Building Information Systems for the Digital Firm: Information Systems Development as a Planned Organizational Change

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Abstract

In today's fast-paced business environment, the implementation of digital transformations is becoming a key element for companies to gain a competitive advantage, improve operational integration, and increase operational efficiency via the adoption of advanced technologies and digital platforms. However, despite the substantial investment in IT by companies across all sectors, many IT-enabled change initiatives have failed to produce the desired organizational results. Thus, it is clear that developing technology capabilities alone is not enough. This study will examine the process of implementing new information systems as a formalized, organization-wide change initiative in the context of digital transformations. In addition to synthesizing relevant prior literature in the Management Information Systems area, this study utilizes a single-case example of an Enterprise Resource Planning (ERP) project implemented in the banking industry to demonstrate how the approach used in developing systems interacts with organizational factors, including leadership, organizational culture, and the use of change management processes. The study's findings indicate that a company's ability to successfully implement a digital transformation will depend on a continued commitment from leadership to engage with the system development process, aligning the system development process with the overall organizational strategy, and proactively managing the social/organizational dynamics associated with the system development process. The study also illustrates that system development initiatives should be treated as long-term organizational change initiatives rather than as short-term, independent technology projects. Finally, this research adds value to the MIS body of knowledge by supporting the notion that information systems development should be viewed through the lens of an organizational change process and provides practical guidance for managers involved in planning and executing digital transformation initiatives.

Keywords: *Information Systems,Digital Firm, Organizational Change*

1. Introduction

In today's rapidly evolving digital landscape, digital transformation has emerged as a key strategic imperative across both the public and private sectors. This shift towards digital transformation is being driven by the exponential growth of digital technologies and the increasing pressure to innovate and remain competitive. As a result, information systems are becoming increasingly important in changing organizational processes and services, and creating greater value.

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Despite large-scale investment in digital initiatives, many information systems development projects continue to experience delays, resistance, or fail to realize anticipated organizational returns, indicating that having sufficient technological capability is no guarantee of successful outcomes (Bellantuono et al., 2021; Burns, 1993).

The Management Information Systems (MIS) research community has increasingly emphasized that the development of information systems needs to be seen as a planned organizational change, rather than simply as a technical or project-based endeavor. Complex systems implementations typically result in fundamental changes to organizational structure, work practice, and decision-making processes. These changes introduce significant social, cultural, and political challenges that need to be proactively managed (Pettigrew, 1990; Silva & Hirschheim, 2007). Ignoring these organizational aspects of information systems development is likely to lead to resistance, lack of alignment, and underuse of new systems.

The traditional approaches to developing information systems, which are linear and plan-driven, have been criticized for their inability to adapt to the rapidly changing nature of digital environments. Contemporary approaches such as agile and iterative development emphasize adaptability, stakeholder engagement, and continuous feedback. While there are many advantages to using these approaches, prior studies indicate that their success will depend upon the level of support from leaders, the willingness of employees to adopt new ways of working, and the degree of alignment between the approach used and the organization's strategy (Day & Smith, 1996; Zhang et al., 2024).

Thus, the objective of this study is to examine information systems development as a planned organizational change process within the context of digital transformation. Based on a review of relevant literature and illustrated through the use of a case of an ERP system implementation in the banking sector, this study identifies the relationships between approaches to system development and organizational factors, including leadership, culture, and change management practices. This study aims to contribute to the body of knowledge regarding the necessary conditions for the effective and sustainable implementation of digital transformation initiatives.

2. Literature Review

2.1 Information Systems Development as Planned Organizational Change

All previous studies have emphasized that Information Systems Development (ISD) must be recognized as a specific type of planned organizational change, rather than merely as a technical or project-oriented activity. Both early and contemporary research support the notion that ISD projects ultimately alter organizational structures, workflows, and decision-making processes, necessitating thoughtful change management strategies to ensure the successful implementation of ISD initiatives (Burns, 1993; Pettigrew, 1990). As more organizations utilize integrated

systems to support strategic and operational objectives in their digital transformations, this perspective has regained importance.

The research reviewed in the literature indicates that digital transformation initiatives that successfully integrate organizational change management practices with ISD processes are far more likely to achieve the desired outcomes from their ISD projects. The research has demonstrated that system implementation outcomes are significantly impacted by various factors, including leadership commitment, strategic alignment, and organizational readiness (Bellantuono et al., 2021; Zhang et al., 2024). The findings from recent research demonstrate that treating ISD as simply an isolated function results in a misalignment between the technological capabilities of developed systems and the organization's needs, ultimately undermining digital transformation efforts.

Further, the literature has identified that digital transformation initiatives are inherently complex and contextual, as they involve interactions between technological innovation, organizational culture, and external environmental pressures. The research conducted using both socio-technical and processual perspectives has demonstrated that system development unfolds over time and is shaped by organizational politics, power relations, and institutional constraints (Silva & Hirschheim, 2007; Gillani et al., 2024). Therefore, planned organizational change frameworks provide a more holistic perspective for understanding how information systems contribute to sustainable digital transformation.

2.2 System Development Approaches in Digital Transformation

Previous studies have investigated the role of system development methodologies in supporting organizational change during digital transformation. Traditional System Development Life Cycle (SDLC) approaches are characterized by linear phases, detailed upfront planning, and limited flexibility. While SDLC approaches provide structure and control, multiple studies indicate that SDLC approaches are often ill-suited to the dynamic and uncertain environments associated with digital transformation initiatives (Day & Smith, 1996).

Conversely, modern development approaches such as Agile and iterative methodologies emphasize adaptability, continuous learning, and collaboration among technical teams and organizational stakeholders. The reviewed studies suggest that Agile and iterative development approaches are better aligned with the evolving nature of digital transformation, as organizations are able to respond more effectively to changing requirements and user feedback (Zhang et al., 2024). However, the literature cautions that Agile practices alone do not guarantee success, as long as there is a lack of organizational readiness and/or leadership support.

Important to note is that the effectiveness of modern system development approaches is dependent upon organizational conditions. Studies highlight that without clear strategic direction, strong governance mechanisms, and sustained leadership involvement, even flexible development methodologies may fail to deliver desired transformation outcomes (Sloot et al., 2024). This further reinforces the argument that system development methodologies must be embedded within broader organizational change strategies to support digital transformation (Zanganeh et al., 2024).

2.3 Organizational Factors Influencing System Development Success

A significant body of literature has identified organizational factors as critical determinants of information systems development success in digital transformation contexts. Leadership support emerges as one of the most frequently cited enablers, with studies emphasizing the role of top management in setting vision, allocating resources, and legitimizing change initiatives (Pettigrew, 1990; Bellantuono et al., 2021). Leadership involvement is especially important in addressing resistance and ensuring alignment between system objectives and organizational strategy.

Organizational culture and employee engagement are also recognized as significant influencers. The literature indicates that cultures characterized by openness to change, collaboration, and learning are more favorable to successful system adoption. On the other hand, rigid structures and resistance to new ways of working can limit system implementation and reduce the realization of digital transformation benefits (Silva & Hirschheim, 2007). Therefore, employee involvement throughout the system development process is considered essential to promote ownership and reduce resistance.

Finally, studies highlight the importance of strategic alignment between information systems initiatives and organizational goals. Digital transformation initiatives that lack coherence between IT investments and business strategy often result in fragmented systems and suboptimal outcomes. The literature consistently stresses that alignment across technological, organizational, and strategic dimensions is necessary to ensure that system development initiatives provide meaningful contributions to organizational transformation (Burns, 1993; Zhang et al., 2024).

2.4 Synthesis and Research Implications

Overall, the prior research indicates that there are similarities across all the prior studies concerning the importance of viewing the development of information systems as a change process for the organization to implement its digital transformation strategy. As such, many different methodologies and models have been developed to assist in the planning of change management and system development. However, despite the development of these methodologies and models, the majority of researchers agree that there continue to be challenges associated with the application of the methodologies and models in various contexts, and that the application of the methodologies and models continues to be impacted by the organizational context, the type of organizational change, and the individual perceptions and behaviors of the employees who will ultimately utilize the new systems.

Prior research has provided a strong theoretical base for studying information system development and the actual practices used to develop information systems in real-world settings. Specifically, prior research has supported the use of empirical case study methodology to study how the practices used to develop information systems interact with the context of the organization in which they are being implemented to facilitate or hinder the successful implementation of digital transformation. The insights gained from this prior research provide a framework for the discussion and analysis section of this dissertation to apply the theoretical perspectives to the experience of implementing an Enterprise Resource Planning (ERP) system in a Greek bank to further examine the realities of planned organizational change in practice.

3. Discussion and Analysis: ERP Implementation as Planned Organizational Change

To illustrate information systems development as a planned organizational change, this paper draws on a case of ERP implementation in a Greek bank reported by Kaniadakis (2012). The case demonstrates how ERP adoption extended beyond a technical project to become a long-term organizational restructuring effort shaped by leadership involvement and socio-organizational dynamics.

3.1 ERP Implementation Beyond a Technical Project

The ERP implementation in the Greek bank was not viewed as a short-term, project-based IT initiative, but instead as a long-term organizational restructuring effort that was part of broader economic, social, and institutional contexts. As documented in the prior literature, the ERP

system development occurred over time and was influenced by the interactions of the technological requirements of the ERP system, the organizational structure, and the external environmental pressures. Therefore, prior research supports the claim that the development of information systems in digital environments cannot be successfully managed using narrow, technically focused project management methodologies alone.

As discussed in the prior literature, the ERP implementation in the Greek bank was motivated by strategic intentions, including improving the level of integration of operational activities, increasing the level of transparency of information, and responding to competitive pressures in the banking industry. These strategic intentions align with the broader strategic intent of digital transformation and support the notion that ERP systems enable the digitalization of organizations. However, to achieve the intended outcomes, significant changes to existing workflows, job roles, and coordination mechanisms were necessary, supporting the idea that the development of systems always leads to organizational change.

3.2 Leadership and Change Management in System Development

Leadership was instrumental in shaping the ERP implementation process in the Greek bank. The case study illustrates that the involvement of top management went beyond providing formal approvals and allocating resources to also include engaging in ongoing negotiations, sense-making, and mediation among diverse stakeholders. Prior research emphasizes the importance of leadership support as a major factor in determining the success of system development, especially in large-scale digital transformation projects.

Multiple actors participated in the ERP implementation process in the Greek bank, including senior executives, middle managers, IT specialists, external consultants, and end-users. The interactions among these actors produced a complex change environment in which competing interests, power relationships, and organizational politics influenced decision-making (Markus, 1983). Furthermore, unlike a linear change model, the implementation of the ERP system evolved continuously and reflected a processual model of organizational change. This further supports the contention that system development must be proactively managed as a social and organizational process, and not simply as a technical implementation.

Therefore, change management practices were essential to the ERP initiative. The case study illustrates that the leadership's efforts to align stakeholder expectations, mitigate resistance, and legitimate the system were important factors in sustaining momentum throughout the implementation. These results parallel the findings of the prior literature regarding the necessity of communication, participation, and visible

leadership as essential mechanisms to mitigate resistance during system development.

3.3 Organizational Impact and Socio-Organizational Transformation

The ERP system implementation resulted in significant organizational impacts that exceeded improvements in the technical infrastructure. The ERP system facilitated the integration of previously fragmented systems and standardized business processes, and thus transformed the routine activities, responsibility structures, and coordination patterns within the bank. The changes made to the routine activities, responsibility structures, and coordination patterns of the bank's employees illustrated the close relationship between technology and organizational practices, and therefore, the extent to which the development of information systems can affect the organizational culture and the daily operations of an organization.

While the case frames ERP implementation as a techno-organizational transformation, this framing supports the idea that both technological and organizational change are interdependent. Therefore, the case illustrates that the social-technical approaches to digital transformation, described in the literature, suggest that the success of a digital transformation depends upon the relationship between the design of the technology system and the organizational environment into which the technology will be introduced.

Moreover, the case illustrates that the scope of the effects of an ERP implementation extends beyond the boundaries of the organization. The effects of ERP implementations can include changes in the relationships among an organization’s customers, regulators, suppliers and other external stakeholders.

Therefore, the case supports the literature's contention that digital transformation projects occur in a broad institutional and socio-economic context. In addition, the case illustrates that system development decisions can lead to wide-ranging effects beyond the immediate objectives of the project.

3.4 Implications for Digital Transformation in Organizations

Together, the ERP implementation case provides substantial evidence to support the position that information systems development should be considered a planned organizational change process in the context of digital transformation. The case also illustrates that the successful implementation of system development requires alignment between technological capability, organizational structure, and leadership practices. Furthermore, the case indicates that technology-centric development strategies are insufficient for addressing the complexity and uncertainty of the digital transformation.

Managers can draw two primary conclusions from the case. First, system development initiatives should be framed as organizational transformation programs rather than as individual IT projects. Second, managers must remain involved in the system development process throughout the duration of the process in order to mitigate resistance, facilitate coordination among stakeholders, and respond to emerging challenges. Third, managers must recognize that digital transformation is an ongoing process that requires continuous alignment between systems, people, and strategy rather than a single implementation event.

By combining the insights from the literature with empirical data from the ERP case, this analysis supports the primary assertion of this article: information systems development plays a significant role in digital transformation if it is intentionally managed as a planned organizational change.

4. Conclusion and Recommendations

This study sought to understand the extent to which information systems development functions as a planned organizational change process in the context of digital transformation. A comprehensive literature review, combined with an example ERP implementation case in the banking industry, this study demonstrates that successful system development goes beyond technical design and implementation. It includes many complex organizational variables, leadership engagement, and continued change management processes that determine how digital technologies are accepted and integrated into organizations.

The literature review highlighted a growing consensus in the MIS discipline that information systems development is a key enabler of digital transformation if aligned with organizational strategy and supported by adequate leadership and culture to develop new capabilities for innovation. Conventional, linear development methods are usually inadequate in turbulent digital environments. As such, flexible development methodologies require complementary organizational conditions to be effective. These findings demonstrate the necessity of developing system development practices within a broader organizational change framework.

Additionally, the ERP implementation case reinforced these findings by demonstrating that system development initiatives operate as ongoing organizational restructuring efforts rather than individual IT projects. The case illustrated that, to manage resistance and sustain transformation over time, leadership involvement, stakeholder negotiation, and awareness of the organizational and social context are essential. Furthermore, the analysis demonstrated that digital transformation initiatives can produce wide-ranging impacts on organizational structures, job practices, and relationships with

external partners; therefore, a comprehensive approach to system development is necessary.

Based on these findings, the following three practical recommendations can be made:

a. Managers should view information systems development initiatives as organizational transformation programs and incorporate change management elements at the beginning of the initiative.
b. Sustained leadership involvement is required to align system objectives with organizational strategy and provide legitimacy for change with various stakeholder groups.
c. Users should be actively engaged in the development process to create a sense of ownership, reduce resistance, and improve system acceptance.
d. Digital transformation should be seen as an ongoing process that requires the continuous alignment of technology, people, and organizational goals as opposed to a one-time implementation.

In summary, this study makes an important contribution to our understanding of the role of information systems development in digital transformation by stressing the extent to which it operates as a planned organizational change. Although the analysis relies on secondary literature and an illustrative case, the study presents valuable insights for both researchers and practitioners. Future studies could include comparative case studies from various industries or regions to provide further insight into how the context affects system development and digital transformation outcomes.

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Conflicts of Interest

The author declares that there is no conflict of interest regarding the publication of this paper.

References

[1]. Bellantuono, N., Pontrandolfo, P., & Scozzi, B. (2021). Digital transformation models for the public sector: A systematic literature review. Public Management Review, 23(5), 1–27.

[2].Burns, T. (1993). Managing change: A strategic approach to organizational dynamics (2nd ed.). Pitman Publishing.

[3]. Day, G. S., & Smith, R. A. (1996). A contingency framework for matching strategic change and systems development processes. Journal of Management Information Systems, 13(2), 47–69.

[4]. Gillani, F., Chatha, K. A., & Butt, I. (2024). Digital transformation as a socio-technical change process: Implications for information systems development. Journal of Strategic Information Systems, 33(1), 101789.

[5]. Kaniadakis, A. (2012). ERP implementation as a broad socio-economic phenomenon: The “agora” of techno-organizational change. Information Technology & People, 25(1), 4–28.

[6]. Markus, M. L. (1983). Power, politics, and MIS implementation. Communications of the ACM, 26(6), 430–444.

[7]. Pettigrew, A. M. (1990). Longitudinal field research on change: Theory and practice. Organization Science, 1(3), 267–292.

[8]. Silva, L., & Hirschheim, R. (2007). Fighting against windmills: Strategic information systems and organizational deep structures. MIS Quarterly, 31(2), 327–354.

[9]. Sloot, R., Janssen, M., & van den Brink, M. (2024). Governing digital transformation: Organizational structures, institutional dynamics, and information systems change. Government Information Quarterly, 41(2), 101889.

[10]. Zanganeh, S., Abedini, M., & Jafari, M. (2024). Integrating change management and information systems development for digital transformation initiatives. Information Systems Management, 41(1), 45–60.

[11]. Zhang, X., Chen, H., & Li, Y. (2024). Organizational readiness and leadership support in digital transformation: Evidence from information systems development projects. Information Systems Journal, 34(1), 1–25.