Review of: "Contrasting Construction and Business Projects: Implications for Project Management Techniques"

Petro Hrytsiuk[1]

1 National University of Water and Environmental Engineering

Potential competing interests: No potential competing interests to declare.

This is a review of the first version of the article. Unfortunately, I am limited in time and cannot review the updated version of the article.

Introduction. The article is dedicated to a timely topic that is insufficiently covered in the scientific literature. The author possesses extensive practical experience in project management and theoretical methods for justifying project management methodologies. Therefore, their analysis of differences between construction projects and other types of business projects largely relies on personal experience and is crucial and valuable for project administration practitioners and theorists in this field. However, the topic is so important that it can and should be explored more deeply.

Key Points of the Author. Let's first review and highlight the main points of this publication that are important and worth agreeing with:

1. Approaches to achieving success should be chosen based on the type of project.

2. Any changes in the organization's operations require a project.

3. It is possible to construct a graph of a construction project and correlate the implementation of project stages with the critical path on the graph. Such an approach is not feasible in the implementation of business projects.

4. Most risks in a construction project are generally known and covered by the sum of unforeseen expenses included in the price. The results and effectiveness of the implementation of a business project are inherently unclear in advance. The reasons for this include the inability to accurately forecast demand for a new product, the precise calculation of economic benefits from implementing new technology, and the accurate calculation of benefits and costs in mergers or acquisitions.

5. A construction project is developed by a small group of people, while a large team of workers executes it. Business projects are smaller and the project manager performs a larger part of scheduling and expense tracking.

6. Location and Resources: Most construction tasks are carried out at a single worksite by middle-skilled workers. Business projects are often geographically dispersed, with many team members working part-time.

7. Skills: Construction skills, while important, are relatively interchangeable. For business projects, key individuals often need unique skills related to the product or organization.

8. Management. A construction site project manager must have authority and adhere to construction standards. Business project managers typically operate based on conviction, experience, current financial benefit assessment, and an understanding of prevailing policies.

9. Flexibility in the Project Manager's Mindset: Some adaptability to changing circumstances is necessary in the construction environment, but it can be critically important for business projects as well.

10. The effectiveness of a construction project can be assessed by its final results. The efficiency of a business project is determined by the satisfaction of the business with the project's outcomes.

Comments and Suggestions. Most of the points in the article are indisputable and do not require comments. However, due to the importance of the topic, some aspects need to be expanded and deepened.

1. "Any changes require a project." In our opinion, when planning a project, it is necessary to identify the risks that may necessitate project changes. This could be an oversight by the authors or difficult-to-predict issues (force majeure circumstances, unfavorable economic conditions, additional client requirements). Any changes lead to an increase in project costs. Therefore, in the final stage of creating a business project, when allocating reserve funding for unforeseen circumstances, an analysis of the probability of unforeseen problems and situations and possible ways to address them should be conducted.

2. As the author notes, in construction, a common phenomenon is "wave-like" planning, where activities are detailed only as they approach the moment of execution. However, it is known that the cost of rectifying errors in a construction project increases at each stage of the project. This is related to the rigid fixation of construction elements at each stage. Therefore, identifying such errors at an early stage of project implementation is crucial [1]. This can significantly save costs in project implementation. As for other business projects (e.g., developing a new smart product for the market), this dependence is absent. Here, individual project blocks are more independent, and they can be implemented simultaneously or even swapped.

3. Example 4, provided by the author (merging two departments), falls under the management section titled "Mergers and Acquisitions." The processes of merging and merging units and entire companies are a necessary aspect and accelerator of economic development. There is a considerable amount of research dedicated to the planning, assessment, and effectiveness of these processes [2].

4. "In practice, non-financial benefits often contribute to the realization of a business project". This statement by the author is interesting; however, it is not sufficiently elaborated in the following exposition.

5. Financial Risks of Projects. Another distinction between construction projects and other types of business projects is related to the project's demand and the corresponding financial risks. The demand for construction projects is typically evident in advance. For example, the construction of a bridge is necessary for many citizens and for improving the transportation logistics of an area. This reduces the financial risk of project implementation. In contrast, when developing

new products for the market, the degree of demand is not always obvious. It is challenging to predict in advance how much demand the new product will have among buyers. Therefore, the financial risk of implementing such a project is high.

6. Risk of misuse. When developing a new product or technology, it is always necessary to assess the risk of misuse and the threats it may pose to the environment. While in construction, such risks are minimal because it is challenging to change the intended purpose of a structure, in other industries, the situation may not be as favorable.

For example, social networks can be used not only for interpersonal communication, but also for targeted influence on a certain segment of the audience. Such influence can be exploited in the interests of individuals or political groups.

Generative artificial intelligence tools can be successfully applied in all sectors of economic and social activities. However, the widespread concern revolves around the use of AI for the benefit of specific criminal groups or terrorist organizations. It is evident that projects of this nature should include a section on "Preventing the Misuse of the Product".

7. Common to all types of projects is that the productivity of project development and implementation is significantly enhanced through the use of computer information systems and technologies. Building Information Modeling (BIM) technology is widely utilized in construction for both project development and supervision during implementation. In manufacturing, products benefit from Manufacturing Execution Systems (MES), which are employed for real-time control and management of production processes. An essential logistics tool is Supply Chain Management (SCM), used for planning, controlling, and monitoring all supply chain processes from suppliers to end consumers. These systems enable supply chain optimization and efficiency throughout the process.

In trade and marketing, Customer Relationship Management (CRM) is employed. CRM systems are used to manage interactions with customers, including contact management, sales, marketing, and customer service. They enable companies to interact more efficiently with customers and enhance customer satisfaction.

8. Use of AI. Another commonality among all projects is the recent intensive integration of artificial intelligence tools into project development and management. Importantly, artificial intelligence is not limited to high-tech industries. In construction, for instance, AI is employed to monitor projects for errors, automate planning, identify inefficiencies in document flow, and conduct site inspections. In other sectors, media and telecommunications companies use AI to offer targeted content, provide a more personalized experience, and automate their editorial processes.

Artificial intelligence can automate and expedite repetitive operations that occur multiple times (e.g., chatbots for customer communication). AI tools can be used for predictive analytics (demand for goods, product prices), monitoring and managing risks, and controlling and managing expenses. Considering all the above, it should be noted that while artificial intelligence can be an excellent executor of detailed instructions provided by humans, it is not capable of generating new ideas and solutions on its own.

9. Project Reengineering. It is essential to specifically address project reengineering [3]. Reengineering is the process of reviewing and transforming old, outdated, or inefficient processes to enhance their effectiveness. Reengineering is

planned and controlled by several individuals, and its effectiveness (or ineffectiveness) often becomes evident immediately after implementation.

Reengineering in construction projects involves the review and transformation of construction plans or structures to improve their quality, efficiency, construction timelines, and costs. This process may include a review of all stages of the construction project, from conceptual design to completion, to find ways to optimize processes and achieve more efficient results.

Business process reengineering is a radical approach to improving a business process. Its success relies on the innovation and creative abilities of the process improvement team. This approach provides a new perspective on the goals of the process and completely ignores the existing process and organizational structure. It starts from scratch, as if you were just beginning to develop this process. If conducted correctly, business process reengineering reduces the error rate, costs, and cycle duration. This approach is used when the current process is so outdated that it is not worth trying to preserve or improve it.

Reengineering of construction projects and reengineering of other business projects may vary depending on the nature of the processes undergoing review and optimization. Here are some differences between them:

a) Nature of projects: In construction projects, reengineering typically involves optimizing construction processes, resource utilization, and production processes to achieve more efficient and economically viable results. In business projects in other fields, it may include reviewing and transforming various processes such as business management, marketing, production, customer service, etc.

b) Technologies and methods: In construction projects, reengineering may involve the use of new construction technologies, materials, and methods to improve construction efficiency. In business projects in other fields, this may encompass the implementation of new information technologies, process automation, the introduction of effective management strategies, etc.

c) Timeframes: In construction projects, reengineering may require significant time investment due to the physical nature of construction work and processes. In business projects in other fields, reengineering may be faster, as it is often associated with optimizing processes that can be more easily adapted or transferred to a digital platform.

d) Specific requirements: Reengineering of construction projects may require compliance with construction standards, rules, and regulations that can impact the change processes. In business projects in other fields, this may involve compliance with management rules, legal aspects, and business standards.

References

1. R. Trach, M. Polonski, P. Hrytsiuk. Modelling of Efficiency Evaluation of Traditional Project Delivery Methods and Integrated Project Delivery (IPD). 2019 IOP Conf. Ser.: Mater. Sci. Eng. 471 112043
2. Mergers and Acquisitions: What's the Difference? By Christina Majaski. Corporate Finance. M&A. Updated April 30, 2021

3. H. James Harrington, K. Esseling, Van Nimwegen. Business Process Improvement Workbook: Documentation, Analysis, Design, and Management of Business Process Improvement. McGraw-Hill Education, 1997. – p. 314.