

**MANAGING TECHNOLOGY AND INNOVATION TO SUSTAIN COMPETITIVE SUCCESS:
A FOCUS ON ENVIRONMENT AND DRIVERS FOR INNOVATION**

By

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1.0 Introduction

In today's rapidly evolving business landscape, technological innovation has emerged as a primary driver of competitiveness. Companies that effectively manage technology and innovation have a significant advantage in the market. This research aims to explore three major groups of innovation drivers that facilitate the efficient management of technology and innovation. The first group is called Environment and Drivers for Innovation, which includes technological change, strategy for innovation, and sources of innovation namely customers and creativity. The second one is the Innovation Process. Finally, the Methods and Tools to support innovation such tools as Quality Function Deployment (QFD), Failure Mode and Effects Analysis (FMEA), and Cause and Effect diagram. This paper will only examine the first group.

Keywords:

[Drivers for innovation, Innovation management, Sources of innovation, Technological innovation]

2.0 Research Problem Statement

Nowadays, technological innovation has become one of the most critical drivers of competitiveness. As technology rapidly evolves and markets become more open, the need for effective technology and innovation management has emerged. In this context, we will explain the drivers for managing technology and innovation to harness technological opportunities. These drivers include, but are not limited to, technological change, strategy, and sources of innovation such as creativity, and customer's needs.

2.1 Research Questions

The research is intended to explore the following questions:

- How can organizations identify and respond to key trends in technological change?
- How can organizations develop and implement innovation strategies that are aligned with their overall business goals?

- How can organizations create a culture of innovation that fosters creativity and collaboration from customers and employees?
- What are the best practices for managing the Environment and Drivers for Innovation in different industries and contexts?

2.2 Research Objectives

The objective of this research is to explore the key factors that contribute to effective management of the Environment and Drivers for Innovation. Specifically, the research will focus on the following questions:

- What are the key trends in technological change that are impacting organizations?
- How can organizations develop and implement effective innovation strategies?
- How can organizations tap into customer and employee creativity to generate new ideas and solutions?

2.3 Research Hypothesis

General hypothesis:

H1: Organizations that effectively manage the three main innovation drivers (Environment and Drivers for Innovation, Innovation Process, and Methods and Tools to support innovation) will have a competitive advantage over those that do not.

Specific hypotheses:

H1a: Organizations that effectively manage the Environment and Drivers for Innovation (technological change, strategy for innovation, and sources of innovation) will be more likely to exploit technological opportunities and stay ahead of market competition.

H1b: Organizations that effectively manage the Innovation Process (product development processes, product innovation charter, decision process using concept of Stage/Gate, and concept selection methods) will be more likely to develop and launch innovative products and services successfully.

H1c: Organizations that effectively manage the Methods and Tools to support innovation (Quality Function Deployment, Failure Mode and Effects Analysis, and Cause and Effect

diagram) will be more likely to improve the efficiency and effectiveness of their innovation process.

This research hypothesis could be tested using a variety of methods, such as surveys, interviews, and case studies. By testing these hypotheses, researchers can gain a better understanding of the factors that contribute to effective technological innovation management and how to create a competitive advantage for organizations.

2.4 Expected Outcomes

The expected outcomes of this research are:

- A better understanding of the key factors that contribute to effective management of the Environment and Drivers for Innovation.
- A set of recommendations for organizations on how to manage these drivers effectively.
- A framework for evaluating the effectiveness of an organization's management of the Environment and Drivers for Innovation.

3.0 Significance of the Research

The findings of this research will be of significant value to organizations that are looking to improve their technological innovation management capabilities. The research will provide organizations with a clear understanding of the key factors that contribute to effective management of the Environment and Drivers for Innovation, and it will provide recommendations on how to manage these innovation drivers effectively.

4.0 Literature Review

Technological change

Technological change is one of the key drivers of innovation in today's business landscape. New technologies can enable companies to develop new products and services, improve their existing products and services, and reduce their costs. Companies that are able to effectively manage technological change are better positioned to compete in the market.

There are several factors that contribute to technological change, including:

- **Advances in basic science and engineering:** New scientific discoveries and engineering advances can lead to the development of new technologies.
- **Private sector investment in research and development:** Companies also invest in research and development to develop new technologies that will give them a competitive advantage.
- **The diffusion of new technologies:** Once new technologies are developed, they need to be diffused throughout the economy in order to have a significant impact on innovation.

Strategy for innovation

Another key driver of innovation is an effective innovation strategy. Thompson and Strickland (2001) found that well-defined competitive strategy can help companies to identify their innovation goals, allocate resources to innovation, and measure the success of their innovation efforts.

There are several different approaches to innovation strategy. Some companies focus on incremental innovation, which involves making small improvements to existing products and services. Other companies focus on radical innovation, which involves developing new products and services that are significantly different from what is currently available (Davenport, and Leibold, 2007, p.125-129).

Sources of innovation

Mellor (2009) claims that innovation can come from a variety of sources, including customers, creativity, and competitors.

Customers: Customers can be a valuable source of innovation ideas. Companies can learn about customer needs and wants by conducting customer surveys, focus groups, and interviews.

Creativity: Employees can also be a valuable source of innovation ideas. Companies can encourage employee innovation by creating a culture that is supportive of risk-taking and creativity.

Competitors: Companies can also learn from their competitors by analyzing their products and services and identifying areas where they can improve.

5.0 Research Methodology

The research will be conducted using a mixed-methods approach. A literature review will be conducted to identify the key factors that contribute to effective management of the Environment and Drivers for Innovation. Case studies will also be conducted to gain insights into how organizations are currently managing these drivers and to identify best practices.

6.0 Research Structure

- *Introduction*
- *Section One: Technological change:*
 - Drivers of technological change (e.g., advances in science and technology, new market opportunities, competitive pressures)
 - Impact of technological change on innovation
- *Section Two: Strategy for innovation:*
 - Different types of innovation strategies (e.g., operational excellence, product leadership, customer intimacy)
- *Section Three: Sources of innovation:*
 - **Customers:** How to understand customer needs and preferences, and how to use this information to develop new products and services
 - **Creativity:** How to foster creativity and innovation within an organization
- *Conclusion*

7.0 Research Limitations

This research will focus on the Environment and Drivers for Innovation group of innovation drivers only. The other two groups, namely Innovation Process and Methods and Tools to support innovation, will be explored in future research.

8.0 Conclusion

This research proposal has outlined a plan to explore the key factors that contribute to effective management of the environment and drivers for innovation. The research will be conducted using a mixed-methods approach and is expected to produce findings that will be of significant value to companies that are looking to improve their technological innovation management capabilities.

References:

Urbancova Hana (2013) 'Competitive Advantage Achievement through Innovation and Knowledge', *Journal of Competitiveness*, 5(1), pp. 82–96. Available at: <https://search-ebscohostcom.sdl.idm.oclc.org/login.aspx?direct=true&db=edsdoj&AN=edsdoj.2ab9d9f568b7424a9c50641593b48181&site=eds-live> (Accessed: 8 November 2023).

Wójcik P. (2015) Exploring Links Between Dynamic Capabilities Perspective and Resource-Based View: A Literature Overview. *International Journal of Management and Economics*, Vol.45 (Issue 1), pp. 83-107. <https://doi.org/10.1515/ijme-2015-0017>

Xavier, R. and Pereira, R. (2023) 'Exploring the Drivers of Business Model Innovation: Insights From a Single-Case Study in Agribusiness', *Proceedings of the European Conference on Innovation & Entrepreneurship*, pp. 913–921. doi:10.34190/ecie.18.2.1437.

Lee, H., Kang, P. Identifying core topics in technology and innovation management studies: a topic model approach. *J Technol Transf* 43, 1291–1317 (2018). <https://doi-org.sdl.idm.oclc.org/10.1007/s10961-017-9561-4>

Matej Lahovnik and Lidija Breznik (2013) 'Innovation Management and Technological Capabilities as a Source of Competitive Advantage', *Active Citizenship by Knowledge Management & Innovation: Proceedings of the Management, Knowledge and Learning International Conference 2013*, p. 771. Available at: <https://search-ebscohostcom.sdl.idm.oclc.org/login.aspx?direct=true&db=edsrep&AN=edsrep.h.tkp.mklp13.771.779&site=eds-live> (Accessed: 8 November 2023).

Deniz Dilara Dereli, *Innovation Management in Global Competition and Competitive Advantage*, *Procedia - Social and Behavioral Sciences*, Volume 195, 2015, Pages 1365-1370, ISSN 1877-0428, <https://doi.org/10.1016/j.sbspro.2015.06.323>.

Horn, C. and Brem, A. (2013), "Strategic directions on innovation management – a conceptual framework", *Management Research Review*, Vol. 36 No. 10, pp. 939-954. <https://doi-org.sdl.idm.oclc.org/10.1108/MRR-06-2012-0142>

Adams, K., 2005. The Sources of Innovation and Creativity. National Center on Education and the Economy (NJ1).

Filippetti, A., 2011. Innovation modes and design as a source of innovation: a firm-level analysis. *European Journal of Innovation Management*, 14(1), pp.5-26.

Beneito, P., 2003. Choosing among alternative technological strategies: an empirical analysis of formal sources of innovation. *Research policy*, 32(4), pp.693-713.

Von Hippel, E., 2007. The sources of innovation (pp. 111-120). Gabler.

Laursen, K. and Salter, A., 2004. Searching high and low: what types of firms use universities as a source of innovation?. *Research policy*, 33(8), pp.1201-1215.

Schweisfurth, T.G., 2017. Comparing internal and external lead users as sources of innovation. *Research policy*, 46(1), pp.238-248.

Davenport, T.H., Leibold, M. and Voelpel, S.C., 2007. Strategic management in the innovation economy: Strategic approaches and tools for dynamic innovation capabilities. John Wiley & Sons.