

Research Proposal

Title:

The impact of operations strategy on project management: an applied study on engineers working in engineering projects.

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1.1. Introduction

The impact of operations strategy on project management is a critical aspect of organizational success. Operations strategy refers to the decisions and actions taken to shape the operational capabilities of a company, while project management involves planning, organizing, and executing specific initiatives to achieve defined objectives within a set timeframe and budget. The alignment between operations strategy and project management is crucial as it directly influences the efficiency, effectiveness, and overall outcomes of projects(Bordoloi et al., 2019).

Operations strategy sets the framework for how resources, including people, technology, and processes, are utilized within an organization. It encompasses decisions related to production methods, quality control, supply chain management, capacity planning, and more. These strategic choices have a profound impact on project management, as they determine the availability and allocation of resources, the level of coordination and collaboration required, and the overall feasibility and success of project deliverables(Sirisomboonsuk et al.,2018).

Effective project management relies on a clear understanding and integration of the organization's operations strategy. When operations strategy is well-aligned with project goals, it provides a solid foundation for project planning and execution. The strategic decisions made at the operations level can influence project timelines, resource availability, risk management approaches, and the overall project scope (Demirel& Camcı,2022).

A well-defined operations strategy can enhance project management by streamlining processes, optimizing resource allocation, and ensuring consistency across projects. It enables organizations to leverage their operational capabilities, such as efficient production processes or robust supply chains, to support project implementation. On the other hand, a misalignment between operations strategy and project management can lead to resource constraints, delays, cost overruns, and compromised project outcomes(Yaghtin & Abbasi,2018).

1.2. Research Problem

The impact of operations strategy on project management presents a significant challenge for organizations. While operations strategy and project management are two distinct areas, their alignment is crucial for successful project execution and overall organizational performance. However, the lack of understanding and integration between operations strategy and project management often leads to inefficiencies, delays, and compromised project outcomes. The problem lies in the misalignment between the decisions and actions taken at the operations strategy level and their implications for project management. Organizations may fail to recognize the importance of considering operational capabilities, resource availability, and process efficiencies when planning and executing projects. This disconnect results in resource constraints, project delays, cost overruns, and a failure to meet project objectives(Davila et al.,2023).

the absence of a well-defined operations strategy that supports project management can lead to inconsistent approaches, lack of coordination, and difficulty in resource allocation across projects. This lack of alignment hampers the organization's ability to leverage its operational strengths and optimize project outcomes. Additionally, the evolving nature of business environments, technological advancements, and changing customer demands further exacerbate the challenge. Organizations struggle to adapt their operations strategy to meet the evolving project requirements

and fail to incorporate agile and flexible approaches into project management practices(Mesías et al.,2020). **According to the problem statement, the current research tries to answer the following question:**

1. What is the reality of implementing the operations strategy (Process technology, Production planning and control, Management and Organization) within the project?
2. What are the challenges facing implementing the operations strategy within the project?
3. What is the impact of operations strategy on project management?

1.3. The importance of the research

Research on the impact of operations strategy on project management is important for several reasons:

1- Theoretical importance

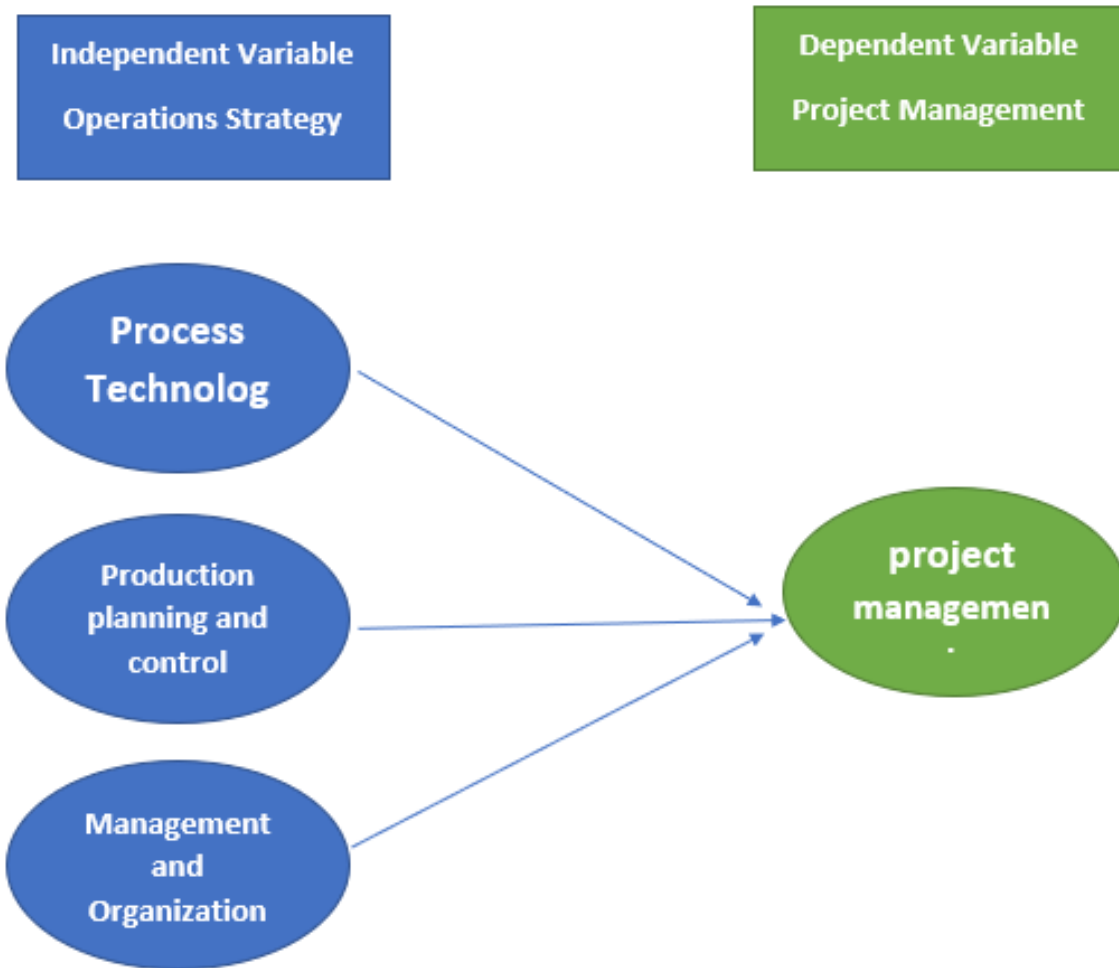
- ✓ Operations strategy decisions have direct impacts on project costs, helping organizations develop cost-effective strategies, improve financial performance, and ensure successful completion of projects within budget constraints.
- ✓ Operations strategy must be aligned with the organization's strategic objectives as it helps organizations ensure that projects contribute to achieving strategic objectives and enhancing the organization's competitive position.
- ✓ Operations strategy focuses on continuous improvement and enhancing efficiency through project management, identifying improvement opportunities, implementing best practices, improving processes, and achieving higher project performance.

2- Practical importance:

- ✓ Operations strategy plays a critical role in project success and understand the impact of operations strategy on project management by identifying the key factors that contribute to successful project outcomes.

- ✓ Operations strategy decisions can greatly impact risk management in project management. By understanding this impact, organizations can develop effective risk management practices to reduce project risk and enhance project success.

1.4. Research Hypotheses



It is clear to us from the previous figure, that the current research attempts to study The impact of operations strategy on project management:

1- The independent variable: The independent variable for research is represented in

- **Operations Strategy** (Process technology, Production planning and control, management and organization)

2- The Dependent variable: The dependent variable for research is represented in:

- **Project management**

Therefore, the current research is based on the following hypotheses

- There is a statistically significant effect of operations strategies on project management

1.5. Literature review

In this section, we will discuss previous studies and literature that previously addressed variables

- 1- Study by (Koch et al.,2015)‘ Title : Understanding operations strategizing in project-based organizations: middle managers’ interaction and strategy praxis.**

The study aimed to focus on the content of high-level strategies, and to a lesser extent on their practical implementation. Little attention has been paid to middle managers who mediate the distance between the strategic goal of production organizations and their operational reality. The role and strategic agency of these managers has been shown to be influential in shaping, disrupting, and enabling the operating system, but they remain surprisingly absent from much of the entrepreneurship literature. In this paper, we examine the role of middle managers in OS practice through a strategy-as-practice framework. We study two project-based organizations, one in Denmark and one in the United Kingdom, that are developing lean production processes. In the Danish case, the bottom-up change strategy was initiated by project actors, while in the UK, the top-down change strategy was imposed as a strategic management initiative. In both cases, middle managers played a crucial role in mediating and translating intentions. We show how the practical application of strategy and process leadership is highly distributed within project-based organizations regardless of where change begins. The findings have resonance for theory about

middle managers' agency, and for understanding micro-organizational activities of OS formulation and implementation within project-based forms of organization.

2- Study by (Yaghtim&Abbasi,2018‘ Title: Selecting appropriate operations strategy using project management concepts: An economic analysis approach

The study aims to have an effective operations strategy (OS) as an essential element in protecting the competitive capabilities of any company. The operating system supports the business strategy and should be carefully selected in such a way that it can position the organization among competitors. The main objective of this study is to provide valuable insights to project managers to choose the most suitable operating system for their organization using an economic analysis approach. We propose a seven-step algorithm that makes decision makers able to make the optimal decision to choose an organization's operating system based on the economic analysis of operating system alternatives. This is the first study that presents an operating system selection framework and includes project management and operating system contents. First we consider each OS alternative as a program (a set of projects) and define a set of projects for required actions at the intersections of the OS matrix related to each program. Then, by identifying the dependencies between each program's projects as well as providing some information about the projects, we can estimate the programs' cash flows. Thus, we can evaluate the software financially and choose the most profitable and suitable operating system. The presented algorithm helps managers implement the most financially effective operating system for their company. The validity of the algorithm was demonstrated by conducting a case study.

3- Study by (Oliveira et al.,2018)· Title: Critical success factors in project management: Analysis of the indicators that constitute the predecessors of strategy, people and operations.

The study aims to identify the critical success factors (CSF) practices that contribute to increasing the probability of success of any activity when implemented well. The study uses a quantitative approach and a descriptive nature through a survey applied to 115 professionals involved in project management. The study identifies the most important critical success factors that explain the performance of office project management among the indicators used to measure strategy, people, and processes. Based on the relationship between importance and performance, the study discusses factors that align with CSF in relation to project management. The research used structural equation modeling with partial least squares and analysis of importance and performance maps. The results showed that strategy is the most important predictor, and its main critical success factors are project management methodology, organizational structure, alignment of intentions, and economic and financial feasibility. In operations, the key critical success factors are the stability of the project environment in terms of risk management, quality management system, performance metrics, audits and verification of deliverables, and communication with stakeholders. For people, the key success factor is the acquisition of skills in project management and human resource training, with the aim of disseminating knowledge associated with good practices, methodologies, tools, and techniques that support project implementation.

4- Study by (Lris et al., 2019)· Title: A review of energy efficiency in ports: Operational strategies, technologies and energy management systems

The aim of the study is to conduct a systematic literature review to analyze operational strategies, technology usage, and energy management systems for improving the energy efficiency

and environmental performance of ports and terminals. The study identifies research gaps and future research directions and highlights the potential for ports to achieve further energy efficiency. The study emphasizes the importance of using innovative technology to transition from a carbon-intensive port industry to a low-carbon port model by harnessing renewable energy, alternative fuels, smarter power distribution systems, and energy consumption measurement systems. The study also highlights the need for stricter environmental regulations to limit pollutants and GHG emissions arising from energy consumption.

5- Study by (Picciotto,2020) ‘Title: Towards a ‘New Project Management ‘movement? An international development perspective

This study focuses on examining the limitations of traditional project management practices that are dominated by the principles of management by objectives. He points out that adaptable approaches to designing and managing projects in complex and turbulent operating environments can be promising, and projects conceived as experiments can contribute to sound decision-making at the top level of strategy formulation and policy making. The article also emphasizes the integrity and utility of contemporary project management scholarship and puts forward six recommendations grounded in development experience that may merit consideration by the emerging “new project management” movement. The study does not provide specific details about the six recommendations, but highlights that they are based on hard-earned lessons from development experience.

6- Study by (Korsunska et al.,2022)‘ Title: The role of Creative Potential in the Project Management Process for the Implementation of the Company’s Strategies

The aim of this study is to evaluate the role of creative capabilities in the project management process to implement company strategies. The study aims to determine the role of the company's creative capabilities in managing the company's projects and expanding potential opportunities to implement its development strategy. The study uses a set of analytical and logical research methods to determine the role of creative potential in the company's work regardless of its sector, and to identify the main aspects of innovative activity within the company in implementing creative solutions in its work. The main findings of the study include the identification of critical success factors for implementing creative solutions in project management, such as acquisition of skills in project management and human resources training, project management methodology, organizational structure, alignment of intentions, economic and financial feasibility, and stability. Project environment in terms of risk management, quality management system, performance measures, audits, verification of deliverables and communication with stakeholders. The study highlights the importance of creativity in business and innovation and the role of the leader in enhancing creativity. The study also underscores the need for project managers to creatively apply established practices and tools to successfully manage projects in today's volatile and complex marketplace. The study indicates that there is a need for more research to explore the options and prospects for introducing innovative solutions into the administrative processes of various companies, regardless of their sector, and the impact of these creative capabilities on the growth of companies and their transition to a new level. for development strategy.

7- Study by (Secundo et al., 2022).Title: Strategic decision making in project management: a knowledge visualization framework

The article aims to provide a visual representation of the knowledge involved in a system of project components and decisions to support project managers in addressing the right issues at

the right time. The study adopts a design science process to define initial objectives and requirements and to develop a knowledge visualization framework. The article identifies eight types of strategic decisions and presents a conceptual map of the project decision-making process that addresses six categories of knowledge. The framework can support project managers who are trying to build a comprehensive view of project decisions and can be a basis for developing new types of knowledge management systems for project-related applications. The article proposes a new approach to support strategic decision making in project management by adopting a knowledge visualization point of view and provides an operational tool for managers and analysts at different levels involved in project management

Research methodology:

1. Method:

This study relied on the descriptive analytical approach to identify the reality of implementing the operations strategy (operations technology, production planning and control, management and organization) within the project, to know the challenges facing the implementation of the operations strategy within the project, and to study the impact of strategic operations on project management.

2. Research Sample

- In order to create reliable data, a survey will be conducted to apply the research to a number of engineers in engineering projects

3. Research Tools

- The questionnaire will be used as a research tool, which will be applied to the selected sample in order to create reliable statistical results and indications.

4. Statistical Methods

The study will use some of the statistical tools used, which can be stated as follows:

- Linear regression coefficient
- The arithmetic mean and standard deviation will be used to answer the study questions.

Research structure

- ✓ **First chapter** : Problem of the study and its importance
- ✓ **Second chapter** : Operations Strategy
- ✓ **Third chapter** : Project management and correlation between operations strategy and project management
- ✓ **Fourth chapter** : Methodological procedures
- ✓ **Fifth chapter**: Field Result
- ✓ **Sixth chapter** : Result and Proposal Analysis
- ✓ **Arabic and English References**

Research limits

- **Time limits**: This study will be conducted during the first semester of the 2023-2024 academic year.
- **Spatial boundaries**: administrative projects to identify the reality of implementing the operations strategy (operations technology, production planning and control, management and organization) within the project, to know the challenges facing the implementation of the operations strategy within the project, and to study the impact of strategic operations on project management.

- **Human limits:** The application will be applied to a number of engineers

2. Initial reference list

- 1- Bordoloi, S., Fitzsimmons, J. A., & Fitzsimmons, M. J. (2019). *Service management: operations, strategy, information technology*. McGraw-Hill.
- 2- Davila, A.N., Lopez, J.R., Basso, M., Rossi, L., & Barrera, E. (2023). Integrated Risk Management Strategy for Offshore Drilling Operations. *Day 1 Mon, October 02, 2023*.
- 3- Demirel, Ş., & Camcı, A. (2022). Project Management vs Product Management: A View on The Journey From Project to Product in Software Development. *Proceedings of the International Conference on Industrial Engineering and Operations Management*.
- 4- Iris, Ç., & Lam, J. S. L. (2019). A review of energy efficiency in ports: Operational strategies, technologies and energy management systems. *Renewable and Sustainable Energy Reviews, 112*, 170-182.
- 5- Koch, Christian & Sage, Daniel & Dainty, Andrew & Simonsen, Rolf. (2015). Understanding operations strategizing in project-based organisations: middle managers' interaction and strategy praxis. *Engineering Project Organization Journal*. 5. 1-12.
- 6- Korsunska, M., Butorina, V., Abdullayev, K., Kravtsov, Y., & Ustymenko, L. (2022). The role of Creative Potential in the Project Management Process for the Implementation of the Company's Strategies. *Review of Economics and Finance*, 20(1), 255–262.
<https://doi.org/10.55365/1923.x2022.20.30>
- 7- Mesías, F.G., Guevara, H.C., Venero, C.A., Espinoza, A.M., Salazar, R.C., & Morales, C.A. (2020). Sagari Project: Towards a Strategy for Sustainable Environmental Management.

- 8- Oliveira, R. R., Cruz, J. E., & Oliveira, R. R. (2018). Critical success factors in project management: Analysis of the indicators that constitute the predecessors of strategy, people and operations. *REVISTA DE GESTAO E PROJETOS*, 9(3), 49–65.
- 9- Picciotto, R. (2020). Towards a ‘New Project Management ‘movement? An international development perspective. *International Journal of Project Management*, 38(8), 474-485.
- 10- Secundo, G., Elia, G., Margherita, A., & Leitner, K. H. (2022). Strategic decision making in project management: a knowledge visualization framework. *Management Decision*, 60(4), 1159-1181.
- 11- Sirisomboonsuk, P., Gu, V. C., Cao, R. Q., & Burns, J. R. (2018). Relationships between project governance and information technology governance and their impact on project performance. *International journal of project management*, 36(2), 287-300.
- 12- Yaghtin, M., & Abbasi, M. (2018). Selecting appropriate operations strategy using project management concepts: an economic analysis approach. *International Journal of Business and Systems Research*, 12, 148-161.
- 13- Yaghtin, M., & Abbasi, M. (2018). Selecting appropriate operations strategy using project management concepts: An economic analysis approach. *International Journal of Business and Systems Research*, 12(2). <https://doi.org/10.1504/IJBSR.2018.090691>