, all case companies were conducting social events and employee reward systems. All these efforts by management were gratefully appreciated by the interviewed work-force employees.

Table 1 Common challenges and benefits for case companies

	Case Companies
Main challenges	Culture shock, Communication
Main benefits	Dramatic defect reductions (e.g., 84%) 10%-80% inventory reductions Significant lead time reduction (days and even weeks) Productivity increased 10%-200% with no major capital investment Profitability grew 10%-20% Safety increased
Marketing benefits (applies only smaller companies in each country)	Enhanced ability to respond to market needs Closer to the customer Increased customer satisfaction NPD more efficient and reliable

Key resources and assistance

Most managers did extensive reading about lean thinking and took several lean manufacturing courses. What managers believed was most beneficial to them was benchmarking other companies. Benchmarked companies were from a variety of manufacturing industries. Benchmarking was also conducted among sister plants. It was very helpful for managers to observe, in-person, how other companies were implementing similar practices and principles. Managers found that interaction with other managers and examples presented at plants, and in courses were the most valuable help. Only one company claimed that a consultant was their most beneficial resource. One manager reported that “tough, but fair discussions with management and employees” seemed most beneficial, and employee feedback was highly appreciated.

Differences between countries

German companies started their lean implementation at a higher level of efficiency indicating that some of the low hanging fruit was eliminated prior to lean implementation. Further facts that support this idea were the higher level of state-of-the-art, high-tech, CNC operated machinery and the use of comprehensive enterprise resource planning software at both German companies. The German companies also modified more of the typical lean practices and principles to their special needs, rather than implementing them how they were described in lean literature.

The higher education and skill level of German employees did not make lean implementation easier for the German case companies. However, it helped German companies prior to lean implementation to reach higher levels of manufacturing

efficiency and helped to extensively utilize state-of-the-art, high-tech machinery.

Managerial Implications

The findings of this study suggest, that successful lean implementation can bring a wide array of benefits to companies in the secondary wood products industry.

Although, there are some differences among companies and between countries, key factors for successful lean implementation were found to be consistent. The identified types of assistance can be recommended to any company willing to implement lean thinking at its operation. Furthermore, it is critical to understand that the employees were the single most important resource for a company and should be treated accordingly.

The biggest challenge all case companies experienced was in communication. Communication is one of the key issues in any organizational change situation¹. Companies that are planning on implementing lean thinking should review general communication tactics described in change management literature to help them communicate successful.

Table 2 Themes and general strategies for change¹

Theme	Description
Emphasize participation and empowerment	By creating a sense of ownership among as many stakeholders as possible, employees will be more likely to enthusiastically participate and internalize the suggested changes.
Create a change culture	Encouraging, thoughtful preparation and dissemination of ideas will help.
Emphasize purpose and vision	“Leaders should provide a consistent and strong justification for implementing the change”.
Emphasize communication	Communication should be open and honest, utilizing all means and vehicles of communication.

Literature Cited

¹Lewis, L.K., Schmisser, A.M., Stephens, K.K., Weir, K.E., 2006. Advice on Communicating during Organizational Change: The Content of Popular Press Books. *Journal of Business Communication* 43(2):113-137.

²Womack, J.P., Jones, D.T., Roos, D., 1996. *Lean Thinking: Banish Waste and Create Wealth in Your Corporation*. New York: Simon & Schuster: 350 p.

³Womack, J.P., Jones, D.T., Roos, D., 1990. *The Machine that Changed the World*. New York : Rawson Associates: 323 p.



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