

## Reviewer's report

for the doctoral thesis of Ing. Jan Špatenka  
submitted at the Faculty of Business and Management BUT

**Title:**           **Modification of the Methodology for the Implementation of Information Systems Involving Elements of Digitalization and Remote Collaboration**

**Supervisor:**   **doc. Ing. Miloš Koch, CSc.**

The main objective of this doctoral thesis is to provide a novel methodology for the implementation of business information systems by integrating elements of digitalization and remote collaboration in a rigorous and relevant way. More specifically, the dissertation aims to determine how these two phenomena - whose importance has significantly increased with the recent digital transformation and the pandemic - can enhance each phase of the project life cycle, improving the project's *triple constraint* (time, cost, scope, and quality).

The author combines secondary research (a systematic and bibliometric literature review) with primary research using the Design Science Research (DSR) paradigm and focus groups. This approach leads to the development of an artifact - a modified methodology - validated through iterative DSR cycles.

- **The topicality of the subject of the doctoral thesis**

The doctoral thesis tackles a highly topical issue, concerned with the success of information systems (IS) projects implementation, in the context of ongoing digital transformation and the rise of hybrid work models. By focusing on the integration of digitalization and remote collaboration into business IS implementation methodologies, it addresses a key challenge faced by organizations aiming to adapt their project management practices to new technological and organizational realities. Overall, the research is relevant as it is anchored in major contemporary societal and economic transformations, including the digitalization of business processes, the post-pandemic shift towards hybrid organizational forms, and the growing strategic importance of enterprise systems in enabling business agility. These developments have profoundly impacted how organizations plan, implement, and manage IS projects, making it essential to revisit and adapt traditional project management frameworks.

The subject is original in that it shifts the perspective from digitalization as an output of IS projects to digitalization as an enabler within the implementation process itself. This reframing is under explored in current research and brings a novel contribution to the field.

From an academic perspective, the work is concerned with both information systems and project management disciplines and mobilises the Design Science Research paradigm to ensure methodological rigor and practical relevance. Its alignment with contemporary trends in enterprise system deployment, project lifecycle management, and digital work makes it particularly relevant for both academic and professional communities.

- **The stated goal of the thesis, the process of its implementation and the methods used**

To reach the main goal stated in the doctoral thesis – i.e. to provide a novel methodology for the implementation of business information systems by integrating elements of digitalization

and remote collaboration -, the candidate lists five sub-goals: Identification of an appropriate implementation methodology as a foundation for further adaptation; Critical review of the state of the art based on a systematic literature review; Empirical validation of the growing interest in the integration of digitalization and remote collaboration in IS projects; Determination of meaningful levels of involvement of digital and remote collaboration tools within the project life cycle and its triple constraint (time, cost, scope); Exploration of alternative methodological approaches, considering different implementation environments.

These sub-goals are clearly formulated and reflect the author's intention to address both theoretical and practical dimensions of the research question. That said, the number of sub-goals - while demonstrating the ambition and scope of the project - may at times fragment the narrative and would have benefited from greater synthesis to strengthen the coherence of the overall research design.

The thesis follows a structured Design Science Research (DSR) methodology, combining a systematic literature review (including bibliometric mapping using VOSviewer) with empirical data collection through focus groups and iterative development cycles. This choice is particularly relevant, as it allows the doctoral student to both design and validate a practical artifact (a modified IS implementation methodology), grounded in empirical reality and academic rigor. The chosen methodology and the collected data are rich and well structured. The process is structured in line with DSR standards and is supported by three iterative cycles:

- The relevance cycle, based on feedback from practitioners involved in EIS projects (including both client and supplier perspectives);
- The design cycle, during which a methodological artifact (i.e., a modified project implementation methodology) was developed and refined;
- The rigor cycle, which draws upon academic literature and secondary data (e.g., Eurostat, Czech national data sources).

The combination of literature analysis and stakeholder engagement strengthens credibility to the process and shows that the candidate has made a sustained and serious effort to ground his research in both theory and practice.

- **The process of addressing the issue and results of the doctoral thesis including indication of the specific contribution of the doctoral student**

As already argued, the dissertation addresses a highly relevant problem: how to adapt and enrich project management methodologies for business IS implementations by meaningfully integrating elements of digitalization and remote collaboration. To tackle this issue, the author combines a structured literature review, a bibliometric analysis, and qualitative focus group interviews, all embedded in a Design Science Research (DSR) framework.

That said, some elements of the thesis structure could have been clarified, to strengthen, the process of addressing the issue. For instance, the formulation of research questions appears only late in the manuscript (pages 64–65), and all six questions are presented on the same analytical level, without distinction between exploratory, descriptive, or design-oriented contributions. This can dilute the focus of the thesis and make it harder to assess the specific nature of the Ph.D candidate's contribution. In particular, some research questions are rather descriptive in tone (e.g., “Are there any extraordinary parts of the project phases in terms of using digitalization and remote collaboration elements?”), which may not fully reflect the analytical ambition of the overall doctoral thesis level.

The results of the doctoral thesis are promising, especially from a practical point of view. The academic contribution of the proposed methodology would have perhaps benefitted from stronger and more systematic positioning in relation to existing project management frameworks (e.g., SAP Activate, Microsoft Sure Step). The novelty and originality of the “method” artifact would have been made more convincing. While the author convincingly demonstrates the convergence between digitalization and remote collaboration, the potential tensions or trade-offs between these two elements - such as the balance between standardization and agility - remain slightly underexplored. The literature on *remote project management* and *virtual teams* could have helped enrich this discussion (e.g., Ugochukwu et al., 2025; Emmanni, 2023).

- **Formal qualities of the doctoral thesis and its language level**

The doctoral thesis is written in English and demonstrates overall a good level of formal quality. The document is carefully formatted, with a clear structure and consistent use of figures, tables, and references. Captions are correctly inserted, and sources are systematically mentioned, reflecting the candidate’s attention to detail and compliance with academic writing conventions.

The language level is generally appropriate, and the writing is fluent and accessible. Perhaps, some parts would have benefitted from more precise conceptual framing or a more critical academic tone - especially in the introduction and in the main concepts’ definitions. In fact, certain statements appear as taken for granted (e.g., “*It is therefore logical that the natural goal of every manager is to cover the maximum number of company processes with an information system so that the processed data is as comprehensive as possible and thus has a high relevance for further managerial decision-making*”), where further justification and referencing would have strengthened the scientific positioning.

Still at the formal level, the document would also benefit from greater homogenization in chapter introductions: while some chapters (e.g., chapter 3) open with guiding sentences to help the reader understand the structure and intent of the section, others (notably chapters 1 and 2) would gain from a brief framing paragraph. The lack of a clearly announced plan in the early part of the manuscript may hinder the reader’s navigation and overall comprehension.

Concept definitions are present and relevant (e.g., for project management, digitalization, remote collaboration, ERP systems), but these are sometimes treated independently, which might decrease the strength of the arguments and the integration into a coherent conceptual framework.

- **The importance for practical implementation and development of the field**

The doctoral thesis addresses a topic of high practical relevance, particularly for organizations engaged in complex information system (IS) implementation projects in an increasingly digital and distributed working environment. The contribution of the doctoral student also lies in the application of DSR to a domain where it is still underutilized in the Czech context, and in the formulation of a pragmatic methodological tool that could support organizations in adapting to post-pandemic digital working environments. The inclusion of stakeholder voices through focus groups demonstrates methodological care and practitioner relevance.

However, the novelty of the proposed methodology in comparison with existing frameworks such as SAP Activate or Microsoft Sure Step could be further clarified to better highlight its

specific added value, especially for non-practitioners (cf. Page 134 in the conclusion)— a point that the candidate could have the opportunity to discuss further during the defence.

- **Questions addressed to the candidate:**

**Question 1:**

The notion of “success” is central to your thesis, particularly in defining what constitutes an effective implementation methodology for business IS. Yet, this concept remains somewhat implicit in your introduction. Could you clarify how you define “success”? Do you evaluate it mainly in terms of project management efficiency (time, cost, scope), or do you also include broader strategic and organizational outcomes?

In information systems research, DeLone and McLean (2003) propose a multidimensional understanding of success including system quality, user satisfaction, and net benefits, while Budzier and Flyvbjerg (2011, 2016) argue that success should be assessed through the project’s ability to deliver sustainable business value and avoid systemic risk or “black swan” failures. How does your approach position itself between these two perspectives?

**[Suggested references for question 1]**

DeLone, W. H., & McLean, E. R. (2003). The DeLone and McLean model of information systems success: A ten-year update. *Journal of Management Information Systems*, 19(4), 9-30.

Budzier, A., & Flyvbjerg, B. (2011). *Double whammy—How ICT projects are fooled by randomness and screwed by political intent* (Saïd Business School Working Paper).

Flyvbjerg, B. (2016). The fallacy of beneficial ignorance : A test of Hirschman’s hiding hand. *World Development*, 84, 176-189.

**Question 2:**

In your discussion of the research gap, you assert that no prior studies have explored the role of remote collaboration in implementation projects. However, there is an existing body of literature on remote project management and virtual teams - particularly in the context of agile, distributed, or hybrid work settings. Could you clarify how you positioned your work in relation to this existing research? For instance, studies such as Somanathan & Sureshkumar (2023), Emmanni (2023), or Ugochukwu et al. (2025) examine related issues of remote coordination, collaboration tools, and project delivery under virtual conditions. How does your work differentiate itself, and why were these contributions not explicitly included in your literature review?

**[Suggested references for question 2]**

Somanathan, S., & Sureshkumar, S. (2023). Optimizing agile project management for virtual teams: Strategies for collaboration, communication, and productivity in remote settings. *International Journal of Applied Engineering & Technology*, 5(S2), 161–170.

Emmani, P. S. (2023). The impact of remote work on agile project management. *Journal of Scientific and Engineering Research*, 10(2), 202–207.

Ugochukwu, E. S., Khan, S., Jonathan, G. M., & Aasi, P. (2025). IT project management in a remote work environment. *Procedia Computer Science*, 263, 539–547.

**Question 3:**

On page 15, you write about “finding the most appropriate combination of methodologies in order to maximize the efficiency and likelihood of successful implementation.” While this is a laudable objective, it may come across as somewhat optimistic or even prescriptive. In highly complex and dynamic project environments - especially those involving cross-functional teams, evolving stakeholder requirements, and external constraints - can we realistically assume that such an optimal combination can be identified and planned *ex ante*? How does your proposed methodology account for uncertainty, iteration, and emergent change throughout the implementation process?

**Question 4:**

Your focus is on the implementation phase, but success also depends on how systems are used in practice. How do you consider this post-implementation dimension? Do you envision a link between the project methodology and the effective appropriation or usage of the system?

**Question 5:**

You rightly highlight the proliferation of emerging technologies - AI, Big Data, Cloud, Blockchain, etc. - but your research scope focuses only on the “Digital Technology and Application” category, as defined by Wang et al. (2022). Could you elaborate on why this category was prioritized over others, particularly AI and Big Data, which have received significant attention in recent years? Given the rapid rise of generative AI tools since 2023 (e.g., ChatGPT, Copilot), which are transforming collaboration and project work, wouldn't it have been valuable to explore how these tools are reshaping digital project environments?

- **Conclusion**

I state that the submitted dissertation of Ing. Jan Špatenka, on the topic Modification of the Methodology for the Implementation of Information Systems Involving Elements of Digitalization and Remote Collaboration **meets** the requirements of the dissertation thesis in accordance with § 47 of the Act on Higher Education No. 111/98 Coll. Therefore, I **recommend** the submitted dissertation for defense and after successful defense I **recommend** Ing. Jan Špatenka, to obtain the doctoral degree (Ph.D.) in the study program Company Management and Economics. The student **demonstrated** creative abilities in the given field of research.

Nice....., October 22<sup>nd</sup>, 2025.....



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Name of the reviewer