Chapter

Business and Information System Alignment Theories Built on eGovernment Service Practice: An Holistic Literature Review

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Abstract

This chapter examines previous studies of alignment between business and information systems holistically in relation to the development of working associations among professionals from information system and business backgrounds in business organization and eGovernment sectors while investigating alignment research that permits the development and growth of information system, which is appropriate, within budget and on-time development. The process of alignment plays a key role in the construction of dependent associations among individuals from two different groups, and the progress of alignment could be enhanced by emerging an information system according to the investors' prospects. The chapter presents system theory to gather and analyze the data across the designated platforms. The outcomes classify that alignment among business and information system departments remains a priority and is of worry in different ways in diverse areas, which provides prospects for the forthcoming discussion and research.

Keywords: theories, practices, goal modeling, IS alignment, working relationships, system integration

1. Introduction

The trend toward globalization of the business and eGovernment sector remains undiminished and has produced philosophical renovations, both internal and external, as mostly business firms and eGovernment sectors seek to establish strong alignment in their value chain while attempting to hearth closer relations with their customers and commercial partners. In answer to, or anticipation of variations in their atmosphere, most of organizations and eGovernment sectors are deploying information system applications for this purpose, at a rising rate [1–4]. Thus, this has elevated a key question vital to the present business and eGovernment paradigm: how can an eGovernment and business organization truly justify its investments on information system in the context of donating to business organization and eGovernment performance, be it in terms of effectiveness, augmented market share, output, or other pointers of structural usefulness?

From the early 1960s information systems have been characterized by rapid development and integration with business becoming essential components of most business organizations and industrial firms. Most business organizations in all sectors of industry, government, commerce, academia, and health in developed countries are fundamentally reliant on their information systems [5, 6]. For business organizations to stay competitive in an active business environment, they have to establish and understand how to manage their information systems systematically. A key contributor to the successful operation of a profitable business in the contemporary business environment is an effectual and efficient information system strategy supporting business strategies and processes [7].

2. Research questions and objectives

The aim of this chapter is to study the process of alignment between business and information systems holistically. This chapter covers general information on alignment in the context of eGovernment practices and summarizes previous research findings, particularly in the context of strategic, structural, social, cultural, and ulterior issues in business organizations as well as engineering requirements to achieve better information system performance. The specific research objectives are as follows:

- To identify the critical success factors of alignment with respect to eGovernment and organizational performance
- To identify the benefits of existing alignment methods and technologies
- To identify the barriers and enablers of alignment of eGovernment with organizational performance

3. Theoretical framework

Literature review indicates that the current studies on the process of alignment among information system and other agencies in eGovernment research delivers three key information system theories in relation to internal and external administrative subjects, and these include process theory, system theory, and network theories.

System theory is the interdisciplinary theory of IS in general, with the aim of determining patterns and clarifying principles that can be distinguished from, and functional too, all types of IS at all nesting levels in all fields of IS research. This theory's main focus is on internal organizational relationships. Process theory is usually used in the form of technical investigation in which events or actions are said to be the outcome of certain input situations leading to a convinced concluding state. This theory also provides a conceptual framework of knowledge creation processes which align all levels of business organization. Network theories examine the business organizational structure in relation to the organizational social aspect. These theories tend to place more emphasis on the business structures and dynamics of social relationships [8, 9].

However, due to the nature of this research, we have used system theory to underpin this study. A system theory in the context of this literature review will reflect a concern to look at possible literature as a whole (holistically). This is in contrast to the technical or engineering method, which tends to resolve problems by breaking

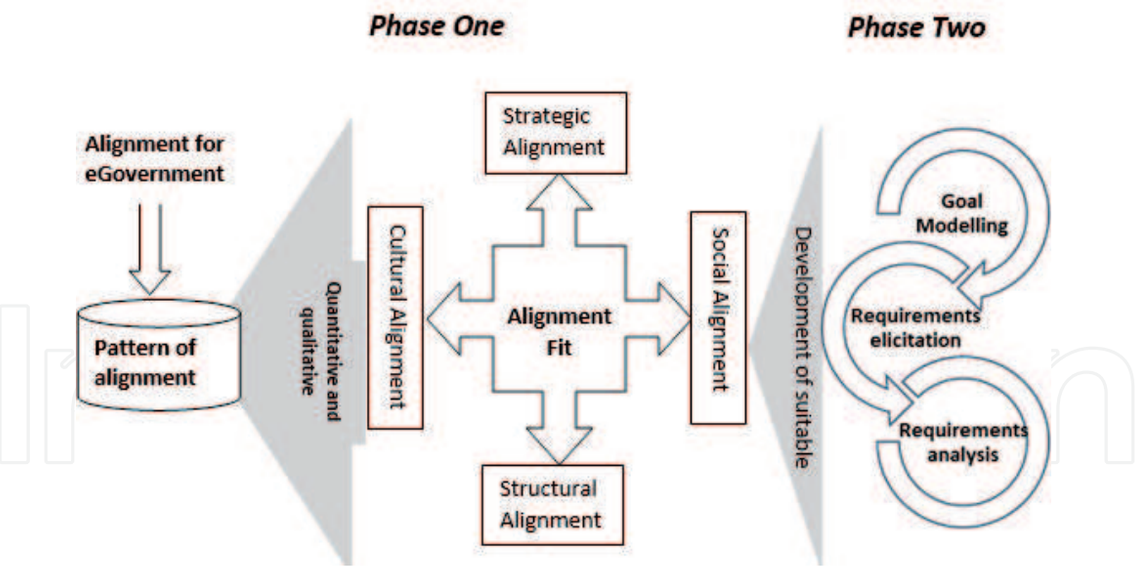


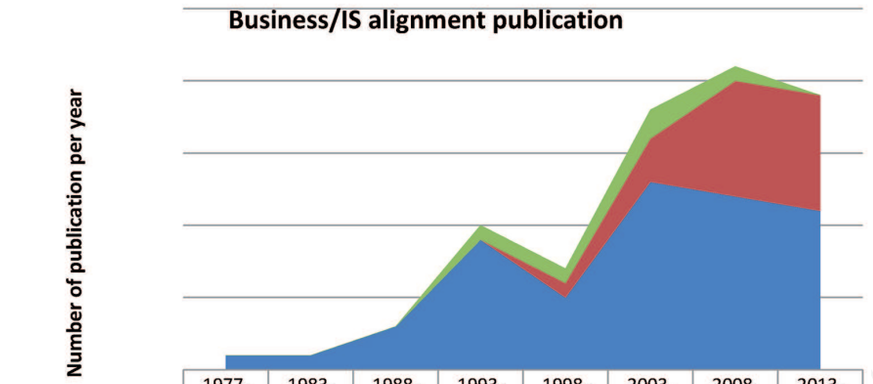
Figure 1.
Theoretical framework of alignment between eGovernment and organizational performance.

them down into smaller and more controllable fragments [10]. After this detailed review, the alignment frame for future research has been proposed as shown in **Figure 1**. Phase one of the framework presents qualitative and quantitative studies of alignment, while phase two presents goal modeling in the context of organizational requirements and the development of suitable eGovernment IS.

4. Method

In this section, a description of the holistic literature review between an organization and its information system alignment plan has been presented. To conduct this study, we followed several steps. First, we searched for manuscripts published in reputed journals and conferences during the period between January 1977 and October 2015 dealing with the government information systems (or eGovernment) or information technology. Our initial list of information systems and information technology journals included the *Academy of Management Journal* (*AMJ*), *Quarterly* (*ASQ*), *Journal of Management* (*JOM*), *MIS Quarterly*, *European Journal of Information Systems*, *Information and Management*, *Journal of Computer and Security*, *International Journal of Information Management*, *Information Technology (IT)*, and *Journal of Strategic Information Systems*. To these we also added the leading practitioner-oriented journals, namely, the *Harvard Business Review* (*HBR*), *California Management Review (CMR)*, and *MIT Sloan Management Review* (*MSMR*). Focusing on manuscripts that contain the terms "*alignment*" or "*synchronization*" in the title or keywords, our preliminary search revealed 31 manuscripts on business and information system alignment. Out of these, 26 had been published in information systems and information technology journals, while five appeared in *HBR*, *CMR*, *and MSMR*.

However, the selected set of manuscripts on alignment were relatively few which led us to extend our search to the IEEE digital library, Web of Science, and ACM digital library databases. These databases include more than 1000 information system journals, and these databases represent one of the most complete sources on information systems and information technology studies. In our case we searched these databases for academic manuscripts published from January 1977 to October 2015 containing the terms "*alignment*" or "*synchronization*" in the title, abstract,



	1977-1982	1983-1987	1988-1992	1993-1997	1998-2002	2003-2007	2008-2012	2013-2015
Book	0	0	0	1	1	2	1	0
Conference Papers	0	0	0	0	1	3	8	8
Journal Papers	1	1	3	9	5	13	12	11

Figure 2.
Selected publications.

keywords, or conclusion. As a result of this process of searching manuscripts on alignment, we obtained 101 manuscripts, which we added to our preliminary sample of 31 manuscripts. Since 15 of the newly added manuscripts were already present in the preliminary sample, our overall sample remained 117 manuscripts.

The method of inclusion and exclusion starts from a preliminary quick analysis of these manuscripts, performed by reading manuscript titles, manuscript abstracts, introductions, and conclusion which discovered that not all the manuscripts that we identified during this search would be useful for conducting this holistic review on alignment. Several of these manuscripts were summaries of manuscripts published elsewhere and studies in which the alignment between business and information system is not actually the theme of the analysis.

To classify relevant manuscripts, we adopted the following two additional criteria for our review on alignment between business and government information systems (eGovernment). Firstly, a manuscript must refer to the alignment between business and information system as a concept associated with business organizations (e.g., organizational strategy, structure, culture, etc.) to be included in this literature review. Secondly, a manuscript must deal with the alignment notion in a nontrivial and non-marginal way. As a result of this process, we eliminated 42 manuscripts that did not fulfill these criteria, which left us with a sample of 75 manuscripts.

While studying these 75 manuscripts in detail, we identified further work on alignment. For example, some books appeared relevant; however, due to access limitation, we only added books which were easily available. We also found several relevant working papers that our selected databases had failed to reveal and some of which were subsequently published. Moreover, our thorough studying of these manuscripts also allowed us to exclude papers in which the alignment was treated in a rather inconsequential way. Therefore, the final sample of select manuscripts contained 80 studies. **Figure 2** represents the selected articles from 1977 to 2015.

5. The evolution of alignment concept

This section presents an analysis and discussion on the selected articles and includes what we have learnt during the literature review of alignment between business and government information systems. Each selected article was analyzed

in the context of alignment terminologies, alignment origin and motivations, alignment definitions, alignment directions, alignment models, system modeling for alignment and eGovernment, and the future of alignment as shown in **Figure 2**.

Alignment terminologies: The issue of alignment has been studied by researchers from different business perspectives such as health, education, banking, construction, and so on. The concept of alignment was discussed with different terminologies, including alignment [11], fit, marriage, synchronization [2–4], linkage [11, 12], integration [11], harmony [11, 13], and bridge [2–4, 11, 14].

Origin of alignment: The notion of alignment originated from a body of theoretical and empirical work within business organization literature whose primary proposition is that organizational performance is the result of relationships between business and information systems. Maintaining relationships among business and information system departments, linking the communication gap, aligning structure, and improving information system trust within a business organization have become a progressively more important preference for organization CIOs and CEOs [11, 15, 16]. The process of alignment is important to business organizations for several reasons. The key advantage is to simplify the overall business organizational goals and objectives and to professionally identify the role of information systems to better support the business organization to achieve its goals and objectives. The secondary advantage is that alignment of information systems allows business organizations to not only recover their business scope but their infrastructure as well, by harmonizing their relationship with their information system [2–4].

Furthermore, managing information system processes will improve the worth and productivity of the business [2–4, 17]. This synchronization between information system and business will boost over time as information technology starts impacting every stage of the business organization such as the project stage, strategy stage, planning stage, and so on [11]. However, it has been realized that business organizations which were based on conventional business strategies failed to take full advantage of information systems [18, 19], but instead, they used information systems only at the back end or considered it as disbursement rather than as a business organization value enabler [17, 20].

The idea of alignment emerged in the early 1970s [1]. From there, alignment researchers have been under pressure to approach the problem through connecting the business arrangement with the technology arrangement. Early approaches were ad hoc, given the level of displeasure in business organizations regarding their viewpoint on information system departments. These hypotheses have prolonged over time, and nowadays, academics point out many concerns and challenges and have developed dissimilar alignment approaches, techniques, and models.

Alignment definitions: The process of alignment between businesses and information systems involves two key questions: how does the information system align with the business environment? And how does the business organizational environment align with the information system environment within the business organization? Therefore, alignment consists of two elementary concepts, namely, business planning and information system planning [11]. There are various definitions of business and information system alignment in existing literature, but the most prominent ones that have been selected for the purpose of this research are as shown in **Table 1**.

Unexpectedly, however, the alignment is often studied without a clear definition of the concept. Of the 80 alignment articles reviewed, more than one third (35%) do not define the idea of alignment at all. Less than half (43%) explicitly define or conceptualize the process of alignment. The remaining articles (22%) refer to the work of other researchers in defining the alignment concept. This lack of definitional transparency represents a possible source of uncertainty, promoting

Originating author(s), year	Definition	Comments	Other papers citing the definition
Henderson and Venkatraman [7]	Alignment is the "degree of fit and integration among business strategy, IT strategy, business infrastructure, and IT infrastructure"	This definition discusses all factors of alignment, such as strategy, structure, social, and cultural factors of the organizations and fit among those factors	[1, 21, 22]
Broadbent and Weill [23]	Alignment between business and IS is the "degree to which it is allowed, supported, and motivated by information technology strategies"	Definition addresses alignment between businesses and IS strategies	[11, 12, 24]
Smith and McKeen [25]	Strategic alignment of IS exists "when an organization's goals and activities and the information systems that support them remain in harmony"	Strategic alignment in context of IS support in order to achieve organizational goals. The idea is similar to the previous definition of alignment	[2–4, 26, 27]
Campbell [28]	Alignment is the process where "business and IT work together to reach a common business goal"	Definite recommends fit between business and IS sectors; however, organizational factors are not clear in the definition	[11, 29]
Reich and Benbasat [14]	Alignment is the "degree to which the mission, objectives, and plans contained in the business strategy are shared and supported by the IS strategy"	Strategic fit in context of IS support in order to attain organizational goals effectively	[11, 30]
Silvius [13]	Alignment is the "degree to which IS applications, IS infrastructure, business strategy, and processes are enabled and shaped"	This definition of alignment discusses the importance of IS applications in business strategy and infrastructure	[11, 31, 32]

Table 1.
Alignment definitions.

diffusion rather than convergence of viewpoints and obstructing cumulative research evolution on alignment. **Table 1** summarizes some of the most important definitions suggested for the alignment and shows which manuscripts have adopted these definitions.

5.1 Analysis of alignment in relation to its directions

Literature shows that alignment between business and information systems demonstrates that the process of alignment can be studied from multiple viewpoints, including from the organization's strategy, structure, culture, and social directions [11, 14, 23, 33, 34]. To analyze this part of the literature review, we search for articles in the context of four directions of alignment. We searched each direction after we have further divided them into four related keywords as shown in **Figures 4**–7. After studying 80 articles, we found that alignment was often studied

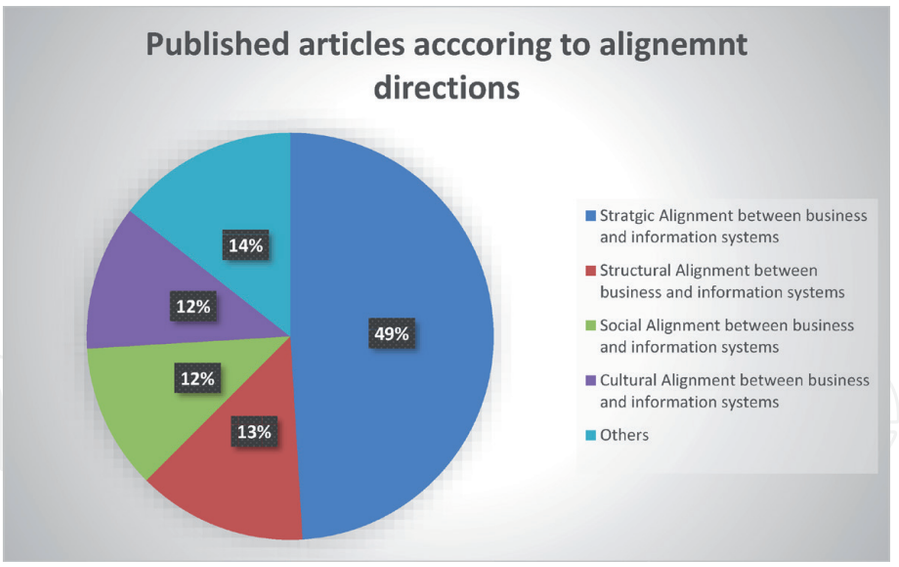


Figure 3.
Alignment directions analysis.

in the context of organizational aspects, as shown in **Figure 3**. Of the 80 articles reviewed, almost half (49%) studied the strategic alignment between business and IS. Thirteen percent of articles discussed the structural alignment between business and IS, twelve percent covered social aspects of alignment, and twelve percent of articles were published on cultural aspects of alignment with the outstanding articles (14%) referring to the work of other aspects of organizational issues such as system modeling in the context of alignment, requirement engineering and alignment, business goals and process modeling, and so on. In this section we briefly describe each of these alignment directions.

Strategic alignment: Today, business organizations are deeply reliant on information system services to increase their business efficiency in almost all areas of the business organization, and to do this, they spend a significant quantity of the company's budget on information system infrastructure. In other words, organizations frequently faced rapid changes in the business environment, mainly in relation to changes in customer services, technologies, and product life cycles. Rapid innovations and rigorous marketplace competition have forced business organizations to update their business strategies in an immediate manner [11, 33, 35] (Hsu et al. 2009).

The idea of business strategy has been extensively studied in the areas of business and information system alignment. According to Lampel et al. (2003), business strategy can be categorized into five different segments: First, a strategy is a plan that is employed to set guidelines in order to implement a proposed course of action. Second, a strategy is a plan that is employed to respond to competition from others. Third, a strategy is a plan that denotes levels of action in business organizations. Fourth, a strategy is a position mentioning to "where" and "when" and needs to be applied to business actions, which could be both internal or external actions of the business organization. Fifth, a strategy is a viewpoint that denotes the differing viewpoints of managers when implementing the business model [36]. The selected articles on strategic alignment between business and information systems were carefully studied and have been added to the reference list. Also, their percentage in the overall topic of alignment is as presented in **Figure 3**, while their presented themes are as shown in **Table 2**. Moreover, **Figure 4** presented the percentage of selected papers according to the studied keywords in this alignment direction.

Alignment direction	Commonly studied themes	References
Strategic alignment between business and information systems	Connection between business and IT plan, strategic alignment, business and IT common strategy, IT strategy, business strategy, IS investment, business performance, government strategy, IS resources, unclear strategies of business and IS, organizational rules, IS involvement in business strategy, IS leadership, suitable IS system, business and IS relationships, IS requirement engineering, IS usage	[16, 33, 35, 37–46]
Structural alignment between business and information systems	Business and IS structure, complexity of organizational structure, centralized business units, lack of IS methodologies, formal business and IS structure, structural differences between business and IS, lack of IS support, importance of IS structure, eGovernment structure	[21, 23, 47–50]
Cultural alignment between business and information systems	Strong involvement of upper level management, good managed working relationship, strong leadership, effective communication, business and IS planning at a lower level, communication gap, cultural relationship, IS in business decision-making, belief in IS, communications maturity, governance, IS maturity, government rules in cultural alignment	[34, 51, 52]
Social alignment between business and information systems	Shared domain knowledge, IS history, communication between business and IS executives, business and IS planning, maintaining IT belief in the business, long-term relationship, relationship between CEOs and CIOs	[11, 14, 53–55]

Table 2.
Studied common themes in alignment directions.

Figure 4.
Strategic alignment according to factors result.

Structural alignment: It is expensive for any business organization to have a large number of managerial personnel and administrative controls. Therefore, it is significant to eliminate pointless managerial work within an enterprise [14, 53]. A business organization structure is a method within which organizations, departments, people, and functions are linked and interrelate with each other in order to attain common business goals. In relation to business achievement, selecting the right structure of the business is significant and requires extensive preparation, because not all kinds of structures are well-matched to all businesses or people [11, 21, 23, 48].

The selected articles on structural alignment between business and information systems were studied and analyzed, and their percentage in the overall topic of alignment is as presented in **Figure 3**. Moreover, **Figure 5** presented the percentage of selected papers according to the studied keywords in this alignment direction.

Cultural alignment: The notion of business culture became prevalent in the early 1980s and was derived from the early humanist associations' view of organizations that arose in the 1940s. Three key elements, beliefs, shared values, and behavioral norms, are required in order to endure a strong organizational culture. Numerous methodologies relating to alignment from a cultural viewpoint have appeared on many previous studies. These studies have addressed the following organizational factors: strong involvement of senior management, well-managed working relationship, strong leadership, belief and effective communication between groups, connection between business and IT functions, cultural relationship at all phases of the business organization, informal business structure, and so on [34]. The selected articles on cultural alignment between business and information systems were studied and analyzed and their percentage in the overall topic of alignment is presented in **Figure 3**. Moreover, **Figure 6** presented the percentage of selected papers according to the studied keywords in this alignment direction.

Social alignment: The social dimension of alignment in the business environment contains several components such as taxes, organizational lifestyles, and the standards that describe the society in which the business organization operates. This dimension impacts the ability of the business organization to gain resources, services, and functions that improve organizational performance [11, 14, 53, 54]. However, in the context of business and information system alignment, the social direction of the organization relates to the degree to which managers understand and are committed to the business and information system mission together with organizations' objectives and plans [34, 51].

Numerous methodologies relating to alignment from a social viewpoint have appeared in many literatures, where researchers have addressed the following organizational factors: shared domain knowledge between business and IT executives, successful history of information systems, communication between business and information system executives, connection between business and information system planning, sharing knowledge between business and

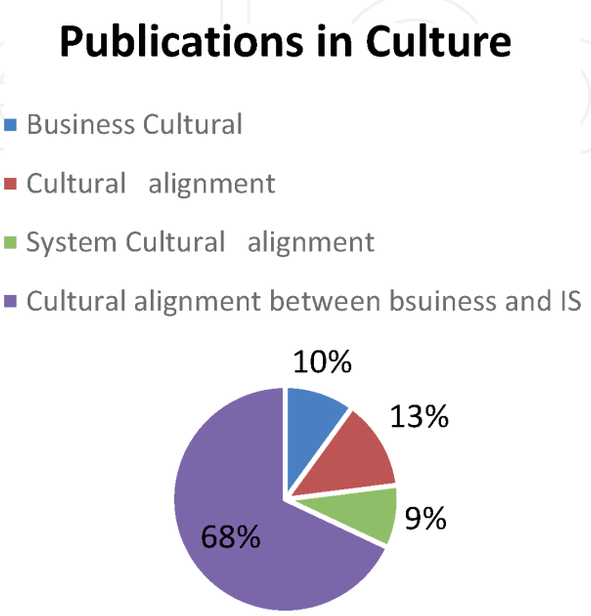


Figure 5.
Structural alignment according to factors result.

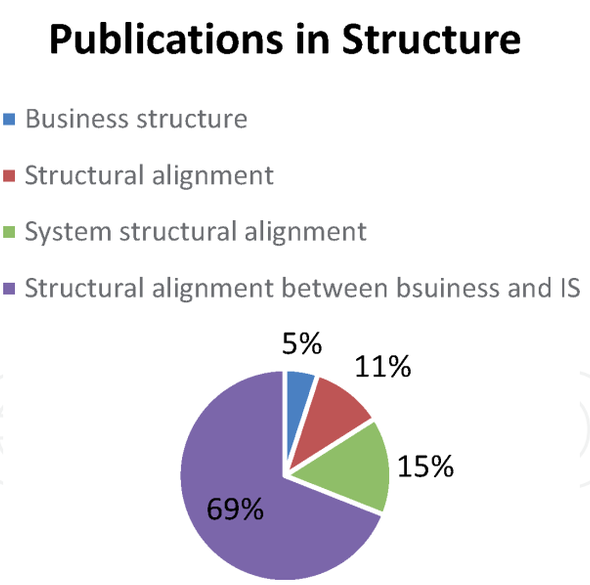


Figure 6.
Cultural alignment according to factors result.

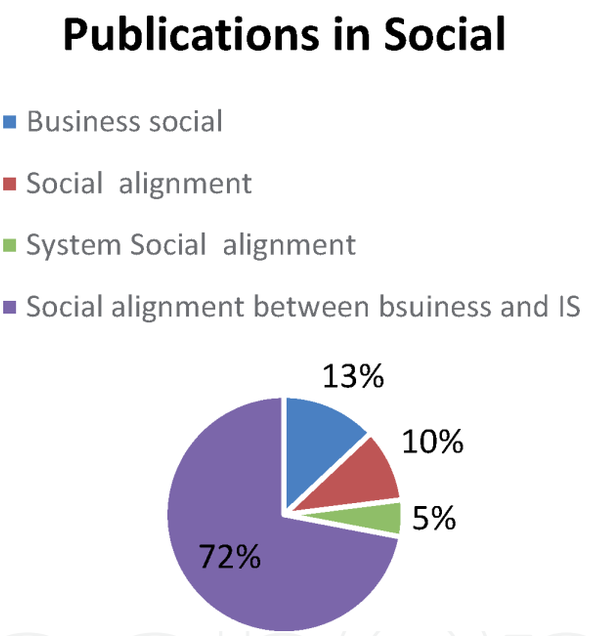


Figure 7.
Social alignment according to factors result.

information system technical people, and maintaining belief in the information system [11, 14]. The selected articles on social alignment between business and information systems were studied and analyzed, and their percentage in the overall topic of alignment is presented in **Figure 3**. Moreover, **Figure 7** presents the percentage of selected papers according to the studied keywords in this alignment direction.

5.2 Alignment models and alignment theory analysis

During this whole process, we found only two articles (2%) that presented alignment models. Henderson and Venkatraman [7] developed a model called the strategic alignment model (SAM). The model is the most widely accepted in the field of business/IS alignment. The model is based on four different strategic domains, namely, strategy, organizational infrastructure, and process, IS strategy

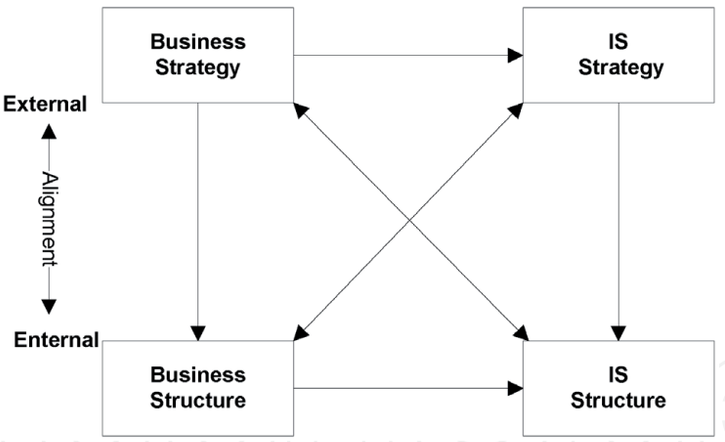


Figure 8.
SAM model of alignment [7].

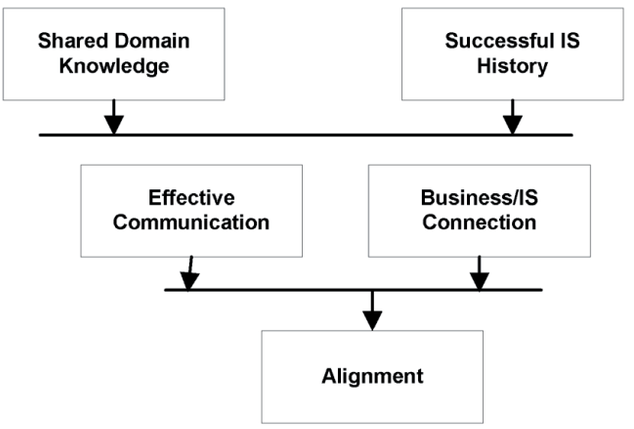


Figure 9.
Cultural alignment model [14].

and IS infrastructure and process, as shown in **Figure 8**. This model received support from the business industry and practitioners.

Reich and Benbasat [14] have conducted work on cultural and social issues of organizations, and they proposed an approach to measure the relationship between business and IS. As shown in **Figure 9**, four different factors of social dimensions were considered, and these are shared knowledge between business and technology executives, the success of technology within the business, communication, and the connection between the business and technology planning process. Moreover, the selected alignment theories and models have been analyzed in the context of their alignment measurement type and study theme, as shown in **Table 3**.

5.3 System modeling in the context of alignment and eGovernment

The term eGovernment refers to the use of information system (IS) services by government agencies that have the potential to transform relationships with industries, citizens, and other arms of the government [56]. IS technologies can serve a variety of different ends such as better government services to citizens, enhanced interactions between the government and business and industry, and management of government administration. However, the process of managing and providing IS services to any government is always a hard job, due to rapid changes in the government environment and a lack of alignment between the government administrations and IS departments [57].

Theory/model	Alignment measurement type	Theme	References
Understanding the impact of business cases on IT investment decisions	Theoretical model	eGovernment	[58]
Alignment model using resource-based view method and COBIT	Case study approach	Business organization	[59]
IT investment management framework of government institution	Empirically proved	eGovernment	[56]
Model of strategic alignment between business and IS	Empirically proved	Business organization	[60]
Links IS plans and business plans and business plans with information system plans	Questionnaire approach	Business organization	[15]
Business goal study in the context of system requirements engineering	Empirically proved	eGovernment	[17]
Strategic use of new Internet technologies in government	Configuration approach	eGovernment	[57]
Connection between business strategy, business structure, and IT strategy structure	Questionnaire approach	Business organization	[23]
Outcomes of strategic IS alignment	Empirically proved	Business organization	[24]
IT governance to fit your context	Case study	eGovernment	[61]

Table 3.
Alignment theories and models analysis.

Study themes	References
Goal modeling and IS requirements	[2–4, 17, 62–64, 70]
Linking business and IS strategies	[2–4, 12, 17, 62–66] De la Vara González and Díaz 2009; De la Vara González and Díaz 2008
Business process management	[64, 65, 67, 68]
Lack of system support	[2–4, 17, 65–66, 69]
Business/IS long-term focus	[2–4, 12, 66]

Table 4.
Previous study approaches in the context of IS requirements and alignment.

One way of developing suitable systems and system processes according to government expectations is the derivation of IS requirements from the government goals and objectives [2–4]. In this study, we analyzed and categorized the previous studies into the following emerging main themes: goal modeling and IS requirements, linking business and IS strategies, business process management, and lack of system support and business/IS long-term focus. **Table 4** summarized the selected methodologies within their main context.

In the context of "goal modeling and IS requirements," Gartlan and Shanks [12] present an alignment framework which is based on the idea of business goal modeling and IS requirements, and its outcome allows IS analysts to monitor

the requirements at an early stage of IS development. Card et al. [70] present their goal-based workflow and GOMS approaches and suggest a business goal and business process-based infrastructure for system requirement elicitations in regard to clarifying the IS and to understanding the current organizational circumstances. More recently, Ullah and Lai [2–4] presented a business goal modeling using an IS requirement engineering approach. The aim of the approach is to help IS developers better understand organizational goals and their expectations of the required IS.

In relation to the "linking business and IS strategies," Bleistein et al. [26], Bleistein et al. [17] and Veres et al. [68] presented an IS requirement-based model called B-SCP that enables the verification and validation of system requirements in terms of alignment and support for organizational strategy. Veres et al. [68] identify that one problem with the B-SCP model is that it is very complex to trace the dependency among IS requirements from the perspective of complex organizational projects. They extend the B-SCP model by describing an ontology data structure in order to represent the IS requirements and to establish the relationship between business and IS strategies. Zowghi and Jin [71] developed a framework for identifying IS requirements, where the framework supports the systematic identification of IS requirements which include the requirements elicitation and analysis [17, 26, 68, 71].

In the context of "business process management," Goto et al. (2005) present a business process-oriented requirement engineering model to understand the association between organizational processes and IS. The model defines three phases of requirements engineering, elicitation and business process verification, where they define the purpose of the organizational process; IS requirements elicitation and verification of detailed organizational processes, where they manage the process-driven IS requirements using a scenario-based approach; and IS elicitation and system specification, where they identify the IS requirements with the customer. Cardoso et al. [72] proposed an organizational process-based model for system requirements and found that modeling organizational processes is a conventional practice in the system requirement field which facilitates problem comprehension (Goto et al. 2005) [72].

Finally, in the context of "lack of system support and business/IS long-term focus," De la Vara Gonzalez and Diaz [65] proposed an IS requirement elicitation approach to improve business/IS alignment and believed that system requirements is the bridge between enterprise and system domains. Weiss et al. (2008) presents an approach known as SIKOSA, where they define a method of system requirements derived from the business environment. Broadbent and Weill [23] and Kaplan and Norton [73] indicate in their methodologies that organizations today are moving quickly toward IS-oriented solutions within their businesses, especially the use of IS in business decision-making [65, 67]. Kappel [66] and Lehtola et al. [69] suggested in their methodologies that the best way of achieving long-term IS planning and alignment is to map system requirements with business planning [66, 69, 74].

6. Discussion and implications

After this detailed literature review of business and information system alignment in the context of eGovernment, we have found that studying complete alignment patterns as shown in our theoretical model in **Figure 1** (i.e., strategic alignment, structural alignment, cultural alignment, and social

alignment) in the eGovernment sector is important as the eGovernment sector of any country would have several pillars with each pillar being interlinked with each other. Evidence from the literature shows that even though there are a relatively large number of alignment methodologies which have been developed in the previous studies, most of these studies merely focused on general IS alignment and businesses, while very few have focused on government information systems (i.e., government) alignment with respect to government organizations and administrations. Therefore, the framework for measuring and attaining alignment remains a serious issue among government organizations and, most especially, in the developing economies as shown in **Figure 3** and **Figures 4**–7.

As a result of this problem, most eGovernment information systems have failed to yield appreciable and expected return on investment (ROI) due to the problems of lack of alignment or effective synchronization between the government departments and the information system departments. Consequently, this raises many questions such as how can government organizations better utilize their IS investments so that they are able to achieve high business or organizational performance and grow productivity, raise annual revenue, and improve viability. Given the multifaceted nature of this question, previous investigators have failed to answer most of these questions with respect to government organizations but rather suggested different alignment methodologies in the private sectors. They have argued that IS alignment has an optimistic influence on business organization performance, if it is correctly matched with or fitted to their managerial, structural, social, and cultural strategies [75]. Numerous existing alignment methodologies present distinct patterns for strategic, structural, and cultural alignment, that is, a pattern for strategic alignment among business and IS, a pattern for cultural alignment among business and IS, and a pattern for structural alignment among business and IT [23, 26, 75].

Only a small number of existing alignment methodologies present patterns for alignment of two of these areas, for instance, structural alignment between business and IS together with strategic alignment among business and IS [17, 26]. However, the patterns for aligning one aspect of organization or two are not sufficient for the complete measurement of alignment between business and information systems in the context of eGovernment and to recognize the impact of alignment on Government performance. Therefore, a pattern for the alignment of business and IS in all four areas, strategic, structural, social, and cultural, is of vital importance for any eGovernment sector [34].

IS technologies can serve a variety of different ends such as better government services to citizens, enhanced interactions between the government and business and industry, and management of government administration. However, the process of managing and providing IS services to any Government is always a hard job, due to rapid changes in the government environment and a lack of alignment between the government and IS departments. Strong alignment between IS and other departments of the government can achieve better administration and organizational performance in many ways such as strategic, social, cultural, and structural performance [2–4]. One way of developing a successful IS system is to model the government goal first, as one goal may have several subgoals as shown in **Figure 1** and then derive the system requirements from those goals [2–4, 17, 76].

Literature shows that business organizations can only perform better if they aligned with their information system departments. This chapter presents a literature review of alignment methodologies in the context of business performance and eGovernment. The chapter is anticipated to be suitable for researchers considering conducting research in this area and business executives seeking to assess the detail literature review on alignment.

7. Future research directions

Analysis of previous studies of alignment between business and IS clearly showed that the problems of alignment with respect to eGovernment certainly exist. Furthermore, several previous authors agreed that the successful alignment process promises many benefits to any organization among which are better business performance for the organization, effective strategic planning toward better IS support to the business, a stronger relationship between business and IS, and bridging the communication gap at all levels of the business organization. However, alignment is not a single key to press the button and fix the issue as it is a continuous process. Therefore, details of future research directions are as follows:

1. Researchers in business/government IS alignment have increasingly come to view as resulting from the alternatives that individuals make within an ever rapidly changing business environment. If these alternatives or business choices can be identified, a practical next step in the field of business/eGovernment alignment is to discover the behaviors that herald them. This line of consideration is in agreement with the micro-foundations theory of management and information system where analysis is performed at the behavioral strategy level to incorporate the actions of goal-seeking economic agents. The micro-foundation has been discussed previously; however, the concept remains controversial and subject to considerable academic debate. For example, to advance the micro-foundations concept, alignment researchers would need to tackle the way that strategic alternatives/choices can be aggregated across actors and time to predict business performance.

2. Alignment is the degree to which the IS objectives, mission statement, and plan support are supported by the business organizational objectives, mission statement, and plans. Evidence from the literature shows that the concept of alignment has been studied from various points of view in the context of alignment between business and IS. However, most researchers believe that business/IS alignment research has demonstrated that the issue of strategic differences between business and IS can be resolved using IS requirements techniques. Moreover, many researchers believe that further research is warranted to enhance our understanding of the multidimensional nature of strategic alignment in contemporary organizations with more complex structural forms [2–4].

3. Literature shows that researchers have studied alignment in different contexts, for example, the strategic difference between business and information system, the structural difference among business and information system, and the cultural difference among business and information system. Future research is possible on identifying the complete pattern of alignment which includes alignment between government strategy and IS strategy, alignment between government structure and IS structure, cultural alignment between government organization and IS, and social alignment between government organization and IS.

4. Government organizations constantly faced rapid changes in the business market, particularly in relation to changes in consumer services, technologies, and product life cycles. In this context of rapid modernization and strong market competition, organizations need to change their business strategies and processes which are frequently improved and evaluated. However, this

rapid change affects alignment processes badly due to the IS series which are not on time [2–4, 69].

5. Most of the exiting alignment methodologies are business driven rather than IS driven. Therefore, technology staff often has difficulty in identifying business goals and objectives. Further research is possible on proposing an alignment solution from the IS side [11].

6. The development of a successful IS in the context of alignment is not only necessary for the identification of IS requirements; the organization activities must also be taken into consideration before commencing the development phase of the system; therefore, the organizational goal and process modeling are required. Therefore, further research is possible with the business goal modeling in the context of alignment and better government performance.

8. Conclusion

In this chapter, we have analyzed, categorized, and discussed previous literature on alignment between businesses and information system research by exploring articles from relevant databases. Two main implications can be derived from this review. Firstly, for researchers who are interested in conducting research in the areas of government information system (i.e., eGovernment or public sectors information system) alignment, this article presents directions and a detailed survey from alignment between business (i.e., private sectors) and information system. Therefore, the knowledge derived from the business (private sectors) and information system could serve as a foundational knowledge in the development of workable alignment models for the eGovernment (public sector) platforms. Secondly, for any organizations (private or public), this article describes the significance of alignment for the business organization's success, and also it describes how CEOs and CIOs could measure and maintain the alignment within their organizations.

In conclusion, after this detailed review, we found that the alignment research community has made significant development along many fronts, at the same time, the rapid change from the organization's side, particularly change in product life cycle and consumer services. This increasingly demands raised many new serious alignment research questions. For these reasons, it is a thrilling time to be involved in the field of alignment research.

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