



USING SOFT SYSTEM METHODOLOGY TO ALIGN DIGITALIZATION STRATEGIES WITH PROCESSES/BUSINESS STRATEGIES: TOWARDS A QUALITATIVE APPROACH

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Abstract

This qualitative study investigated the alignment between digital strategy and business and process strategies, focusing on its impact on competitive advantage and operational effectiveness. Through interviews, case studies, focus group, and document analysis, the research highlighted the significance of strategic alignment in the digital era, identifying key themes such as leadership commitment, cross-functional collaboration, innovation culture, continuous learning, and data-driven decision-making. Key Findings: - Leadership Commitment: Effective digital strategy alignment is strongly influenced by the active support and vision of senior leadership; - Cross-Functional Collaboration. This study contributes valuable insights into the practices and challenges of strategic alignment, offering guidance for organizations navigating the complexities of digital transformation.

Keywords

Alignment, Organizational Performance, Business Strategies, Digital Strategies

I. Introduction

In the digital era, the alignment of digital strategy with business and process strategies has become a cornerstone for organizations seeking to thrive in an increasingly competitive and technology-driven marketplace (Yeow and Hansen, 2018). This alignment is pivotal not only for harnessing the transformative potential of digital technologies but also for ensuring that these technologies are integrated in a manner that propels business needs and objectives and, enhances operational efficiencies (Bergeron et al. 2004; Cui et al. 2015). As organizations navigate the complexities of digital transformation, the strategic integration of digital initiatives with core business processes and strategies emerges as a critical success factor (Hammer & Stanton, 1999). This qualitative study aims to explore the nuances of digital strategy alignment, examining its implications for organizational performance, agility, and innovation (Besson and Rowe 2012; Ilmudeen et al. 2019).

The objective of this study is to delve into the mechanisms through which digital strategy alignment with business and process strategies contributes to the realization of strategic goals and operational excellence (Guha & Kettinger, 1993; Strnadl, 2006). Through a comprehensive analysis of qualitative data derived from case studies, interviews, focus group, and literature reviews, this study seeks to uncover the practices and frameworks that facilitate effective alignment. It aims to identify the challenges organizations face in aligning their digital strategies with their business and process strategies and to propose actionable insights for overcoming these challenges. By highlighting the importance of strategic alignment in the digital age, this study contributes to a deeper understanding of how organizations can leverage digital technologies to achieve competitive advantage and operational effectiveness (Laamanen & Tinnilä, 2009). The following sections cover the content of this paper. These are: 1- literature review, 2- Methodology, 3- Results, 4- Discussions, 5- Implications.

II. Literature review

In general, the alignment is examined between the three types of business strategy scenarios and the three types of digital strategy scenarios: efficiency, flexibility, and understandability. Sabherwal and Chan (2001) propose three hypotheses linked to the alignment between business strategy and Digital strategy (the fourth of which being the perception of alignment as a performance factor): - for Defenders, alignment between digital strategy (DS) and the type of Digital strategy for efficiency is perceived as business performance; - for Prospectors, the alignment of BS and the type of Digital strategy for flexibility is perceived as business performance; - finally, for the Analyzers strategy, this performance is seen through the prism of the understandability of the digital strategy as shown in Table 1.

No.	Key concepts	Profiles and attributes	Definitions
1	Business Strategies (BS)	Defender	Its objective is to control its customers by improving its business processes (Miles and Snow, 1978; Braga et al., 2023).
		Prospector	Continuously searches for new opportunities (Miles and Snow, 1978; Braga et al., 2023).
		Analyser	Performs a combination of the strengths of the previous two types and seeks to simultaneously minimize risk while maximizing opportunities for growth (Miles and Snow, 1978; Braga et al., 2023).
2	Digital strategy (DS)	Efficiency	For Defenders, the alignment between ISS and the type of Digital strategy for efficiency is perceived as business performance (Sabherwal and Chan, 2001).
		Flexibility	For Prospectors, the alignment of SSI and the type of Digital strategy for flexibility is perceived as business performance (Sabherwal and Chan, 2001)
		Comprehension	For the Analyzers' strategy, this performance is seen through the prism of the understandability of the Digital strategy (Sabherwal and Chan, 2001).
3	Organizational Performance (OP)	Differentiation	OP is seen as aiming to increase revenue, reduce costs and increase customer satisfaction (Miles and Snow, 1978; Lawrence and Lorsh, 1969; Islami et al., 2020).
		Integration	OP is seen as aiming at resource efficiency or efficiency, process enrichment and process effectiveness (Miles and Snow, 1978; Lawrence and Lorsh, 1969; Maletič et al., 2014).

Table 1: Brief definition of key concepts and sub-concepts of strategic alignment

Indeed, the alignment of digital strategy (DS) with business strategies (BS) revolves around four concepts as briefly defined in Table 2 below.

No.	Concepts	Definitions	Authors
1	Business strategies (BS)	The BS determines what type of strategy a firm must adopt to achieve its objectives. Strategy is seen as involving formulation and implementation. There are two types of strategy: product-oriented strategies and customer-oriented strategies. We approach the second type.	(Henderson & Venkatraman, 1993; Wåhlin and Karlsson (2017)
2	Digital strategy (DS)	DS determines the type of Digital strategy to adopt to achieve business needs and objectives. There are two types of Digital strategy: survival strategies which help the current profitability of the company and advancement strategies which help the future profitability of the organization. Digital business strategy is defined as the extent to which a firm engages in any category of IT activity	(Abou-Zeid, 2003; Henderson et Venkatraman, 1993); Wåhlin et Karlsson, 2017)
3	Alignment (AL)	This is the FIT between the DS and the BS.	(Henderson et Venkatraman, 1993; Venkatraman, 1989; Barki et al., 2001; Abou-Zeid, 2003)
4	Organizational Performance (OP)	This is the expected profitability and growth of the organization. DS performance is measured in relation to the degree of integration and differentiation of the organization using DS.	Lawrence et Lorsh (1969)

Table 2: Key concepts of the strategic alignment of DS and BS

Regarding organizational performance, it is important that an organization that wants to embark on a digital planning process determines what type of performance it wants to achieve. Indeed, the performance that a company can achieve with or using digital can be summarized in two factors group:

Value-bearing factors

These are factors related to: (1) the financial (income) growth of the organization; (2) reduction of production or service costs; (3) improving customer satisfaction. An organization that wishes to plan its digital in relation to its business objectives must clearly define whether it wants to achieve: (1) only a particular type of factor; (2) a few specific factors or (3) all the value-bearing factors. We can then measure the direct or indirect contribution of digital to: (1) the financial growth of the company: (a) capitalization of data, information and organizational knowledge, (b) creative information systems or technologies of value in which specific systems and technologies can constitute a tradable or reusable resource, etc. ; (2) reducing production or service costs with the establishment of digital that support innovation and facilitate the sharing of data, information and knowledge and communication between all stakeholders in the supply chain. value; (3) improving customer satisfaction with a system for capturing, storing, processing, and making available data, information and knowledge leading to the improvement of customer knowledge and services to the customer. customer with a view to their loyalty and satisfaction.

Organizational support factors

These factors are those related to: (1) resource efficiency; (2) process enrichment; (3) process efficiency. An organization that wishes to establish a system of information systems to support the organization must clearly define whether it wants to achieve: (1) only a particular type of factor; (2) a few specific factors or, (3) all the factors supporting the organization. Resource efficiency concerns the capitalization of data, information and tacit and explicit knowledge linked to any product, technology, or service with a view to improving individual or collective skills (Nonaka, 1994). Process enrichment, for its part, concerns the capitalization of data, information and knowledge on laws, industry rules, procedures or work instructions, standards, ways of doing things, etc. Finally, process efficiency is the set of new coordination and innovation capabilities that information systems can provide within an organization with the aim of supporting or facilitating: (a) the integration of business processes or entities and (b) the differentiation of organizational entities according to specific organizational factors. Indeed, research by Lawrence and Lorsh (1969) demonstrated that companies whose level of integration and differentiation was high also achieved a high level of performance.

III. Methodology/Results

Research Design

The Soft Systems Methodology (SSM) is the methodology chosen and as a qualitative approach is chosen for its strength in providing depth and detail through direct observation, in-depth interviews, and analysis of documents and materials, allowing for a comprehensive understanding of the complex phenomena of strategic alignment. It is particularly useful in organizational change processes and in understanding complex issues where there are multiple perspectives. Here after, seven steps of Soft Systems Methodology following in this study:

I. Problem Situation Unstructured: The first step involves expressing the problem situation in an unstructured form. Stakeholders (all departments and top management) were being approached via semi-structured interview and draw rich pictures to illustrate their needs, expectations, and perceptions of the customer service process, highlighting areas of conflict and misunderstanding.

Sample Selection

A purposive sampling technique was used to select organization departments and participants who provided rich, relevant, and diverse insights into the alignment of digital strategy with business and process strategies.

Semi-Structured Interviews: A series of semi-structured interviews will be conducted with senior executives, digital strategy officers, and process managers across various industries. These interviews are designed to gather insights into the strategic planning processes, the role of digital technologies in achieving business objectives, and the challenges and successes in aligning digital strategies with business and process strategies.

Case Studies: Detailed case studies of organizations recognized for their successful integration of digital strategy with business and operational processes will be developed. These case studies will provide real-world examples of alignment practices, the organizational impact of these practices, and the lessons learned through the process. The business strategy of the financial organization aims to mobilize more of the Industry Promotion Tax (Local and Import) and finance better. Data and information constitute the raw material for the success of the financial organization's business strategy that has 22 representative offices across the country.

Document Analysis: Organizational documents, including strategic plans, digital transformation reports, and internal process documentation, will be analyzed to understand the formal representation of strategy alignment and its operationalization within the organization.

Ethical Considerations

This study adheres to ethical research practices, ensuring confidentiality and anonymity for all participants. Informed consent was obtained from all interviewees, and the research was conducted in a manner that respects the privacy and sensitivity of the information provided.

II. Problem Situation Expressed: This may involve identifying key elements, relationships, and processes that contribute to the problem. The aim is to develop a clearer understanding of the situation without imposing any solutions yet. Through discussion via focus group with each department and the top management, the complex interactions between departments, communication barriers, and customer feedback loops are mapped out more formally. Thus, the following needs were identified: - Difficulties in promoting local industry with a view to achieving the autonomy of the country's production apparatus vis-à-vis the outside world while ensuring industrial balance at the national level; - lack of an effective decision-making support tool at different levels of the organizational structure; - difficulty in having real-time data from the different organizational structures on the client; - difficulties in knowing the management situation according to the planned indicators in order to act in a timely manner; - lack of management and organization tools for electronic and physical archiving of the organization's internal and external documents; - difficulties managing communication within the organization; - difficulties in managing the situation of commitments of promoters, beneficiaries of loans; - difficulties in knowing in real time the amount that a promoter must pay; - difficulty in collaborating between departments in order to have the same information across; - difficulty in having an effective tool for debt recovery; difficulty of having an integrated system to avoid data inconsistency; - difficulties in managing operational, administrative affairs and company disputes; - difficulties in ensuring regular monitoring of the organization's interventions in the form of loan financing; - difficulties in managing IT resources; - difficulties in mobilizing, recovering and controlling the Industry Promotion Tax; - difficulties in following the file online, in following the progress of payments for funded projects; - difficulties in providing information on import tax and information on payment of import tax; - difficulties in providing information on industrialization and marketing tax; - difficulties in providing information on the company's accounts within any bank.

III. Root Definitions of Relevant Systems: This step involves creating concise descriptions of systems that could potentially solve the problem. These case studies will provide real-world examples of alignment practices, the organizational impact of these practices, and the lessons learned through the process. Thus, the specific technologies for digital strategies of the cases studies to be aligned with problem situation-expressed were identified here: - A monitoring or activity tracking table; - Reporting software; - Document and archives management software; - Communication software; - Training planning software; - Periodic activity monitoring software; - Strategic analysis software; - Asset management and logistics software; - An on-board system for vehicle location; - Recovered property management software; - Fixed asset management software; - Software for managing funded and unfunded files; - An interconnection platform with partners; - Data security software; - Statistical software; - Alert software for files being processed that have exceeded the required deadline; - An IT risk management plan; - Project analysis and evaluation software; - Financial analysis software; - Software for managing approved suppliers and manufacturers; - Schedule management software; - Software for managing promoter accounts and loan recovery; - Contract management and dispute monitoring software; - Specific archiving software; - Integrated software to produce the same data (figures) for all related departments; - Document conversion software (PDF-Word-Excel); - Warranty management software; - Tax payment tracking software - Personnel management software - Video editing software; - A platform for monitoring taxes collected; - Tax payment tracking and control software; - Statistical software for macroeconomic estimates; - Software monitoring the country's industries with their capacities (capital, turnover); - Portal and content management software; - Software for managing funded projects; - Library management software; - A data warehouse to keep the history of funded projects for possible projection; - Cash management software; - A bank account management platform; - Integrated software providing reliable information in real time to all the departments concerned; - A service for automatically identifying agents - Application development software: Web, mobile, artificial intelligence; - A software platform for the call center; - Tax management software; - Data extraction software; - Control and audit software; - Patient monitoring software; - Software for granting social benefits; - Statistics software; - Communication software with hospitals; - Personnel management software; - Intern management software; - Consultant management software; - Local and Import tax management software; - Data extraction software with the possibility of producing different summary reports; - Software/module to follow the file online; - Software/module to monitor the progress of payments for funded projects.

Conceptual Models: The digital era is reshaping the competitive landscape, creating a more turbulent environment where digital technologies play a significant role in enabling innovative business models (Franco et al., 2021). Moreover, to survive in today’s “Digital Economy,” companies need to build strong Dynamic capacities to sustain (and create) competitive advantages.

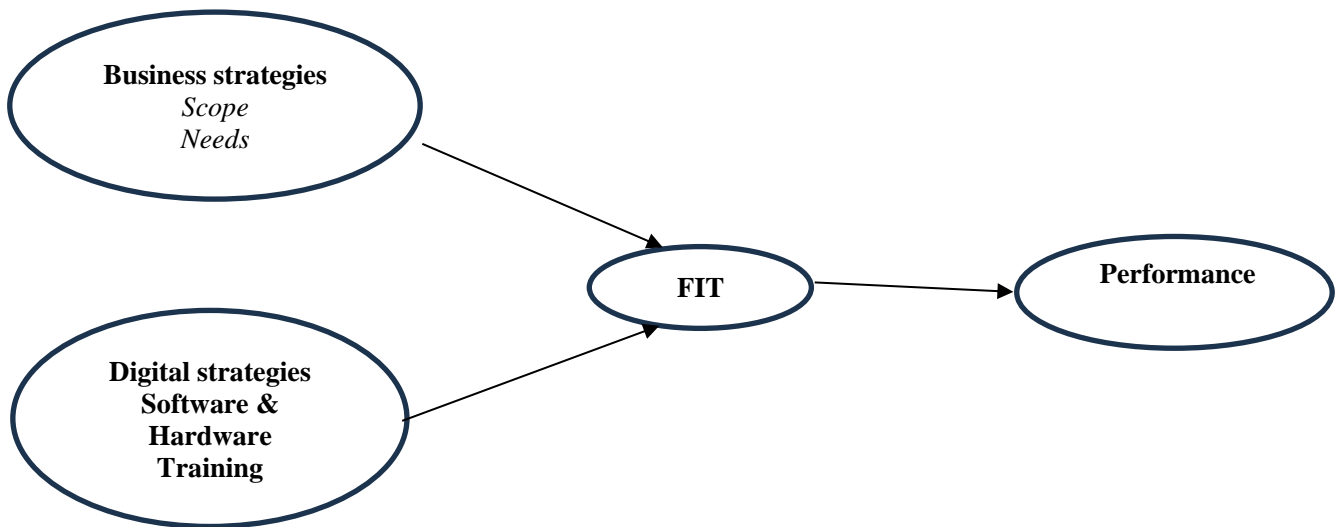


Figure 1: Alignment of digital strategies with business strategies

IV. Comparison of Models with Real World: The conceptual models are then compared with the real-world situation. This involves identifying gaps, conflicts, and opportunities for improvement by comparing the idealized models with the actual situation. To illustrate the alignment of digitalization strategies with the business strategies of the case study, Table 3 presents the common core of missions and needs common to all departments and the software, hardware and the training needed to achieve the desired performance.

Department	Mission/Needs	Software	Infrastructure	Capacity development
Common to all departments, including top management.	Know the management situation according to the planned indicators to act in a timely manner. Manage the management's internal and external documents and organize the electronic and physical archiving of the documents to be managed. Follow the life of the document: from its creation to archiving. Facilitate the organization of meetings, contacts, telephony within management as well as with other departments. Data entry; drawing of tables (simple, dynamic crosstabs), calculation of numerical data, production of statistics (graphs, etc.)	Know the management situation according to the planned indicators to act in a timely manner. Manage the management's internal and external documents and organize the electronic and physical archiving of the documents to be managed. Follow the life of the document: from its creation to archiving. Facilitate the organization of meetings, contacts, telephony within management as well as with other departments. Data entry; drawing of tables (simple, dynamic crosstabs), calculation of numerical data, production of statistics (graphs, etc.).	Surface Pro, Smartphone, and multifunction laser printer. Laptop and multifunction laser printer. Desktop computer. All Directions: Printer, standalone scanner with USB, hole punch, binding machine, digital camera. - Management Secretariat: 2 desktop computers (PC), a professional laser printer, a multifunction COLOR inkjet printer, perforator, binding machine, 3 laptop computers (laptop top), 2 digital cameras.	Depending on the infrastructure and software to be acquired as well as the digital capacity development plan.

Table 3: Sample of common core of all departments for the alignment of digitalization strategies with business strategies

V. Define Possible Changes: From the comparison, feasible and desirable changes are identified. These changes are both systemic (fitting with the conceptual model) and cultural (acceptable within the problem context's social and organizational culture). Changes could include implementing a new training program for customer service staff, introducing a more efficient issue tracking system, and establishing regular review meetings to discuss feedback trends.

Data Analysis

Data collected from interviews, case studies, focus group, and document analysis was subjected to thematic analysis to identify patterns, themes, and insights related to digital strategy alignment. This analysis involved coding the data, identifying themes, and interpreting the findings in the context of existing literature on strategic alignment, competitive advantage, and operational effectiveness.

At the top management level

Through top management, there is the Board of Directors and the General Management with its management committee. At the level of the Board of Directors, we need periodic summary information to facilitate their task of providing overall orientations and controls in the running of the organization. The Management Committee ensures its execution and monitoring daily. Both bodies, each, need information and summary data to carry out their role properly. Indeed, strategic decisions are made to improve results and achieve objectives. The strategy consists of monitoring and analyzing all the company's performance indicators.

At the partner level

The business strategy with all these partners, as part of the alignment of digital strategies, consists of signing partnerships relating to the collection of tax and the forced recovery of loans in return for remuneration on performance at a fixed rate. Information relating to import tax is monitored in real time thanks to a connection to the appropriate software which includes all information relating to imports.

At the customer level

The financing organization operates in the financing of industrial projects. Its clients, called promoters, are people working in the industry and who are eager for financial support. The technology to reach a greater number of customers and to manage those who are already loyal is the creation of an internet portal that presents all the organization's products to the public and allows direct interaction with customers who can deposit their files online and follow their progress in the circuit without traveling.

At the management level

The business strategy of each department lies in the role it plays within the company. The Studies Department, for example, carries out multidisciplinary studies and makes them available to other departments; the Human Resources Department manages staff, trains them, takes care of their benefits and treatment, as well as their career plan; the Projects Department evaluates funding request files; the Supervision Department monitors and supports the project until its completion and the extinction of the debt; the Provincial Coordination Directorate manages all the provincial entities of the organization; the Legal Department manages all the company's legal files, concerning legal disputes, the management of law firms, the development and management of contracts; the Portfolio Management Department issues and monitors the deadlines for each promoter, recovers the amount of loans granted, etc.; the Financial Department manages all aspects related to treasury, accounting and budgetary management; the Heritage and Logistics Department manages all the company's movable and immovable assets; the Tax Management Department manages all local and import taxes and the Audit Service, considered as a department in its own right, takes care of internal assessments.

VI. Action to Improve the Problem Situation: The final step involves acting based on the identified changes. This includes planning, implementing changes, and monitoring the outcomes to ensure that the problem situation improves. The organization decides to write the digital strategies plan and to pilot the new training program, invest in a new issue tracking system, and schedule monthly feedback review meetings. The impact of these changes on customer satisfaction is monitored closely. The financial organization needs to build an agile digital infrastructure. This infrastructure must respond positively to the seven characteristics of an agile infrastructure: - Accessibility: the different levels defining what a user can access, what they can modify or just consult. For example, agents of the Supervision Department will be able to have access in reading mode to the reimbursement monitoring of promoters, while agents of the Portfolio Management Department will be able to update this information; - Availability: the financial organization's information system must be available 24 hours a day, 7 days a week and 365 days a year; - Maintainability: the information system of the financial organization must be able to adapt to any type of change and quickly.

IV. Conclusion

This study contributes to the understanding of digital strategy alignment as a complex, multifaceted process that requires strategic integration, leadership commitment, cross-functional collaboration, a culture of innovation, and data-driven decision-making. By addressing the challenges and leveraging the practices identified, organizations can navigate the digital transformation journey more effectively, achieving competitive advantage and operational effectiveness in the process. The results of this qualitative study underscore the importance of aligning digital strategy with business and process strategies to achieve competitive advantage and operational effectiveness. Despite the challenges encountered, the benefits of strategic alignment are clear, offering organizations a pathway to enhanced innovation, efficiency, and market competitiveness. Also, emerging technologies in digital transformation, enables organizations to manage value by controlling all processes and data flows while creating value for participants (Gurzhii et al., 2022).

Organizations seeking to enhance their competitive advantage and operational effectiveness through digital strategy alignment should focus on fostering leadership commitment, enhancing cross-functional collaboration, cultivating a culture of innovation, investing in continuous learning, and adopting data-driven decision-making practices. Addressing the challenges of alignment requires a strategic approach to change management and a commitment to overcoming the barriers to digital transformation (Amar and Romdhane, 2019; Arundela et al., 2019).

Future research could explore quantitative approaches to measure the impact of digital strategy alignment on organizational performance metrics. Additionally, longitudinal studies could provide insights into how the alignment process evolves over time and in response to changing technological and market conditions. The qualitative nature of this study may limit the generalizability of its findings. Additionally, the rapidly evolving nature of digital technologies and market dynamics may affect the long-term applicability of the study's insights. However, the depth and richness of the qualitative data are expected to provide valuable insights into the practices and challenges of digital strategy alignment.

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