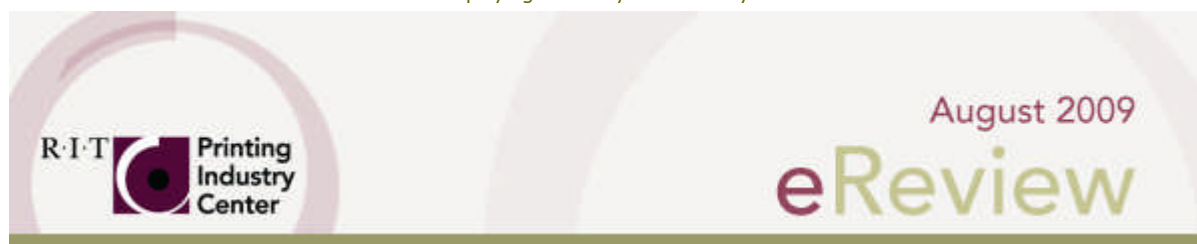


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Implementing Lean Manufacturing into Newspaper Production Operations - Part A

This month's research summary, "Implementing Lean Manufacturing into Newspaper Production Operations," is a graduate thesis written by Marianne Engum, a former graduate student in the [RIT School of Print Media](#). In order to provide an in-depth look at Ms. Engum's work, we will cover the thesis in two parts. This month, we will begin with a summary of the introduction and pertinent sections of the literature review. Next month, we will finish with a look at the research questions, methodology, and research results.

Introduction

Newspapers are a dynamic medium, and the development of newspaper products is continuously changing. The paper has been around for centuries, but today there are a myriad of alternatives for reading the news. In addition to changes in circulation, demand for quality, volume, price, and distribution has changed considerably. The newspaper as a medium must change to meet these demands. The challenges in the market have forced an increased focus on change management, as well as more focus on processes and cost reduction (IFRA, 2006b).

Lean Manufacturing (also referred to as Lean) is a process improvement strategy to increase efficiency. It can be a first step in the right direction as a response to the problems that newspaper printers are facing in today's market. Competition and costs in the printing industry are increasing, and profits will come from lowering the costs, rather than from raising the prices (Cooper, Keith, & Macro, 2007).

Market Overview

The industry was still profitable by the end of 2008, but the recession has threatened the weakest newspapers. However, several major newspapers have been forced to shut down within the last year (The State of the News Media,

make the most profitable use of new technologies, enhance productivity, boost customer satisfaction and produce a healthy bottom line.

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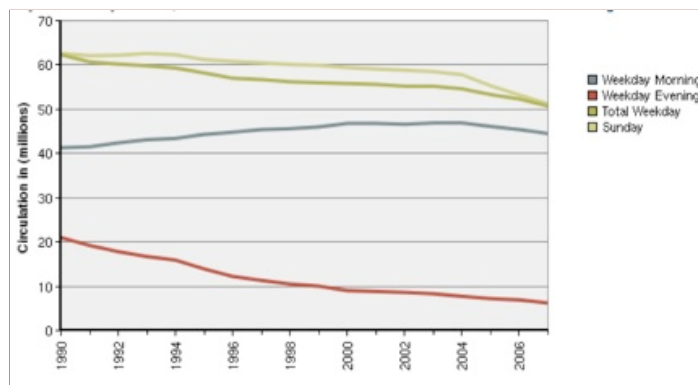
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*According to an email deliverability study from Return Path, monitoring 500,000 campaigns from its Mailbox Monitor service from January to June 2009, the average inbox placement rate for permissioned, commercial email in the US and Canada was 79.3%. **Of the nearly 21% of email that is not delivered to the consumer's inbox 3.3% is sent***

2009). The newspaper market varies from country to country, and the readership and circulation also vary, depending on the type of newspaper. In North America, Sunday papers have the biggest circulation (see [Figure 1](#)). The growth of free newspapers has been significant in Europe, where the circulation of free dailies has grown five times from 2000 to 2007, with a total circulation of 26.5 million in 125 titles. However, data show that the number of subscribers is falling, the free newspaper is also challenging the traditional newspapers in North America, and advertising is moving to Internet services (Eskildsen, 2006). At the end of 2007, U.S. circulation was over three million in about 40 free newspapers (Mediacrit, 2007).

Figure 1. U.S. Newspaper Daily Circulation (The State of the News Media, 2009)

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The amount and immediacy of information on the Internet is increasing, and more readers are turning from the printed newspaper to reading the news online. Most newspapers have begun to realize that providing electronic content online is demanded more and more by their readers (NAA, 2006). In addition to the traditional newspaper, more newspapers are beginning to maintain websites, which they finance with advertising revenues (Newspapers, 2007). The key to the future may be to build a portfolio of additional products around the core product of the traditional printed newspaper. This is feasible because one of newspaper's advantages is the ability to speak to a community as a part of the community (NAA, 2006).

The challenges faced by the newspaper industry call for a new way of thinking—all the way from the top to the bottom of the organization. The mass-media business models that built the newspapers are no longer applicable, as the mass audience is drifting away. Two main strategies have appeared in response to the challenges faced. One is to become a newspaper editorial company and outsource all the production, separating printing and publishing operations. The other solution is to expand production capability while taking a step into the commercial printing market (Sherburne, 2007). No matter what strategy a

to a "junk" or "bulk" email folder and 17.4% is not delivered at all.

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About the Center

Dedicated to the study of

company chooses, a new business strategy requires a good business plan and market research in order to survive in a challenging industry (IFRA, 2006a).

Most newspapers' first reaction to the challenges they face is to create new products and revenue streams, but the products that they create are still very close to the core and lean on the traditional business model (Gray, 2008). In addition, the typical approach to improve efficiency has been to cut staff and to reduce the quality of goods, while avoiding the topic of process improvements. Implementing Lean Manufacturing into the newspaper industry will help to usher in a new way of thinking.

Lean Manufacturing

Lean Manufacturing is a total enterprise strategy, which embraces the entire business model. The Lean strategy is to approach the elimination of non-value-added activities, which are all activities that do not directly increase the value of a service or product ([Cost & Daly, 2003](#)). Lean is a way of minimizing production time and implementing changes to improve efficiency. It is often thought of as a way to reduce buffers, but it is also a multifaceted approach to operate a Lean production ([Cost & Rothenberg, 2004](#)). Lean is focused on doing the right things, at the right place, and at the right time, throughout every step from product development to order fulfillment (George, 2002). Elimination of any type of waste is considered to be the heart of Lean Manufacturing. Lean thinking helps specifying processes creating value and can create ways of converting waste into value (Womack & Jones, 2003).

The principles of Lean Manufacturing have been around for decades and were pioneered by Toyota Production System in Japan in the 1960s (Womack, Jones, & Roos, 1990). The interest in Lean Manufacturing has grown significantly as global competition forces all industries, including printing, to be more proactive and to improve their processes and productivity (Rizzo, 2008). Many manufacturing industries have successfully implemented Lean Manufacturing within their processes since Toyota; over the last decade, printers also have been implementing tools and concepts based on Lean thinking (Cooper et al, 2007).

Waste in a Lean Environment

Toyota defined three broad types of waste, named muri, mura and muda:

- *Muri* is the excessive work that the managers give employees and machines due to a poor organization structure. Muri includes bad working conditions, and it will often push a resource to work harder than its natural limits. Lean focuses on the planning of

major business environment influences in the printing industry precipitated by new technologies and societal changes, the Printing Industry Center at RIT addresses the concerns of the printing industry through educational outreach and research initiatives.

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processes to avoid muri.

- *Mura* is the variation and inconsistency in quality and volume in both products and human conditions.
- *Muda* is the Japanese word for waste; it specifies any human activity, which absorbs resources, but does not directly add value. The definition of muda is the variation in output.

The traditional thinking about waste found in a printing company involves makeready waste and print waste. However, with a Lean perspective, waste from waiting, time wasted due to long changeovers, products waiting in queues (work-in-progress), waiting for stock, warehousing of finished products and raw material, downtime, mounting plates, people or equipment moving around more than required, conducting inspections, overproduction, underutilized resources, or waiting for payments are all also considered to be waste (Huskins, 2007; Cooper et al, 2007).

Change Management

When organizations implement Lean Manufacturing, one of the fundamental elements is not only to focus on the tools and the methodology, but also to include the organization's culture. In a traditional organization, there is be a downward communication flow between the management decisions and the implementation of those decisions by the employees. In a Lean organization, managers encourage a flow of information in all directions, and there is a focus on cross-functional training. To make an organization Lean, it is not enough to implement it in manufacturing; there must be a total integration in all aspects. The management must make a complete commitment to the continuous development of all employees (Cooper et al, 2007; Womack et al, 1990).

Implementing Lean means instituting changes across the whole organization, and change management is therefore a critical part of the implementation. Fear of change is particularly true in the printing industry; it may be a major constraint preventing a Lean success (Cooper et al, 2007; Stevenson, 2007).

Lean Manufacturing in the Newspaper Industry

Lean Manufacturing has often been thought of as only applicable to manufacturing industries, but as Jones and Womack said in their first literature about Lean, it is applicable to any industry. Over the last decade, more and more printers have been introduced to, and have implemented elements from, Lean Manufacturing (Cooper et al, 2007). Lean Manufacturing can help printing companies to

do more with less and to lower their costs by reducing the number of non-value-added activities. Printers implementing Lean are often bringing tools into both office and print operations (Celebrating Excellence in Lean, 2007).

Lean implemented in a newspaper printer can make the operations more efficient and cost-effective, in addition to changing the focus to look for answers and improvements (Brady, 2008). According to Michael Brady, formally with the Newspaper Association of America, three of the main benefits for a newspaper printer to implement Lean Manufacturing into their operations are:

- Outsourcing of functions for increased efficiency and cost reduction, and better customer service
- Reduction in the geographic area of distribution, resulting in reduced newsprint and transportation cost, allowing more targeted focus on the core audience
- Use of common operational systems to optimize communication between departments

Some newspapers in United States have already been successful in implementing Lean. The Milwaukee Journal Sentinel has used Lean Manufacturing and Six Sigma to achieve ISO 9000 certification. The Wall Street Journal has used Six Sigma to identify problems, to analyze causes of problems, and to determine customer preferences (Columbia, 2007). Southernprint is one printing company that successfully managed to implement Lean Manufacturing; it obtained a better working environment and a significant improvement in reducing overruns (Thinking and Acting Lean, 2000). Another example of a newspaper company that has successfully implemented Lean is North Jersey Media Group (NJMG).

NJMG, a newspaper publishing company, has implemented Lean into their non-manufacturing environment. With this implementation, they managed to save more than \$0.5 million in 2004. As with other players in the industry, they were facing challenges with declining circulation, a drop in advertising revenues, and the need to manage the costs of production. The managers at NJMG realized they had to do something, and they wanted to have all of their employees involved in the process.

NJMG started with process mapping, 5S, planning of a Kaizen event, and identifying other operational improvements. One of their main objectives was to improve the newspaper's on-time delivery, and they used a cross-functional team to prepare a map of all the activities involved in getting a newspaper out efficiently. A better process helped them to improve their on-time delivery from 92% to 98%, compared

to an industry average of 89%. In addition to this, they saw a significant increase in available plant space, improvements in efficiency, and faster response times to customers' needs (Keeping the Presses Rolling, n.d.).

Conclusion

Next month, we will finish with a look at the research questions, methodology, and research results from this thesis.

Research publications of the Center are available at:

<http://print.rit.edu/research/index>

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