

“Production Process Innovation to Increase Business Competitiveness in the Future case study PT Panca Setia Makmur”

Muslikun

Email : muslikun@stiemahardhika.ac.id

STIE Mahardhika Surabaya, Indonesia

|Submitted: 05-01-2025

|Revised: 15-01-2025

|Accepted: 25-01-2025

ABSTRACT

In facing increasingly competitive market dynamics, innovation in the production process is a key factor in maintaining and increasing business competitiveness. This case study discusses PT Panca Setia Makmur's efforts to develop production process innovation through the application of new technology, optimizing work flow, and improving product quality. This research uses a qualitative approach with observation methods and in-depth interviews with management and related employees. The results show that planned and integrated innovation not only increases production efficiency, but also expands market opportunities and strengthens the company's position amidst industrial competition. This study provides strategic recommendations for other companies wishing to build competitive advantage through sustainable innovation in the production sector.

Keywords: *Production Innovation, Business Competitiveness, Operational Efficiency, Industrial Transformation, Innovation Strategy, PT Panca Setia Makmur*

1. Introduction

In the era of globalization and increasingly rapid technological developments, business competition in various industrial sectors is becoming increasingly fierce. Companies are required to not only maintain product quality, but also to continue to innovate to increase efficiency, productivity and competitive advantage. One important aspect that needs to be considered is innovation in the production process, which plays a vital role in determining operational effectiveness and the company's ability to adapt to market changes.

PT Panca Setia Makmur, as a company operating in the manufacturing sector, realizes the importance of innovating in its production process to remain able to compete in domestic and international markets. Along with changes in consumer preferences, demands for high quality products, and pressure to reduce production costs, PT Panca Setia

Makmur needs to implement an innovation strategy that not only focuses on the final product, but also on every stage of the production process.

This research aims to analyze production process innovation efforts carried out by PT Panca Setia Makmur, evaluate its impact on increasing the company's competitiveness, and provide strategic recommendations for future development. By understanding how production process innovation can be a key factor in strengthening a company's position in the market, it is hoped that the results of this research can become a reference for PT Panca Setia Makmur and other companies facing similar challenges.

2. Library Review

Innovation in the Production Process

Production process innovation is an effort to update or improve methods, techniques and technology in production in order to achieve higher efficiency, reduce costs, improve quality or speed up production time (Schilling, 2017). This innovation can include the application of new technology, changes to production flows, the use of alternative raw materials, and automation of production lines.

According to Utterback and Abernathy (1975), process innovation becomes increasingly important when product markets have reached a level of maturity, where competitive advantage shifts from product innovation to efficiency in production.

Business Competitiveness

Business competitiveness is defined as the ability of a company to maintain and improve its position in the market in the face of competition (Porter, 1985). Factors that influence competitiveness include product quality, production costs, speed of innovation, customer service and operational efficiency.

Porter (1990) through the concept of The Competitive Advantage of Nations also emphasizes that business competitiveness can be strengthened through differentiation strategies and cost advantages, one of which can be achieved through process innovation.

The Relationship between Production Process Innovation and Competitiveness

Various studies show that production process innovation contributes directly to increasing company competitiveness. Research by Cainelli, Evangelista, and Savona (2004) states that companies that actively innovate in the production process are better able to increase productivity, reduce operational costs, and improve response time to market demand.

Effective implementation of production process innovation allows companies to offer products at more competitive prices without sacrificing quality, thereby increasing opportunities to maintain and expand market share.

Modern Production Technology

The development of industrial technology such as the Internet of Things (IoT), Artificial Intelligence (AI), and automation-based production systems (smart manufacturing) brings new opportunities in production process innovation (Kagermann, Wahlster, & Helbig, 2013). Adoption of this technology not only increases production efficiency and flexibility, but also speeds up time to market and enables more personalized mass production according to consumer needs.

Case Study of a Manufacturing Company

Several case studies show that manufacturing companies that integrate innovation in their production processes are successful in maintaining competitiveness in the global market. For example, Toyota with the Toyota Production System (TPS) introduced the concept of lean manufacturing, which focuses on reducing waste in every aspect of

production (Ohno, 1988).

3. Research methods

a. Types of research

This research uses a qualitative approach with a case study method. The case study was chosen because it allows researchers to analyze in depth the phenomena that occur at PT Panca Setia Makmur in the context of production process innovation implemented to increase business competitiveness.

b. Research purposes

This research aims to: Identify and analyze innovations in the production process implemented at PT Panca Setia Makmur. Research subjects include:

- Production managers and employees involved in the production process.
- The research and development (R&D) department is responsible for innovation.
- Parties who have knowledge of the company's business strategy and competitiveness.

c. Data Collection Techniques

Data will be collected through several techniques, among others:

- In-depth interviews: Conducted with managers, heads of production departments, and other related parties to obtain information regarding the production process innovations implemented.
- Direct observation: Researchers will directly observe the production process at PT Panca Setia Makmur to understand the application of innovation and see its impact on efficiency and product quality.
- Documentation: Collecting relevant documents relating to innovations that have been implemented, such as annual reports, research and development reports, and production standard operating procedures (SOP).
- Questionnaire: To obtain opinions from employees about the effectiveness of innovation in the production process on the company's competitiveness.

d. Data analysis

The collected data will be analyzed using thematic analysis and SWOT analysis:

Thematic analysis is used to analyze interviews and other qualitative data by identifying main themes related to production process innovation.

SWOT analysis (Strengths, Weaknesses, Opportunities, Threats) is used to assess the strengths, weaknesses, opportunities and threats faced by PT Panca Setia Makmur in increasing business competitiveness through production innovation.

Data Validity and Reliability To ensure the validity and reliability of the data, researchers will use data triangulation, namely comparing the results obtained from interviews, observations and documentation. Apart from that, researchers will also use member checking, by asking respondents for confirmation regarding the findings and interpretations obtained during the research.

d. Research Scope

This research is limited to production process innovations carried out at PT Panca Setia Makmur in recent years and how these innovations affect the company's business competitiveness.

e. Thinking Framework

Production Process Innovation: Focuses on changes or improvements in the way production is carried out, including the application of new technologies, quality improvements, cost reductions, or operational efficiencies.

- **Business Competitiveness:** A company's ability to survive and excel in the global market by paying attention to factors such as product quality, production costs, delivery times, and product innovation.
- **Porter's Five Forces Model:** Used to understand a company's competitiveness in an industry and how production process innovation can affect a company's market power.

4. Analysis Results and Discussion

1. Implementation of Production Process Innovation at PT Panca Setia Makmur

Based on the results of interviews and observations conducted, PT Panca Setia Makmur has implemented several innovations in its production process to increase efficiency and product quality. The innovations implemented include:

- Production Automation:** PT Panca Setia Makmur has made large investments in automation technology, such as the use of production machines equipped with computer control systems and robotics to increase efficiency in production lines. This has a significant impact on reducing production time, as well as increasing product quality consistency.
- Improvements in Supply Chain Management:** To support a more efficient production process, the company also introduced a technology-based supply chain management system to ensure timely availability of raw materials and minimize waste. This innovation also involves real-time monitoring of the flow of raw materials and finished products.
- Sustainable Production Process:** PT Panca Setia Makmur has also adopted sustainability principles in its production process, such as reducing waste and using renewable energy in factory operations. This innovation not only supports environmental sustainability, but also improves the company's image in the eyes of consumers who are increasingly concerned about environmental issues.

2. The Impact of Production Process Innovation on Business Competitiveness

Based on analysis of the results of interviews with management and employees, as well as data obtained from financial and operational reports, there are several positive impacts from implementing innovation in the production process on PT Panca Setia Makmur's business competitiveness:

- **Cost Efficiency:** By implementing automation and improvements in the supply chain, companies have managed to reduce operational costs significantly. Production costs per unit of product fall, which allows companies to offer more competitive prices in the market without sacrificing product quality.
- **Improved Product Quality:** Automation in production not only reduces human errors, but also allows for tighter quality control. This increases product consistency and quality, which is an important factor in retaining existing customers and attracting new ones.
- **Faster Delivery Times:** More efficient production processes and better supply chain management systems enable PT Panca Setia Makmur to reduce production and delivery times. With faster delivery times, companies can meet market demands more responsively, providing a competitive advantage in a highly dynamic market.
- **Improving Company Image:** Implementing sustainability principles in the production process also improves the company's image in the eyes of consumers who are increasingly concerned about environmental issues. This gives PT Panca Setia Makmur an edge in attracting consumers who prioritize environmentally

friendly products, which is a rapidly growing market segment.

3. SWOT Analysis of PT Panca Setia Makmur Production Process Innovation

Based on the analysis carried out, the following are the results of the SWOT analysis regarding production process innovation at PT Panca Setia Makmur:

Strengths (Strength):

Production automation that increases efficiency and reduces errors. More efficient supply chain management, reducing logistics costs and increasing production speed. Commitment to sustainability, improving the company's image and attracting consumers who care about the environment.

Weaknesses:

High initial costs for investment in automation technology and advanced supply chain management systems. Reliance on technology that can pose risks in the event of technical glitches or system failures. Lack of training for some employees to adapt to new systems, which can affect productivity in the short term.

Opportunities (Opportunities):

Growth in market demand for more environmentally friendly and high quality products. Opportunities to develop international markets, as more efficient production processes allow companies to offer more competitive prices. Potential to continue to innovate and integrate new technologies, such as AI and IoT, in production processes to further increase competitiveness.

Threats:

Increasingly tight competition in the manufacturing industry, with other companies also adopting similar innovations. Data security risks and cyber attacks that can disrupt operations and damage the company's image. Global economic uncertainty that can affect raw material costs and market demand.

5. Conclusion

Based on the results of research regarding production process innovation at PT Panca Setia Makmur, it can be concluded that the application of innovation in the production process has had a significant impact on increasing the company's competitiveness. Several key innovations implemented, such as production automation, improvements in supply chain management, and the adoption of continuous production processes, have succeeded in increasing operational efficiency, reducing production costs, and improving product quality.

The application of automation technology and efficient supply chain management allows PT Panca Setia Makmur to be more responsive to market demand and reduce production time, thereby increasing competitiveness in a very dynamic market. Apart from that, the commitment to sustainability has also improved the company's image in the eyes of consumers who are increasingly concerned about environmental issues, opening up new opportunities in market segments that are more sensitive to environmentally friendly products.

However, although these innovations provide long-term benefits, the challenges of high initial investment costs and the need to continuously upgrade employee skills in dealing with new technologies remain important concerns for companies.

Suggestion

- Continuing to Invest in the Latest Technology
To maintain and increase competitiveness, PT Panca Setia Makmur should continue to invest in the latest technology, such as artificial intelligence (AI), Internet of

Things (IoT), and other advanced manufacturing technologies. This technology can further improve efficiency, cost reduction, and product quality, which in turn can provide a greater competitive advantage.

- **Improve Employee Training Programs**
As part of adapting to the technological innovations implemented, PT Panca Setia Makmur needs to improve employee training and skills development. An ongoing training program will help employees to be better prepared to face change and maximize the potential of new technologies used in the production process.
- **Diversification of Supply Sources and Mitigation of Economic Risks**
Considering global economic uncertainty, companies are advised to further diversify sources of raw materials and business partners from various regions to mitigate the risk of dependence on one source. This will reduce the possible impact of price changes or raw material supply disruptions.
- **Focus on Sustainable Innovation**
Sustainability must be part of a company's long-term strategy. PT Panca Setia Makmur can further optimize sustainability initiatives by further reducing production waste, increasing energy efficiency, and introducing environmentally friendly products that can attract consumers who are increasingly concerned about environmental issues.

Developing International Markets By increasing production efficiency and product quality, companies have the opportunity to further develop international markets. PT Panca Setia Makmur can utilize existing technology to compete in the global market by offering high quality products at competitive prices.

6. Bibliography

- Hitt, M. A., Ireland, R. D., & Hoskisson, R. E. (2017). *Strategic Management: Concepts and Cases*. Cengage Learning.
- Porter, M. E. (1985). *Competitive Advantage: Creating and Sustaining Superior Performance*. Free Press.
- Tidd, J., & Bessant, J. (2018). *Innovation and Entrepreneurship: A Competency Framework*. Wiley.
- Gunasekaran, A., & Spalanzani, A. (2012). Sustainability of Manufacturing and Services: A Literature Review. *International Journal of Production Economics*, 140(1), 35-47.
- Krafcik, J. F. (1988). Triumph of the Lean Production System. *Sloan Management Review*, 30(1), 41-52.
- Schein, E. H. (2010). *Organizational Culture and Leadership*. John Wiley & Sons.
- Purnomo, M., & Agustina, H. (2020). Production Process Innovation: Increasing Efficiency and Competitiveness of Manufacturing Companies. *Journal of Industrial Engineering*, 21(3), 78-86.
- Kotler, P., & Keller, K. L. (2016). *Marketing Management*. Pearson Education.
- Ghoshal, S., & Bartlett, C. A. (1997). *The Individualized Corporation: A Fundamentally New Approach to Management*. HarperBusiness.
- Evans, J. R., & Lindsay, W. M. (2014). *Operation Management: Sustainability and Supply Chain Management*. Pearson Education.
- Slack, N., Brandon-Jones, A., & Burgess, N. (2018). *Operations Management*. Pearson Education.
- Pencere, M., & Celik, M. (2019). The Role of Innovation in Improving Competitive Advantage in Manufacturing Companies. *Journal of Business Research*, 68(12), 2545-2552.

Bessant, J., & Tidd, J. (2007). *Innovation and Entrepreneurship: Managing the Creative Enterprise*. Wiley.

Purveyar, R., & DiSalvo, R. (2012). *The Role of Technology and Innovation in Achieving Competitive Advantage*. Harvard Business Review.

PT Panca Setia Makmur. (2024). *Company Annual Report 2024*. PT Panca Setia Makmur.

Prajogo, D. I. (2016). The Strategic Fit Between Innovation and Business Performance. *International Journal of Operations & Production Management*, 36(9), 987-1006.

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).