[Nyjaliek Williams](https://canvas.park.edu/courses/84343/users/100702)

Mar 7 4:38am| Last reply Mar 7 11:05am

Manage Discussion by Nyjaliek Williams

### Reply from Nyjaliek Williams

Hello Everyone,

For this week’s discussion, I have chosen to discuss the concept: Examples and benefits of lean supply chains with lean suppliers, lean procurement, lean manufacturing, lean warehousing, lean logistics, and lean customers. Lean supply chains focus on reducing waste, improving efficiency, and delivering value to customers with minimal delays. Companies using lean principles aim to streamline processes at every stage, from sourcing raw materials to delivering the final product.

**Article Summary**

The article “The Giga Press: Tesla’s Game-Changing Manufacturing Process Goes Mainstream” by Suvrat Kothari (2023) explains how Tesla’s adoption of giga casting has revolutionized lean manufacturing in the automotive industry. A giga press is a high-pressure die-casting machine that replaces traditional multi-part assembly with just a few large cast components. This innovation simplifies production, reduces waste, and lowers costs—key principles of lean manufacturing.

Tesla first introduced the giga press in its Model Y, replacing 70 smaller parts with just two or three castings. This change reduced manufacturing costs by 40% and eliminated the need for 600 assembly robots in Model 3 production. The lean approach also extends to logistics, as fewer parts mean simpler supply chain operations and reduced transportation needs. Other automakers like Toyota, Volvo, and General Motors are now adopting giga casting to achieve similar lean benefits (Kothari, 2023).

Benefits of Lean Supply Chains

Lean supply chains provide several advantages across different stages of production and distribution. Lean suppliers ensure a steady and efficient flow of materials, reducing excess inventory and minimizing storage costs. Through lean procurement, businesses strategically source only essential resources, eliminating unnecessary expenses. Lean manufacturing plays a crucial role by optimizing production, reducing material waste, and increasing efficiency through automation, as seen in Tesla’s use of the giga press. Additionally, lean warehousing improves storage management by requiring less space and reducing handling time, which further enhances productivity. Lean logistics simplify transportation by cutting down the number of parts moved between suppliers and factories, ultimately lowering fuel costs and carbon emissions. Finally, lean customers benefit from faster production cycles, lower costs, and improved product availability, ensuring a more seamless purchasing experience (Chase,2022).

This case study highlights how companies can integrate lean principles across the entire supply chain to improve efficiency and reduce waste. By simplifying production and logistics, businesses not only cut costs but also create sustainable and scalable operations. The success of Tesla’s giga press technology demonstrates the power of lean supply chains in modern manufacturing (Chase,2022).

References

Chase, F.R.J. R. (2022). Operations and Supply Chain Management: The Core (6th ed.). McGraw-Hill Higher Education (US). https://mbsdirect.vitalsource.com/books/9781265402167

Kothari, S. (2023, June 21). The Giga Press: Tesla’s game-changing manufacturing process goes mainstream. InsideEVs. https://insideevs.com/news/673158/tesla-giga-casting-manufacturing-becomes-mainstream

* Expand discussion thread from Nyjaliek Williams

**2 Replies, 2 Unread**

**2 Replies, 2 Unread**

* Reply to post from Nyjaliek Williams**Reply**
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[Nyguel Richards](https://canvas.park.edu/courses/84343/users/62110)

Mar 7 12:21am| Last reply Mar 7 11:09am

Manage Discussion by Nyguel Richards

### Reply from Nyguel Richards

hello All,

# **Title of the Analysis /concept being applied**

The principle of the Operational Efficiency and Lean Manufacturing is critiqued here. Lean manufacturing is defined as a strategy designed to cut down on time squandered completing tasks that do not add value to a service or product. Lean manufacturing emphasizes the reduction of non-value-adding activities or processes. Operation managers make use of advanced simulation techniques such as Value Stream Mapping (VSM) and Discrete Event Simulation (DES) to evaluate and improve production systems. Managers of operations have the most important responsibilities in applying these concepts because they examine the course of production, determine the presence of wasteful activities, and form plans aimed at improving effectiveness. This paper shows the benefits underlined by an integrated approach combining VSM with DES in reducing the leather manufacturing production lead times and operational wastes while improving efficiency.

# **Short Summary of the News Article**

 The article “Enhancing Operation Efficiency of Leather Manufacturing Industry through Hybrid of Value Stream Mapping and Discrete Event Simulation,” explores the operational problems of a leather manufacturing firm in Addis Ababa, Ethiopia. This firm specializes in manufacturing various leather items like handbags, briefcases, and school bags, but suffers from several operational inefficiencies, such as elevated work-in-progress inventory, long lead times, and needless steps in processes. The authors undertake a case study to diagnose these operational inefficiencies and recommend appropriate measures to improve overall operational performance. Their methodology starts with mapping the production system using Enhanced Current State Value Stream Mapping (ECSVSM), which measures both value-added and non-value-added time. They then construct a production process simulation model with the Discrete Event Simulation for the whole ‘production’ process to understand how delays transform into inefficiencies over time. From these, they design a number of lean strategies encompassing process flow reconfiguration, adoption of 5S, supermarket systems, and changes in factory spatial arrangements. These corrective actions yielded in average results of operational efficiency improvement of 8.16%, decrease in non-value-added activities of 42.9%, and total lead-time reduction of 42.72%. This case illustrates that integrating Value Stream Mapping with Discrete Event Simulation enhances productivity in the leather industry.

# **Analyze based on the management concept**

The study is developed using the principles of lean manufacturing and effective operation practices. Its major focus is the elimination of waste through Value Stream Mapping. The authors, by studying the production flow, diagnosed wastes in the systems like long waiting time, movement of employees, and over-processing of many tasks. The study provides evidence suggesting imbalance in the production processes by showing that the calculated tac time of 230.1 seconds per unit was not consistent with the cycle times achieved in the different stages of production. It shows that there is a production delay because the supply of the components does not match the consumption level, leading to waste that can be improved through better process balancing and workflow diagramming.

One more advantage in this study is the integration of Discrete Event Simulation within the traditional Value Stream Mapping. While VSM offers a static view of the production process, DES provides an opportunity for the operations manager to factor in changeable elements and make various modifications prior to executing them. The study shows that analysis with the aid of simulation gives a better understanding of production activities, which facilitates better decisions. The authors make a significant contribution by developing a novel approach for process optimization through the combining of lean tools and simualtion modeling, which makes their results relevant not only in leather manufacturing industries but in other sectors as well.

Although the study has its strengths, it is clear that there are several areas of improvement that the study has not dealt with. The results stem from one company entirely which adds to the concern of how these findings can be extrapolated to the rest of the leather manufacturing sector. Moreover, while the study attempts to capture changes in lead time and operational efficiency, it ignores the financial aspects such as cost reductions and ROI. The research also does not consider possible difficulties related to change management resistance which is a typical barrier in lean implementation. Lean paradigm shifts can be achieved only if there is not only a change in processes, but also adequate mobilization through education and efforts directed at the changed processes.

# **Identify your sources**

Woldemicael, W. W., Berhan, E., Kitaw, D., & Tesfaye, G. (2024). Enhancing operation efficiency of leather manufacturing industry through hybrid of value stream mapping and discrete event simulation. Cogent Engineering, 11(1) [https://doi.org/10.1080/23311916.2024.2375423Links to an external site.](https://doi.org/10.1080/23311916.2024.2375423)