Study of tactical alignment of business and IT in education systems

Prajwalita A. Veronica Masih	*Dipak Misra*	*Sanjay Mohapatra*
prajwalitamasih@gmail.com	*ver0.nica@outlook.com*	*prajwalita.masih@cutm.ac.in*
Xavier University Bhubaneswar, Kakudia, Odisha	*Xavier University Bhubaneswar, Kakudia, Odisha*	*Xavier University Bhubaneswar, Kakudia, Odisha*

ABSTRACT

Business - IT alignment (BITA) is one of the most widely discussed topics for the last decade in the area of Information Systems Planning and Management as it stresses the importance of the technology, business management, and an amalgamation of the two that holds the promise for obtaining the sustainable advantage of business organizations in the long run. Business Information Technology Alignment (BITA) has been found to improve firm performance. Yet little is known about the process through which universities/colleges achieve BITA. It the fastest-growing economy in the world.

Keywords— *Tactical alignment, Strategic alignment, Aspects, Barriers, Assisted qualitative data analysis, Business-Information Technology Alignment, Strategic alignment maturity*

1. INTRODUCTION

Business - IT alignment is one of the most widely discussed topics for the last decade in the area of Information Systems Planning and Management as it stresses the importance of the technology, business management, and an amalgamation of the two that holds the promise for obtaining the sustainable advantage of business organizations in the long run.

It is not strange for business and IT specialists in an organization to encounter disputes and squabbling as unavailability of correlative understanding and the failure to yield desired results lead to mistrust and blaming among themselves (Henderson, J.C., and Venkatraman, N, 1993). Efforts to initiate trust between these two groups and a mechanism for unanimity in decision-making are often included in the search for Business–IT alignment.

Frequently using immediate alignment actions, in this case, one could produce false and ambiguous outcomes at any point of analysis, but the level of distortion could be most severe when assessing alignment in individual methods or through a file of processes that, in its whole, covers the value chain. Indistinct alignment actions could also damage important IT decision making by preserving a fabricated misalignment amongst CIOs when in fact the contrary holds true.

Firms may pursue to concentrate IT resources on procedures that are vital to the accomplishment of their business strategy, to allow greater responsiveness to market change. Doing so with less analytical measures may be reflected inefficient. Likewise, a lack of IT resources may be a cause of frustration for end users in techniques that are minor to the business strategy – in human resources, for example, but the organization will survive. The similar lack of IT resources in an organization's mission - essential processes could damage it. Assessing alignment at the organization level ignores what happens in each and every procedure, and it does not involuntarily disclose whether individual methods are aligned. One can accomplish this fact only via abstracting and evaluating alignment at the process stage.

Hence, as a result, in this study, we propose a fresh and different conceptualization of alignment at the process level. We develop the work that has been done at the corporate level over a 20-year interval by emphasizing the advantages of presenting a more granular opinion of alignment across various business methods. We adapt measures derived from strategic fit research, individually, profile deviation measures (Venkatraman, 1989), to differentiate between situations where process-level misalignment is related to a lack of IT support for essential activities in a specific process (termed as IT shortfall) & other instances in which, even though IT fully supports vital operations, excess or slack IT supplies (stated as IT slack) that might aid modifications to business strategy at a later date however exist. We exhibit the qualities of this conceptualization and measurement approach using perceptual data from a   survey of IT & business administrators. It approves the necessity to update

our alignment measures to allow for circumstances when IT can and is assumed to endorse and enable variations and transformations in strategic business direction, to improve individual procedures or help implement the whole business strategy.

Business/IT alignment has been approached in the article in many ways. Henderson and Venkantraman (1993) described alignment as the level of fit and integration midst business & IT strategy, business & IT infrastructure. Reich & Benbasat (1996) argued that alignment is the level to which the goals, mission, & strategy confined in the business strategy are distributed & supported by the IT strategy. Sauer & Yetton (1997) indicate that IT must be handled in a way that imitates the management. McKeen & Smith (2003) reasoned that the strategic alignment of IT occurs when a company's objectives & actions and the IS which keep them stay in harmony. Proper alignment signifies that the group is using suitable IT in specified circumstances in an appropriate approach and that these deeds remain consistent with the business strategy, objectives and wants (Luftman & Brier, 1999).

2. LITERATURE REVIEW

Back in the 1960s, IT has been considered with swift growth, and developed business and turned into an essential part of most business and industrial firms. Many firms in every area such as business and commerce, industry, healthcare, and government and academia are fundamentally reliant on their IT (Earl, 1992; Ward & Peppard, 2002; Ward & Peppard, 2004). The firms have to verify and comprehend how to operate IS/IT usefully, to remain cutthroat in a vibrant business atmosphere. A critical achievement feature for an active business in a lively business atmosphere is a useful &competent IT strategy auxiliary associating business strategies and procedures (Henderson & Venkatraman, 1993). The significance of the necessary use of technology-based IT for successful administrative accomplishment which constructs an impact to the formation of business value is referred & is better . known (Henderson & Venkatraman, 1993; Luftman et al., 1993).

In the literature, alignment is subjected to various interpretations in both theoretic & practical reports. Alignment has been called integration (Weill & Broatbend, 1988); fit (Chan, 1992); harmony (Luftman, 1996); strategic alignment (Henderson and Venkatraman, 1993); bridge (Ciborra, 1997); business-IT alignment (Luftman, 2007); IS alignment (Chan et al., 2006; Benbya and McKelvey, 2006); IT alignment (Chan, 2007) and fusion (Smaczny, 2001);. Silvius (2009) concluded that one of the reasons for this unclearness is that the theory of alignment is still young.

Furthermore, many analyses of alignment have highlighted that alignment is a procedure instead of an end state (Parkert et al., 1988; Niederman et al., 1991; Henderson and Venkatraman, 1993; Baets, 1992; MacDonald, 1991). Galliers (2004) highlighted the issue of aligning ICT in a relatively fixed state after implementation in a firm, with a business strategy & related material requirement which are always in the necessity of adjustment. Hence, in this context with regards to the 'end state' alignment approach, a more holistic definition of alignment is illustrated by Silvius (2007); 'the degree to which IT applications, infrastructure, & organization allow and support the business strategy & procedures, as well as the method to realize this.'

Luftman (2000) defined business alignment & information technology (IT) as a harmonious relationship. Chen (2010) has also stated that business & IT should be in harmony for them to align correctly. The overall perception of business & IT can be accomplished by understanding business strategy & information technology governance (ITG). De Haes & Van Grembergen (2009) was discovered that there is a specific relationship amid business/IT alignment and the use of ITG. Business strategy is evaluated by how good a company executes as it associates to processes, structure, and its environment (Croteau & Bergeron, 2001).

The idea of fit is the principal subjected in the area of strategic management (Venkatraman and Camillus, 1984; Venkatraman, 1989; Tan and Tan, 2005). As, Porter (1996, p. 73) states: Strategic fit amongst various activities is essential not only to cutthroat and modest benefit but also to the sustainability of that advantage. It is difficult for a competitor to coordinate a collection of interlinked actions than to just copy a specific replicate a set of product attributes, coordinate a process technology or sales-force approach.

The aim of the "business and IT alignment" is attained by no businesses. It is a worthy yet critical goal to follow and pursue. One can either by taking steps to get closer or by one might never reach the alignment for which it requires a process. Most of the time everyone ignores that it is a process. These processes neither have a base point nor have an endpoint, which incrementally gets towards alignment is a series of "learn and do" cycles (Coleman&Raymond, 2006).

Information Technology (IT) can influence all the facets of educational and business wants in higher education institutions (R. Yanosky and J. McCredie., 2008). It is clear in current times that dependence on IT in the education region has augmented (F. Newman and J. E. Scurry, 2015), (L. Price, J. T. Richardson, and A. Jelfs, 2007), (J. T. Richardson, 2005), with more growth of the IT role in coaching and studying activities all through the previous two eras (M. Deniz, 2014). Earlier, IS in the higher education area were mostly used for communication & administration activities (R. B. Kvavik., 2005). The swift technological improvements related to the Internet, mobile computing and social networks have developed into vital to enhance & endorse learning (A. Lazinica and C. Calafate, 2009).

This improvement of IT and its implementation in higher education carry on growing (A. Eriksmo and J. Sundberg, 2016). Rendering to a current review led by J. Herron, 2016, increased reality technology has demonstrated its importance in aiding medical preparation and has already assisted in authentic curative measures. Further chances & potentials for accepting these tools and technology & other lately established technologies in education are frequently found.

This result in the requirement for universities to spend profoundly on new improved and enhanced technologies to improve higher education coaching & learning methods (F. David and R. Abreu, 2016). The study demonstrates where nearly 75% of faculties

think these Learning Management System (LMS) as an extremely beneficial and helpful tool to improve teaching. Students also illustrate great stages of contentment in the direction of the improvement of their learning event via the usage of these systems. Such insights of learners, staff, and faculties can be taken into consideration as an essential and vital common issue, which must be considered to evaluate the worth of the alignment amid business procedures & IT systems in higher education institutions.

Nowadays, the catastrophe in such systems in higher education institutions may have substantial bad influences on student's fulfilment, institution's status & future incomes (S. Tareen, 2014). Thus, if these tools are to include importance to learning activities, they have to continually assess & align with the requirements of students and academic employees. Similarly, technologies operated by staffs in various sectors and schools at higher education institutions have to be associated with the institutional intentions to include business value.

The eccentric character of higher education, embodied in collective management, distinct organizational culture between colleges & universities and the liberation of academic programmes and research accomplishments, gives exhibits an exceptional IT alignment challenge with institutional purposes & significances (J. A. Pirani and G. Salaway, 2004) (J. Luftman and R. Kempaiah, 2007), through the implementation of the Strategic Alignment Maturity Model which was established by (J. Luftman, 2003), find the education area to be the minimum matured part in terms of strategic business & IT alignment contrasted with several other business and manufacturing areas for instance conveyance, insurance protection, and well-being. Thus, the emphasis has to be specified to the higher education area to search the trials and barriers which avoid more top education institutions from succeeding a more advanced level of alignment among business and IT.

One also wants to identify that not all alignment analysis hires a processed or analyzed the degree of alignment. Out of 170 articles and theses that Gerow et al. (2014) recognized as including the essential of the alignment literature, only 71 (41%) comprise a tangible measure of alignment as evidenced by correlational or other pragmatic analysis. Out of this, 49 (69%) papers use single means based on, for, e.g., Likert scales. As such, only 22 (31%) papers have processed an alignment measure using the information on IT & business strategy. While Gerow et al. (2014) argued that particular actions may generate inflated Alignment measures, it is equally likely that only rules are only meant to find IT deficit. Such scales are unlikely to reveal organizations with IT slack or to unveil the level of IT slack if it exists.

Adding to the vicissitudes in a firm's internal atmosphere core competency, skills, finances, structure, knowledge, personnel, etc., and no one has a dynamic combination of forces which claim a change in response (Luftman et al. 1993; Henderson & Venkatraman, 1993).

2.1 Strategic Alignment
Strategic IT/business alignment has sustained to garner attention, despite decades of research. This has been attributed to, among other things, the many practical challenges it presents (D'Souza and Mukherjee 2004). Reich & Benbasat (1996) also stated that in lots of the study on strategic alignment, no distinction is made between factors influencing alignment, and alignment itself. They, therefore, make the difference between causal elements, for instance, the IS planning process, & alignment. They further define the alignment result along two dimensions, i.e., the intellectual side, and the standard format. The rational aspect denotes to the alignment of IS plans (or strategies) with business plans (or procedure) & is termed as the situation in which a set of best-correlated business plans & IS plans exist (Reich & Benbasat 1996). On the other hand, the social dimension of alignment is referred to the situation in which the business & IS administrators comprehend & are dedicated to the IS & business objectives, mission, and plans (Reich & Benbasat, 2000). Luftman (2000), in a separate line of research, define business-IT alignment as operating IT suitably and adequately to harmonize with business strategies, goals and needs.

It contrasts with the definitions provided by Reich and Benbasat (2000), in that the focus is on applying IT, instead of on social aspects or IT plans. It is thus similar to what Chan et al. (1998) define as apprehended strategic alignment, as opposed to the scheduled strategic alignment, usually showed in strategies and plans. These three views of alignment are not entirely separate, but interconnected. The social dimension will have an optimistic effect on the intellectual, both of them in turn influencing realized strategic alignment. The dynamic & turbulent business and IT environment affect too, however, making alignment a moving target, with the company and IS strategies continually changing, and the subsequent need for one or the other to be adjusted.

Managerial interest for the value of IT investment has retained the limelight on alignment, as it is thought to be that by aligning IT with business plans and goals, administrative advantages will accumulate (Henderson & Venkatraman 1993). Chan et al. (1997) provide evidence for the assertion above by demonstrating that strategic alignment is the primary impact on organization act, instead of either IS strategic orientation or strategic business orientation alone. Tallon & Kraemer (2003) confirm that the relationship mentioned above is valid up to a specific point, but note that outside this threshold further increases in alignment might yield lower IT payoffs. This outcome highlights the necessity to become an improved insight into the dynamics of alignment.

2.2 Aspects of Strategic Alignment
The strategic use of Information Technology (IT), better known as strategic alignment, has increased its significance as a result of the strong dependence of organizational activity on information systems and their related technologies. Consequently, organizations want to ensure that IT investments are made on those projects that improve business performance and competitiveness (Tallon, Kraemer and Gurbaxani, 2000). Furthermore, IT executives consider strategic alignment as one of the main challenges that the organization has to face (Ives and Mandviwalla, December 2004; Luftman, 2000; Tallon and Kraemer, 2003).

Strategic alignment, however, has been subjected to different interpretations in theoretical and practical studies and it is difficult to find a common agreement, which can see reflected on the variety of definitions found in the literature. For example, strategic alignment has adopted different pseudonyms like integration (Weill and Broadbend, 1988), fit (Porter, 1996), linkage (Henderson and Venkatraman, 1993), harmony (Luftman, 1996), bridge (Ciborra, 1997) and fusion (Smaczny, 2001). All these definitions, though, focus on how to improve organizational capabilities through technology. In the early works, researchers focused on developing a strategic plan that integrates business and IT visions. Frameworks were also used by organizations to improve the information system strategic planning process. Examples of these are Critical Success Factors, the value chain, the Strategic Option Generator and methodologies such as Business System Planning and Strategic System Planning (Robson, 1997). More recent research in this area defines alignment as all the activities that management performs to achieve business goals supported by IT across the organization (Luftman, 2000). Several approaches have been used to integrate the business strategy and information technology (IT) strategy. Most of these approaches are planning oriented (Smaczny, 2001) and assume structured environments under full control (Ciborra, 1997; Maes, 1999) in contrast with the real environment organizations face where uncertainty, flexibility, and changeability prevail (Peppard and Ward, 2004). Even if some organizations do not have a formal planning process, they still need to be able to develop their business direction (Reich and Benbasat, 2000)). This direction should be clear enough to allow organizations to focus on those IT projects that add business value. Despite the wide acceptance of strategic alignment, there is no consensus on how to achieve alignment, and a few references detail the process. Henderson and Venkatraman (1993) suggested that alignment could be achieved through the selection of appropriate alignment perspective included in their strategic alignment model (SAM). These perspectives were: strategy execution, technology transformation, competitive potential, and service level. Each of these defines the driver of the perspective and the roles of business and IT managers including the criteria performance measure. Luftman (1996), who redefined the SAM model providing eight perspectives instead of four, followed this approach.

The general process of achieving alignment (Luftman and Brier, 1999) consists of the following steps:
- Set the goals and establish a team
- Understand the business linkage between IT and the business
- Analyze and prioritize gaps
- Specify the actions (project management)
- Choose and evaluate success criteria

Sustain alignment Existing literature; however, does not provide further details for all the steps involved.

2.3 Strategic Alignment Barriers
At a strategic level, senior executive support for IT has been identified as an important factor of alignment. It is considered to be number one enabler as well as the fifth inhibitor to alignment, as found by Luftman et al. (1999) and Karahanna & Preston (2013). General business awareness and support of technology innovations are of foremost importance. In assisting this, business executives should take into consideration the value of IT as well as defining visions and strategies that include the role of IT. Another important factor in the business support of IT is seeing the value in funding and sponsoring IT-projects (Chen et al., 2010). Hence, the lack of senior executive support creates an alignment barrier. Stoel & Muhanna (2012) further highlight it stressing the importance of line executive commitment to IS issues and initiatives, e.g., by IS projects having a business sponsor. The second most important enabler found by Luftman et al. (1999) was the notion of IT participating in creating business strategies. Mutual co-operation between representatives from IT and the business is needed in forming business and IT strategies in order to take advantage of IT as an enabler to reach competitive advantage. Such cooperation is easier with cross-functional teams, with representatives from both the business and IT (Antikainen & Pekkola, 2009). Cross-functional teams provide advantages such as considering opportunities when forming business strategies. Important aspects such as trust and forming partnership are made possible through cross-functional teams (Rao & Ramachandran, 2011). Ajjan (2009) adds to this by proposing that the connection between business and IT planning process impacts alignment. IT managers who participate in business planning have a better-perceived understanding of business objectives and vice versa. Luftman et al. (2010) highlight the importance of link Business and IT Missions, Priorities, Strategies, Planning Processes, and Plans. The authors proposed that business and IT plans should be linked and well documented and for IT personnel to participate in business planning and in new product development. Moreover, Rosenkranz et al. (2010) underline that good communication leads to information sharing between business and IT, which support mutual understanding. Furthermore, Vermerris et al. (2014) highlight communication and understanding between business lines and IS executives as another important precondition to alignment. This is more often the case when the CIO has been with the firm for many years and has a strong working relationship with the CEO. Preston & Karahanna 2009) argue that good communication is an important ingredient in shaping true partnerships based on mutual trust, as well as risk and reward sharing between business and IT.

2.4 Tactical Alignment
While business-IT alignment at the strategic level is broadly studied (Chan and Reich 2007), there has been a minor study of how IT and business can align at the tactical level.

Tactical business-IT alignment is essential for making sure that IT projects are implemented on time, and the implemented applications deliver the planned and desired business benefits. Alignment at the operational or tactical level is required for ensuring that planned applications are successfully implemented, maintained and used, that applications and systems irrelevant to the business plan are not implemented, and that implemented IT delivers envisaged business benefits (Tarafdar and Qrunfleh, 2009).

Guldentops in (Grembergen et al., 2004) also addresses the importance of alignment on an operational level. He makes a distinction between vertical and horizontal alignment. Vertical alignment is primarily driven by repeatedly communicating an integrated Business and IT strategy down into the organization, and translating it at each organizational layer into the language, responsibilities, values, and challenges at that level. Horizontal alignment is primarily driven by cooperation between Business and IT on integrating the strategy, on developing and agreeing on performance measures and on sharing responsibilities.

Benbya and McKelvey came up with a model, which highlights the relevance of analyzing the relationship between Business and IT (Horizontal Alignment) but also the need to reconcile the views at different levels of analysis (Vertical Alignment). This model is shown in the enclosed. Further, they redefine alignment as follows: "Alignment is a continuous co-evolutionary process that reconciles top-down 'rational designs' and bottom-up 'emergent processes' of consciously and coherently interrelating all components of Business/IS relationships at three levels of analysis(strategic, operational and individual) in order to contribute to an organization's performance over time." (Benbya and McKelvey, 2006).

2.5 Aspects of Tactical Alignment

The first aspect was alignment at the level of projects the strategic IT plan specifies broad applications that need to be implemented. The IT projects that are to be executed actually to implement these are selected at the middle-management level. Projects have to compete with one another for resources. Resource monitoring and dynamic resource allocation are therefore required to ensure that projects have adequate technical and managerial resources and that they are implemented on time and within budget.

While it is common to have technical and resource-related success metrics, such as on-time/on-budget completion and development of specific applications features, for projects, the business success of a project depends on whether or not the implemented application is used and to what they extent they enable specific operational goals such as decreased time or more effective processes for accomplishing particular tasks. Hence, developing both IT and business metrics for projects ensure that the project addresses time and budget criterion, as well as fulfils operational level business goals.

The second aspect was to align the decision-making processes of the IT function and other departments, through governance mechanisms. These mechanisms create the framework for the interface of the IT department with other functional areas and lead to a better understanding of business requirements by IT managers, a greater appreciation of IT constraints and technical capabilities by functional managers, and better support of end users. Appropriate roles for IT professionals that situate them in user departments and allow for dotted line reporting to business department heads, ensure that the IT department is cognizant of functional needs.

The aspect is to balance firm-wide technology standardization with process-specific customization. This enables the firm to trim down redundancy, integrate elements of IT infrastructure such as networks across applications, and reduce competition for resources among applications that can use the same platform. Standardization choices are important for aligning requirements of new applications with the capabilities of existing infrastructure. Moreover, they form the basis for technology-related tactical decisions during mergers and acquisition.

The fourth aspect is formal and informal IT-business communication (Bassellier & Benbasat, 2004; Chan, 2002) at the middle and junior management levels ensure that day-to-day technology, prioritization, and resource-related problems are identified, discussed and mutually resolved by IT and functional managers. Communication can be through regular and pre-determined meetings between IT and business managers as well as through informal and impromptu walk around by IT managers, the fifth aspects are alignment at the level of skills. Matching the skills of middle and junior IT professionals with changing requirements vis-a-vis the IT function ensures that the IT function is continually current and relevant. Skills required of IT professionals at the execution level change as the firm undertakes new business strategies such as new product initiatives, mergers and acquisitions, and global expansion. For instance, when one firm acquires another, the IT function may have to acquire new technical skills to integrate and maintain new applications or infrastructure.

Hence, Tactical alignment is accomplished through operational level interaction and interfaces between IT and other business functions.

2.6 Tactical Alignment Barriers

It is often argued that IT does not understand the business environment and therefore cannot support and drive the business in a successful manner. Ray et al. (2005) and Rosenkranz et al. (2010) concluded that it is fundamental that IT understands the organizations business environment including external forces such as customers and competitors. In reverse, it is equally important for a business to understand IT. In achieving an understanding of business, IT should, for instance, communicate in business terms and also apply technical understanding to discover business opportunities. For example, IT can be used to deliver customer service. This way one can also measure data which enables enhancement of results. Another example of IT benefits are organizations that have IT-based business strategies, for instance, companies that sell customer tailored products. In reverse, it is also evident for business to understand IT (Wagner & Weitzel, 2012). It is also found by Campbell et al., (2005) and Wagner et al. (2010) that a tactical barrier faces managers is that formal business strategies are often too ambiguous for business managers to understand. In other words, managers face ambiguity surrounding the differences between espoused strategies, strategies in use, and managerial actions, many of which may be in conflict with one another. Reich & Benbasat (2000) found, and recently confirmed by Rao & Ramachandran (2011) that shared domain knowledge is an important alignment factor. The claims of Alaceva & Rusu (2015) for that the limited knowledge sharing leads to poor communication and low mutual understanding of business and IT goals support this. Moreover, IT and business executive's ability to understand and be able to participate in the

others' key processes, ensure better communication between business and IT. Furthermore, increased cross-border knowledge influences the relationship between business and IT. Therefore, business executives have ranked that IT does not prioritize their workload well according to business needs (Beimborn, 2012). On the other hand, IT is often overwhelmed with tasks to the degree that it becomes difficult to meet its commitments, which creates agitation in both end users and business executives. Cancelled and over budgeted IT projects are rarely because of technical problems. However, it still affects IT credibility. The main reason for IT failing to meet its commitments is not adhering to basic project management disciplines, as well as lack of business participation in the different aspects of the project (Jentsch & Beimborn, 2014; Fonstad & Robertson, 2006). Therefore Reich & Benbasat (2000) propose that the history of IT implementations within an organization is an important factor when it comes to alignment, and has been emphasized within the studies applying social capital theory or boundary object theory that have emerged more recently, since 2010 (Jentsch & Beimborn, 2014; Vermerris et al., 2014). Past failures or success of IT implementation can reduce or increase the credibility of IT.

3. OBJECTIVES AND SCOPE OF RESEARCH
The object of this study is to assess the level of strategic alignment and tactical alignment in educational institutes. To accomplish this goal, it offers and intends to define an agenda and an outline for business IT strategic alignment.
• To find out the factors responsible for achieving better strategic and tactical alignment
• To design a methodology in pursuit of achieving tactical or strategic alignment

3.1 Research Questions
a. To find out the factors responsible for achieving better strategic and tactical alignment
b. To design a methodology in pursuit of achieving tactical or strategic alignment

4. METHODOLOGY
As it is seen in the literature review section, there are various aspects associated with the business its alignment which can be a vital part of its success and development. A discrete study needs to be done to endorse the essential factors and strategy, which can affect business-IT alignment to enable the education system to remain competitive in the market and to serve more efficiently. The factors like Admission of students, its management, admit per student, accounting system, examinations, results, etc. will be taken out.

4.1 Survey instrument
The purpose is to find different factors, which would influence development, practice, and acknowledgement of Business IT alignment in the higher education systems. The primary effort will be to gather the feedbacks via interview. The interview is a qualitative research technique, which includes "conducting intensive individual interviews with a small number of respondents to explore their perspectives on a particular idea, program or situation." Here, the people will be requested to answer a few questions related to my research work. The survey will comprise all the essential and significant factors, which will be determined by taking into consideration all the research questions. Advantages of interviews include possibilities of collecting detailed information about research questions. Moreover, in this type of primary data collection, it has direct control over the flow of the process and has a chance to clarify certain issues during the process if needed. Disadvantages, on the other hand, include longer time requirements and difficulties associated with arranging an appropriate time with perspective sample group members to conduct interviews.

When conducting interviews, one should have an open mind and refrain from displaying disagreements in any forms when viewpoints expressed by interviewees contradict your own ideas. Moreover, timing and environment for interviews need to be scheduled effectively. Specifically, interviews need to be conducted in a relaxed environment, free of any forms of pressure for interviewees whatsoever. There is a risk of interviewee bias during the 7primary data collection process and this would seriously compromise the validity of the project findings. Some interviewer bias can be avoided by ensuring that the interviewer does not overreact to responses of the interviewee. Other steps that can be taken to help avoid or reduce interviewer bias include having the interviewer dress inconspicuously and appropriately for the environment and holding the interview in a private setting.

4.2 Sample selection
The sample will be various stakeholders as explained in the above theoretical framework. The response of the stakeholders concerning above-noted parameters will be captured. I will approach all the stakeholders associated with the department and obtain their reactions in this questionnaire.

4.3 Data Source
Chairman, Vice Chancellors, Principals, Deans, HoDs, faculties, staffs, students, administrators and developers of selected existing online communities in the education sector. Location: Bhubaneswar, Odisha has been decided for the data collection. Few of the Top Management colleges/ Medical Colleges/ Engineering colleges will be visited to collect data from all the sources. Application developers, senior managers, and management of a few IT service providers in the academic domain from Bhubaneswar will be contacted to acquire relevant and latest data on their part.

4.4 Analysis
After the responses are gathered, the data and factors will be organized properly. It will be organized in a group categorizing Tactical and Strategical level of people. The next step is to listen, read all the data carefully, and construct a category system, which allows all the data to be categorized systematically. After the data are coded, the data will be displayed and organized so that it could be interpreted. Simple matrices or chart can be used to compile interview data so that patterns can be determined among respondents. To analyze the data the computer-assisted qualitative data analysis program i.e., ATLAS.ti will be used. This

program will link code with the text in order to perform complex model building and help in data management. The qualitative metrics will be done to check the rationality and dependability of the model. The outcomes obtained will be explained to conclude about the relative significance of these factors affecting the development, usability, and success of the Business IT alignment in education systems.

ATLAS.ti is a Computer Assisted Qualitative Data Analysis Software, CAQDAS, which is an application, built for aiding the analysis of qualitative data. Many different CAQDAS are also available online and so is widely used by many researchers. ATLAS.ti is one of the used tools for qualitative analysis of large data. This software comes equipped with sophisticated features that aid the organization and management of large data. Atlas.ti offers a large variety of media types including txt, doc, docx, odt, pdf, wav, mp3, mp4, avi and a host of others. ATLAS.ti also comes with a high level of coding and visualization features make it easy to summarize large data.

It is leading software for Qualitative Data Analysis. It reveals meanings and relationships allowing users to ground their findings in the data. ATLAS.ti allows users to gain rich insights with the most intuitive and powerful QDA software. It is completely redesigned in nearly every aspect, ATLAS.ti 8 is poised to set a new standard for computer-assisted qualitative data analysis. It is easier to learn and use than any other QDA program – including older versions of ATLAS.ti. It is completely revamped interface has been designed to follow rigorous principles of friction-oriented usability. It employs a logical ribbon structure, context menus and keyboard shortcuts to make the workflow as ergonomic as possible.

Here, the focus is on getting results quickly and efficiently. In addition, ATLAS.ti is powerful and innovative.

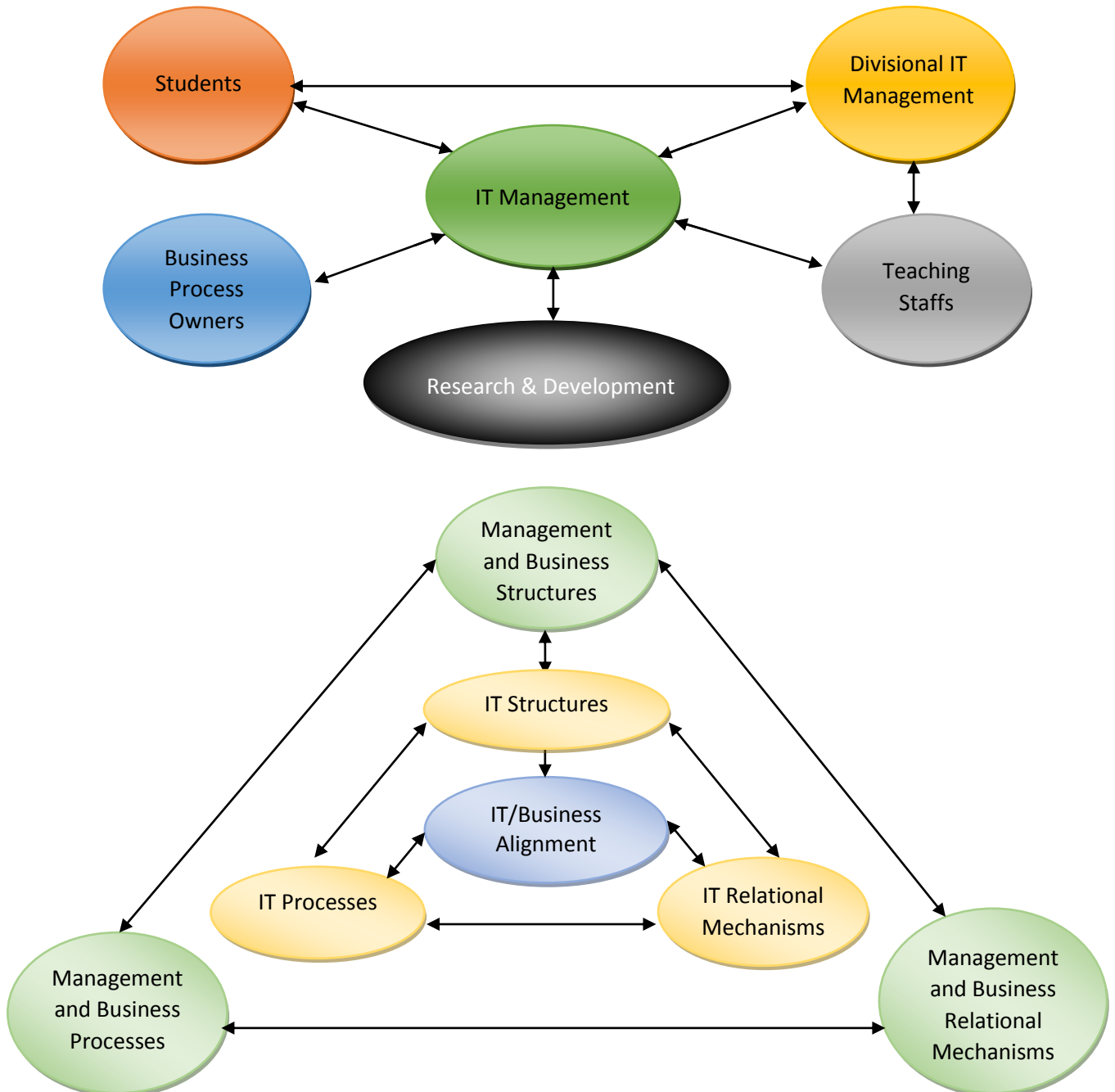**4.5 Theoretical Construct**

Fig. 1: Theoretical Construct

Students, Teaching staff, Research & Development, Business Process Owners, and Divisional IT Management are the key stakeholder groups for Central IT. Whilst Students and Teaching Staff are included in Divisional IT. This illustration is shown in the Figure above. To improve the frequency and quality of communication with these groups, Central IT made efforts. However, there are still perceived gaps in this communication amongst both students and faculty and more effort is required in this area. Often communications take place at the tactical level. For instance, if a significant outage of services is being considered, divisional IT contacts and business process owners are contacted and their responses are used to guide appropriate decision-making.

5. REFERENCES

[1] Amit, R. and P. Schoemaker, "Strategic Assets and Organizational Rent," Strategic Management Journal, 14 (1), 1993, pp. 33-46.

[2] Anderson, P., Complexity theory, and organization science. Organization Science, 10(3), 1999, pp. 216-232.

[3] Axelrod, R., & Cohen, M. D., Harnessing complexity: Organizational implications of a scientific frontier. New York, NY: Basic Books, 2000.

[4] Baets, W., "Some Empirical Evidence on IS Strategy Alignment in Banking," Information and Management, 30 (4), 1996, pp. 155-177.

[5] Bagozzi, R. P., Causal Models in Marketing. New York: Wiley, 1980.

[6] Baker, J., Jones, D. R., Cao, Q., & Song, J., Conceptualizing the dynamic strategic alignment competency. Journal of the AIS, 12(4), 2011, pp. 299-322.

[7] Bakos, J. Y., "Dependent Variables for the Study of Firm and Industry-Level Impacts of Information Technology," in J. I. DeGross and C. H. Kriebel (Editors) Proceedings of the 8th International Conference on Information Systems, Pittsburgh, PA, December 1987, pp. 10-23.

[8] Bakos, J. Y., "A Strategic Analysis of Electronic Marketplaces," MIS Quarterly, 15 (3), 1991, pp. 295-310.

[9] Bakos, J. Y. and C. F. Kemerer, "Recent Applications of Economic Theory in Information Technology Research," Decision Support Systems, 8 (5), 1992, pp. 365-386.

[10] Bakos, J. Y. and M. E. Treacy, "Information Technology and Corporate Strategy," MIS Quarterly, 10(2), 1986, pp. 107-119.

[11] Banker, R. D. and R. J. Kauffman, "Quantifying the Business Value of Information Technology: An Illustration of the 'Business Value Linkage' Framework," Stem School of Business, New York University Working Paper, March 1991.

[12] Barney, J. B., "Firm Resources and Sustained Competitive Advantage," Journal of Management, 17(1), 1991, pp. 99-120.

[13] Barua, A., C. H. Kriebel and T. Mukhopadhyay, "Information Technologies and Business Value: An Analytic and Empirical Investigation," Information Systems Research, 6(1), 1995, pp. 3-23.

[14] Berger, P., J. G. Kobielus and D. E. Sutherland, Measuring the Business Value of U. Washington, DC: ICIT Press, 1988.

[15] Bemdt, E. R. and C. J. Morrison, "High-tech Capital Formation and Economic Performance in the U.S. Manufacturing Industries: An Exploratory Analysis," Journal of Econometrics, 65(1), 1995, pp. 9-43.

[16] Benbya, H., & McKelvey, B., Using coevolutionary and complexity theories to improve IS alignment: A multi-level approach. Journal of Information Technology, 21, 2006a, pp. 284-298.

[17] Benbya, H., & McKelvey, B., Toward a complexity theory of information systems development. Information Technology and People, 19(1), 2006b, pp. 12-34.

[18] Berio, G., Vernadat, F.: Enterprise modelling with CIMOSA: Functional and organizational aspects. Production Planning Control 12(2), 2001, pp. 128.

[19] Bleistein, S.J., Cox, K., Verner, J., Phalp, K.T.: B-SCP: A requirements analysis framework for validating strategic alignment of organizational IT based on strategy, context, and process. Information and Software Technology 48, 2006, pp. 846–868.

[20] Bollen, K. A., Structural Equations with Latent Variables. New York: Wiley, 1989.

[21] Bourgeois, L. J. Ill, "Strategic Goals, Perceived Uncertainty, and Economic Performance in Volatile Environments," Academy of Management Journal, 28 (3), 1985, pp. 548-573.

[22] Boynton, A. C., R. W. Zmud and G. C. Jacobs, "The Influence of IT Management Practice on IT Use in Large Organizations," MIS Quarterly, 18 (3), 1994, pp. 299-318.

[23] Broadbent, M. and P. Weill, "Improving Business and Information Strategy Alignment: Learning from the Banking Industry," IBM Systems Journal, 32 (1), 1993, pp. 162-179.

[24] Broadbent, M., P. Weill and D. St. Clair, "The Role of Information Technology Infrastructure in Business Process Redesign," Working Paper #3824, Center for Information Systems Research, Sloan School of Management, Massachusetts Institute of Technology, 1995.

[25] Brooke, G. M., "Information Technology and Productivity: An Economic Analysis of the Effect of Product Differentiation," Unpublished PhD Dissertation, University of Minnesota, 1991.

[26] Brooks, F. P., The design of design. New York, NY: Pearson Education, 2010.

[27] Brynjolfsson, E., "The Productivity Paradox of Information Technology," Communications of the ACM, 35 (12), 1993, pp. 66-77.

[28] Brynjolfsson, E. and L. Hitt, "Information Technology as a Factor of Production: The Role of Differences among Firms," Economics of Innovation and New Technology, 3 (4), 1995, pp. 183-200.

[29] Brynjolfsson, E. and L. Hitt, "The Customer Counts," Information Week, September 9, 1996a, pp. 48-54.

[30] Brynjolfsson, E. and L. Hitt, L. "Paradox Lost? Firm-Level Evidence on the Returns to Information Systems Spending," Management Science, 42 (4), 1996b, pp. 541-558.

[31] Brynjolfsson, E. and L. Hitt, "Information Technology and Internal Firm Organization: An Exploratory Analysis," Working Paper, 1997.

[32] Busch, E. A., S. L. Jarvenpaa, N. Tractinsky and W. H. Glick, "External Versus Internal Perspectives in Determining a Firm's Progressive Use of Information Technology," in J. I. DeGross, I. Benbasat, G. DeSanctis and C. Beath (Editors), Proceedings of the 12th International Conference on Information Systems, New York, NY, 1991, pp. 239-250.

[33] Cameron, K. S. and D. A. Whetten (Editors), Organizational Effectiveness: A Comparison of Multiple Models. New York, NY: Academic Press, 1983.

[34] Cash, J. and B. Konsynski, "IS Redraws Competitive Boundaries," Harvard Business Review, 63 (2), 1985, pp. 134-142.

[35] Callahan, C. V. and J. Nemec Jr., "The CEO's Information Technology Challenge," Strategy and Business, Issue 14, 1999.

[36] Chan, Y. E., "Business Strategy, Information Systems Strategy, and Strategic Fit: Measurement and Performance Impacts," Unpublished Ph.D. Dissertation, University of Western Ontario, 1992.

[37] Chan, Y. E., S. L. Huff, D. W. Barclay and D. G. Copeland, "Business Strategy Orientation, Information Systems Orientation and Strategic Alignment," Information Systems Research, 8 (2), 1997, pp. 125-150.

[38] Chan, Y. E., Why haven't we mastered alignment? The importance of the informal organizational structure. MIS Quarterly Executive, 1(2), 2002, pp. 97-112.

[39] Chandler, A. D. Jr., Strategy, and Structure: Chapters in the History of the Industrial Enterprise. Cambridge, MA: MIT Press, 1962.

[40] Chen, D., Doumeningts, G., Vernadat, F.: Architectures for enterprise integration and interoperability: past, present, and future. Computers in industry 59, 2008, pp. 647–659.

[41] Child, J., "Organizational Structure, Environment, and Performance: The Role of Strategic Choice," Sociology, 6, 1972, pp. 1-22.

[42] Chin, W. C., and P. R. Newsted, "Structural Equation Modeling Analysis with Small Samples Using Partial Least Squares," in R. H. Hoyle (Ed.), Statistical Strategies for Small Sample Research. Thousand Oaks, CA: Sage Publications, 1999, pp. 307-341.

[43] Ciborra, C.U.: De Profundis? "Deconstructing the concept of strategic alignment." Scandinavian journal of Information Systems 9(1), 67–82 (1997)

[44] CIMOSA: Open System Architecture for CIM. 2nd extended, revised version. Springer, Berlin (1993)

[45] Clemons, E. K., and M. C. Row, "Sustaining IT Advantage: The Role of Structural Differences," MIS Quarterly, 15 (3), 1991, pp. 275-292.

[46] Coakley, J. R., M. K. Fiegener and D. M. White, "Assessing Strategic IT Alignment in a Transforming Organization," in Proceedings of the 2nd Association for Information Systems Conference, Phoenix, Arizona, August 1996, pp. 291-293.

[47] Cohen, J., Statistical Power Analysis for the Behavioral Sciences (Second Edition). Hillsdale, NJ: Erlbaum Associates, 1988.

[48] Cohen, W. M., and D. A. Levinthal, "Absorptive Capacity: A New Perspective on Learning and Innovation," Administrative Science Quarterly, 35 (1), 1990, pp. 128-152.

[49] Collis, D. J. and C. A. Montgomery, Corporate Strategy: A Resource-Based Approach. Boston, MA: Irwin/McGraw-Hill, 1998. Computer Sciences Corporation (CSC), Critical Issues of Information Systems Management, Annual Report, 1996.

[50] Cron W. L. and M. G. Sobol, "The Relationship Between Computerization and Performance: A Strategy for Maximizing the Economic Benefits of Computerization," Information and Management, 6 (3), 1983, pp. 171-181.

[51] Crowston, K.., and Treacy, M. E., "Assessing the Impacts of Information Technology on Enterprise Level Performance." In L. Maggi, R. Zmud and J. Wetherbe (Editors), Proceedings of the 7th International Conference on Information Systems, San Diego, CA, 1986, pp. 377-388.

[52] Das, S. R., S. A. Zahra and M. E. Warkentin, "Integrating the Content and Process of Strategic MIS Planning with Competitive Strategy," Decision Sciences, 22 (5), 1991, pp. 953-984.

[53] Davenport, T. H., Process Innovation: Reengineering Work through Information Technology. Boston, MA: Harvard Business School Press, 1993.

[54] Davis, F., "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology," MIS Quarterly, 13(3), 1989, pp. 319-340.

[55] Davis, G. B., and M. H. Olson, Management Information Systems. New York, NY: McGraw-Hill, 1985.

[56] DeLone, W. H. and E. R. McLean, "Information Systems Success: The Quest for the Dependent Variable," Information Systems Research, 3 (1), 1992, pp. 60-95.

[57] Dess, G. G. and R. B. Robinson, "Measuring Organizational Performance in the Absence of Objective Measures: The Case of the Privately-Held Firm and Conglomerate Business Unit," Strategic Management Journal, 5 (3), 1984, pp. 265-273.

[58] Dess, G. G., & Davis, P. S. (1984). Porter's (1980) Generic strategies as determinants of strategic group membership and organizational performance. Academy of Management Journal, 27(3), pp. 467-488.

[59] Dewan, S. and C. Min, "The Substitution of Information Technology for Other Factors of Production: A Firm-Level Analysis," Management Science, 43 (12), 1997, pp. 1660-1675.

[60] DoD Architecture Framework. Version 1.5. Volume I: Definitions and Guidelines, DoD Architecture Framework Version 1.5

[61] www.defenselink.mil.com/cio-nii/docs

[62] Dorociak, J. J., The alignment between business and information system strategies in small banks: An analysis of performance impact (Doctoral thesis). Capella University, 2007.

[63] Drazin, R. and A. Van de Ven, "Alternative Forms of Fit in Contingency Theory," Administrative Science Quarterly, 30 (4), 1985, pp. 514-539.

[64] Dunn, G., B. Everitt and A. Pickles, Modeling Covariances and Latent Variables using EQS, Chapman and Hall, London 1993. Earl, M. J., "Experiences in Strategic Information Systems Planning," MIS Quarterly, 17 (1), 1993, pp. 1-24.

[65] Edwards, J. R., "The Study of Congruence in Organizational Behavior Research: Critique and a Proposed Alternative," Organizational Behavior and Human Decision Processes, 58 (1), 1994, pp.51-100.

[66] Edwards, J. R., "Alternatives to Difference Scores as Dependent Variables in the Study of Congruence in Organizational Research," Organizational Behavior and Human Decision Processes, 64 (3), 1995, pp. 307-324.

[67] EN/ISO 19439 Enterprise integration — Framework for enterprise modeling (2006)

[68] EN/ISO 19440 Enterprise integration — Constructor for enterprise modeling (2007)

[69] Falk, R. and N. Miller, A Primer for Soft Modeling. Akron, OH: University of Akron Press, 1992.

[70] Fichman, R. G., Keil, M., & Tiwana, A., "Beyond valuation: Options thinking in IT project management." California Management Review, 47(2), 2006, pp. 74-96.

[71] Fine, C., Clockspeed: Winning Industry Control in the Age of Temporary Advantage. Reading, MA: Perseus Books, 1998.

[72] Fomell, C. and D. F. Larcker "Evaluating Structural Equation Models with Unobservable Variables and Measurement Error, n Journal of Marketing Research, 18(1), 1981, pp. 39—50.

[73] Galbraith, J., Organization Design. Reading, MA: Addison-Wesley Publication Co., 1977. Gamer, R., "CEOs to IT: Teach Us," Computerworld, October 19, 1998, pp. 84-85.

[74] Gammelgård, M., Simonson, M., Lindström, A.: An IT management assessment framework: evaluating enterprise architecture scenarios. Inf. Syst. E-Business Management 5(4), 2007, pp. 415–435.

[75] Gerow, J. E., Thatcher, J. B., & Grover, V. (2015). Six types of IT-business strategic alignment: An investigation of the constructs and their measurement. European Journal of Information Systems, 24(5), 465-491.

[76] Gerow, Jennifer E., Thatcher, J., Roth, Philip, "Looking toward the Future of IT–Business Strategic Alignment through the Past: A Meta-Analysis," MIS Quarterly, 38(4), December 2014, pp.1159-1185.

[77] Ginsberg, A., "Operationalizing Organizational Strategy: Toward an Integrative Framework," Academy of Management Review, 9 (3), 1984, pp. 548-557.

[78] Ginsberg, A. and N. Venkatraman, "Contingency Perspectives of Organizational Strategy: A Critical Review of the Empirical Research," Academy of Management Review, 10 (3), 1985, pp. 421-434.

[79] Goodhue, D. L., & Thompson, J. D., Task-technology fit and individual performance. MIS Quarterly, 19(2), 1995, pp. 213-236.

[80] Gottschalk, Petter: E-Business Strategy, Sourcing and Governance, 2006

[81] Grant, R. M., "The Resource-Based Theory of Competitive Advantage: Implications for Strategy Formulation," California Management Review, 33 (3), 1991, pp. 114-135.

[82] Grant, J. H. and W. R. King, "The Logic of Strategic Planning." Boston, MA: Little, Brown, 1982.

[83] Gregor, S., The nature of theory in information systems. MIS Quarterly, 30(3), 2006, pp. 611-642.

[84] Griffith, V., "Making Information Technology Strategic," Strategy and Business, Issue 9, 1997.

[85] Grover, V., J. Teng, A. H. Segars and K. Fiedler, "The Influence of Information technology Diffusion and Business Process Change on Perceived Productivity: The IS Executive's Perspective,"Information and Management, 34 (3), 1998, pp. 141-159.

[86] Gurbaxani, V. and S. Whang, "The Impact of Information Systems on Organizations and Markets," Communications of the ACM, 34 (1), 1991, pp. 59-73.

[87] Hambrick, D. C., "Taxonomic Approaches to Studying Strategy: Some Conceptual and Methodological Issues," Journal of Management, 10(1), 1984, pp. 27-41.

[88] Hammer, M. and J. Champy, Reengineering the Corporation: A Manifesto for r Business Revolution. New York, NY: Harper Collins Publishers Inc., 1993.

[89] Hannan, M. T., and J. Freeman, Organizational Ecology. Cambridge, MA: Harvard University Press, 1989.

[90] Harris, M. L., Collins, R. W., & Hevner, A., Control of flexible software development under uncertainty. Information Systems Research, 20(3), 2009, pp. 400-419.

[91] Hax, A. C., and N. S. Maijuf, Strategic Management: An Integrative Perspective. Englewood Cliffs, NJ: Prentice-Hall, 1984.

[92] Henderson, J. C., and J. G. Sifonis, "The Value of Strategic IT Planning: Understanding Consistency, Validity and IS Markets," MIS Quarterly, 12 (2), 1988, pp. 187-200.

[93] Henderson, J. C. and N. Venkatraman "Strategic Alignment: A Model for Organizational Transformation through Information Technology," in T. A. Kochan and M. Useem (Editors), Transforming Organizations. New York: Oxford University Press, 1992.

[94] Henderson, J. C. and N. Venkatraman, "Strategic Alignment: Leveraging Information Technology for Transforming Organizations," IBM Systems Journal, 32 (1), 1993, pp. 4-16.

[95] Henderson, J. C., J. B. Thomas and N. Venkatraman, "Making Sense of IT: Strategic Alignment and Organizational Context," Working Paper #3475-92 BPS, Sloan School of Management, Massachusetts Institute of Technology, 1992.

[96] Hirschheim, R., Sabherwal, R.: Detours in the Path toward Strategic prioritizing Information Systems Alignment. California Management Review, Fall 44(1), 2001, pp. 87–108.

[97] Hitt, L. and E. Brynjolfsson, "Productivity, Business Profitability, and Consumer Surplus: Three Different Measures of Information Technology Value," MIS Quarterly, 20(2), 1996, pp. 121-142.

[98] Hofer, C. W. and D. E. Schendel, Strategy Formulation: Analytical Concepts. St. Paul, MN: West Publishing Company, 1978. Itami, H. and T. Numagami, "Dynamic Interaction between Strategy and Technology," Strategic Management Journal, 13 (special issue), 1992, pp. 119-135.

[99] Hooper, V. A., Huff, S. L., & Thirkell, P. C., The impact of the alignment between information systems and marketing on business performance. ACM SIGMIS Database, 41(1), 2010, pp. 36-55.

[100] IFIP-IFAC Task Force, GERAM: Generalized Enterprise Reference Architecture and Methodology, Version 1.6.2, Annex to ISO WD15704, IFIP-IFAC Task Force (1999)

[101] Ives, B. and G. P. Learmonth, "The Information System as a Competitive Weapon," Communications of the ACM, 27 (12), 1984, pp. 1193-1201.

[102] Ives, B. and R. Mason, "Can Information Technology Revitalize Your Customer Service?" Academy of Management Executive, 4 (4), 1990, pp. 52-69.

[103] Jarvenpaa, S. L., and B. Ives, "Executive Involvement and Participation in the Management of IT." MIS Quarterly, 15 (2), 1991, pp. 205-227.

[104] Jarvenpaa, S. L. and B. Ives, "Organizational Fit and Flexibility: IT Design Principles for a globally Competing Firm," in C. C. Snow (Editor), Strategy, Organization Design and Human Resource Management, Volume 3. Greenwich, Connecticut: JAI Press Inc., 1994, pp. 1-39.

[105] Johnson, H. R., and S. R. Carrico, "Developing Capabilities to Use Information Strategically," MIS Quarterly, 12 (1), 1988, pp. 37-48.

[106] Kambil, A., J. Henderson and H. Mohsenzadeh, "Strategic Management of Information Technology Investments: An Options Perspective," In R. D. Banker, R. J. Kauffman, and M. A. Mahmood (Editors), Strategic Information Technology Management: Perspectives on Organizational Growth and Competitive Advantage. Harrisburg, PA: Idea Group Publishing, 1993.

[107] Kambil, A. and J. Turner, "Outsourcing of Information Systems as a Strategy for Organizational Alignment and Transformation," Working Paper #IS-94-4, Center for Research on Information Systems, New York University, 1994.

[108] Kang, S., Park, J. H., & Yang, H. D., ERP alignment for positive business performance: Evidence from Korea's ERP market. Journal of Computer Information Systems, 48(4), 2008, pp. 25-38.

[109] Kaplan, B. and D. Duchon, "Combining Qualitative and Quantitative Methods in Information Systems Research: A Case Study," MIS Quarterly, 12 (4), 1988, pp. 571-586.

[110] Kappelman, L., McLean, E., Johnson, V., & Gerhart, N., The 2014 SIM IT key issues and trends study. MIS Quarterly Executive, 13(4), 2014, pp. 237-263.

[111] Karimi, J. and B. R. Konsynski "Globalization and Information Management Strategies," Journal of Management Information Systems, 7 (4), 1991, pp. 7-26.

[112] Kauffman R. J., and Weill, P., "An Evaluative Framework for Research on the Performance Effects of Information Technology Investment," in J. I. DeGross, J. C. Henderson, and B. R.Konsynski (Editors), Proceedings of the 10th International Conference on Information Systems, Boston, MA, 1989, pp. 377-388.

[113] Kearns, G. S., & Lederer, A., A resource-based view of strategic IT alignment: How knowledge sharing creates competitive advantage. Decision Sciences, 34(1), 2003, pp. 1-29.

[114] Kearns, G. S., "Alignment of Information Systems Strategy with Business Strategy: Impact on the Use of IS for Competitive Advantage," Unpublished Ph.D. Dissertation, University of Kentucky, 1997.

[115] Keen, P., "MIS Research, Reference Disciplines and a Cumulative Tradition," in E. R. McLean (Ed.), Proceedings of the 1st International Conference on Information System, Philadelphia, PA, 1990, pp. 9-18.

[116] Keen, P. G. W., Shaping the Future: Business Design through Information Technology. Cambridge, MA: Harvard Business School Press, 1991.

[117] Kelley, M. R., "Productivity and Information Technology: The Elusive Connection," Management Science, 40 (11), 1994, pp. 1406-1425.

[118] Kempis, R. and J. Ringbeck, Do IT Smart: Seven Rules for Superior Information Technology Performance. New York, NY: Free Press, 1999.

[119] Kim, G., Shin, B., Kim, K. K., & Lee, H. G., IT capabilities, process-oriented dynamic capabilities, and firm financial performance. Journal of the Association for Information Systems, 12(7), 2011, pp. 487-517.

[120] King, J., "CIOs Morph into Business Strategists," Computerworld, 34 (19), 2000, pp. P2-P4.

[121] King, W. R., & Teo, T., Integration between business planning and information systems planning: Validating a stage hypothesis. Decision Sciences, 28(2), 1997, pp. 279-308.

[122] King, W. R., "Strategic Planning for Management Information Systems," M IS Quarterly, 2(1), 1978, pp. 27-37.

[123] Kishore, R., & McLean, E., Reconceptualizing innovation compatibility as organizational alignment in secondary IT adoption contexts: An investigation of software reuse infusion. IEEE Transactions on Engineering Management, 54(4), 2007, pp. 756-775.

[124] Kraemer, K. L. J. Dedrick and S. Yamashiro, "Refining and Extending the Business Model with Information Technology: Dell Computer Corporation," The Information Society, 16 (1), 2000, pp. 5-21.

[125] Kuhn. T., The Structure of Scientific Revolutions. Chicago, IL: University of Chicago Press. 1970.

[126] Laudon K. and J. Laudon, Managing Information Systems: New Approaches to Organization and Technology, Fifth Edition. Upper Saddle River, NJ: Prentice-Hall, 1998.

[127] Lawrence, P. R. and J. W. Lorsch, Organization and Environment: Managing Differentiation and Integration. Boston, MA: Harvard Business School Press, 1986.

[128] Lederer, A. and A. Mendelow, "Convincing Top Management of the Strategic Potential of Information Systems," MIS Quarterly, 12 (4), 1988, pp. 525-534.

[129] Lederer, A. L., & Mendelow, A. L., Information resource planning: Overcoming difficulties in identifying top management's objectives. MIS Quarterly, 11(3), 1987, pp. 389-399.

[130] Leibovich, M., "Charles Schwab Trading Hit by Online Outage," Washington Post, February 29, 1999, p. E01.

[131] Leonard-Barton, D., "Core Capabilities and Core Rigidities: A Paradox in Managing New Product Development," Strategic Management Journal, 13, summer 1992, pp. 111-125.

[132] Leonard, J., Seddon, P., "A Meta-model of Alignment," Communications of the Association for Information Systems, 31(11), 2012, pp. 231-259.

[133] Lichtenberg, F. R., "The Output Contributions of Computer Equipment and Personnel: A Firm-Level Analysis," Economic Innovations and New Technology, 3, 1995, pp. 201-217.

[134] Lindström, A.: An Approach for Developing Enterprise-Specific ICT Management Methods – from Architectural Principles to Measures (2006)

[135] Ling, H., Zhao, F., & Wang, Y., Impact of synergy between IT and business process on organizational performance: A perspective of ambidexterity theory. In Proceedings of the 12th Pacific Asia Conference on Information Systems, 2009.

[136] Loveman, G. W., "Assessing the Productivity Impact of Information Technologies," in T. J. Allen and M. Scott-Morton (Editors), Information Technology and the Corporation of the 1990s. New York, NY: Oxford University Press, 1994.

[137] Lucas, H. C., "Presentation and the Use of an Information System," Management Science, 21 (8), 1975, pp. 908-919.

[138] Lucas, H. C. Jr., Information Technology, and the Productivity Paradox. New York, NY: Oxford University Press, 1999.

[139] Luftman, J. N., P. R. Lewis and S. H. Oldach, "Transforming the Enterprise: The Alignment of Business and Information Technology Strategies," IBM Systems Journal, 32(1), 1993, pp. 198-221.

[140] Luftman, J.N., R. Papp and T. Brier, "Enablers and Inhibitors of Business-IT Alignment," Communications of the Association for Information Systems, 1 (11), 1999, pp. 1-33.

[141] Luftman, J.: Assessing business-it alignment maturity. Communications of the association for information systems 4(14) (2000)

[142] Luftman, J., Lyytinen, K., Zvi, T., "Enhancing the measurement of information technology (IT) business alignment and its influence on company performance," Journal of Information Technology, 21(1), September 2015

[143] McFarlan, W., "Information Technology Changes the Way You Compete," Harvard Business Review, 62 (3), 1984, pp. 98-103.

[144] McFarlan, W, J. L. McKenney and P. Pybum, "The Information Archipelago - Plotting a Course," Harvard Business Review, 83 (1), 1983, pp. 145-156.

[145] McLaren, T. S., Head, M. M., Yuan, Y., & Chan, Y. E., A multilevel model for measuring fit between a firm's competitive strategies and information systems capabilities. MIS Quarterly, 35(4), 2011, pp. 909-929.

[146] Mahmood, M. A. and S. K. Soon, "A Comprehensive Model for Measuring the Potential Impact of Information Technology on Organizational Strategic Variables," Decision Sciences, 22 (4), 1991, pp. 869 -897.

[147] Ma, L. C. K., J. M. Bum, R. D. Galliers and P. Powell, "Successful Management of Information Technology: A Strategic Alignment Perspective," Proceedings of the 31st Hawaii International Conference on Systems Sciences, 1998, pp. 13-22.

[148] Maes, R.: A Generic Framework for Information Management. Prime Vera Working Paper, Universiteit Van Amsterdam (1999)

[149] Malone, T. W., "Modeling Coordination in Organizations and Markets," Management Science, 33 (10), 1987, pp. 1317-1332.

[150] March, J. G. and H. A. Simon, Organizations. New York, NY: John Wiley Publishers.

[151] Markus, M. L., and C. Soh, "Banking on Information Technology: Converting IT Spending into Firm Performance," in R. D. Banker, R. J. Kauffman, and M. A. Mahmood (Editors), Strategic Information Technology Management: Perspectives on Organizational Growth and Competitive Advantage. Harrisburg, PA: Idea Group Publishing, 1993.

[152] Martin, R., Robertson, E.: Frameworks: comparison and correspondence for three archetypes (2002)

[153] Mason, R. O. and I. I. Mitroff, Challenging Strategic Planning Assumptions. New York, NY: John Wiley & Co., 1981.

[154] Mendelson, H. and R. R. Pillai, "Clockspeed and Informational Response: Evidence from the Information Technology Industry," Information Systems Research, 9 (4), 1998, pp. 415-433.

[155] Mendelson, H. and R. R. Pillai, "Information Age Organizations, Dynamics and Performance," Journal of Economic Behavior and Organization, 38 (3), 1999, pp. 253-281.

[156] Mendelson, H. and J. Ziegler, Survival of the Smartest: Managing Information for Rapid Action and World-class Performance. New York, NY: John Wiley &Sons, Inc., 1999.

[157] Miles, R. E., and C. C. Snow, "Fit, Failure and the Hall of Fame," California Management Review, 26 (3), 1984, pp. 10-28.

[158] Miles, R. E., & Snow, C. C., Organizational strategy, structure, and process. New York, NY: McGraw-Hill, 1978.

[159] Miller, D. The Icarus Paradox: How Exceptional Companies bring about their own Downfall? Harper Business, 1990.

[160] Miller, J., ''Aligning Information Systems with the Organization: A Measurement Tool and its Application," Working Paper #IS-92-9, Center for Research on Information Systems, New York University, 1992.

[161] Mintzberg, H., "Patterns in Strategy Formation," Management Science, 24 (9), 1978, pp. 934-948.

[162] Mohdzain, M. B., & Ward, J. M., A study of subsidiaries' views of information systems planning in multinational organizations. Journal of Strategic Information Systems, 16(4), 2007, pp. 324-352.

[163] Mooney, J. G., "The Productivity and Business Value Impacts of Information Technology: Economic and Organizational Analyses," Unpublished Ph.D. Dissertation, University of California, Irvine, 1997.

[164] Mooney, J. G., V. Gurbaxani and K. L. Kraemer, "A Process-Oriented Framework for Assessing the Business Value of Information Technology," in J. I. DeGross, G. Ariav, C. Beath. R. Hoyer and C. Kemerer (Editors), Proceedings of the 16th International Conference on Information System, Amsterdam, The Netherlands, 1995, pp. 17-27.

[165] Mukhopadhyay, T., S. Kekre and S. Kalathur, "Business Value of Information Technology: A Study of Electronic Data Interchange," MIS Quarterly, 19 (2), 1995, pp. 137-156.

[166] Niederman, F., J. C. Brancheau and J. C. Wetherbe, "Information Systems Management Issues for the 1990s," MIS Quarterly, 15 (4), 1991, pp. 474-500.

[167] Nelson, R. and S. Winter, An Evolutionary Theory of Economic Change. Cambridge, MA: Harvard University Press, 1982.

[168] Nevo, S., & Wade, M. R., The formation and value of IT-enabled resources: Antecedents and consequences of synergistic relationships. MIS Quarterly, 34(1), 2010, pp. 163-183.

[169] Nohria, N., & Gulati, R., Is slack good or bad for innovation? Academy of Management Journal, 39(5), 1996, pp. 1245-1264.

[170] Nunnally, J. C., Psychometric Theory (Second Edition). New York, NY: McGraw-Hill, 1978. Parsons, G. L., "Information Technology: A New Competitive Weapon," Sloan Management Review, 25 (1), 1983, pp. 3-14.

[171] Oh, W., & Pinsonneault, A., On the assessment of the strategic value of information technologies: Conceptual and analytical approaches. MIS Quarterly, 31(2), 2007, pp. 239-265.

[172] Ortiz, A., Lario, F., Ros, L.: IE-GIP. A proposal for a Methodology to Develop Enterprise Integration Program. Computers in Industry 40, 155–171 (1999).

[173] Palmer, J. W., & Markus, M. L., The performance impacts of quick response and strategic alignment in specialty retailing. Information Systems Research, 11(3), 2000, pp. 241-259.

[174] Papp, R.: Business-IT alignment: productivity paradox payoff? Industrial Management & Data Systems 99(8), 367–373 (1999)

[175] Parthasarathy, R. and S. Prakash, "Relating Strategy and Structure to Flexible Automation: A Test of Fit and Performance Implications," Strategic Management Journal, 14(7), 1993, pp. 529-549.

[176] Pennings, J. M. and A. Buitendam, New Technology as Organizational Innovation. Cambridge, MA: Ballinger Publishing Company, 1987.

[177] Penrose, E., The Theory of the Growth of the Firm. Basil Blackwell: London, 1959.

[178] Pereira, C., Sousa, P.: Enterprise Architecture: Business and IT Alignment. In: ACM Symposium on Applied Computing (2005).

[179] Pine, B. J. II, D. Peppers and M. Rogers, "Do You Want to Keep Your Customer Forever?" Harvard Business Review, 73 (2), 1995, pp. 103-108.

[180] Pine, B. J. II, B. Victor and A. C. Boynton, "Making Mass Customization Work" HarvardBusiness Review, 71 (5), 1993, pp. 108-111.

[181] Pinsonneault, A. and K. L. Kraemer, "Survey Research Methodology in Management Information Systems: An Assessment," Journal of Management Information Systems, 10 (2), 1993, pp. 75-105.

[182] Plazaola, L., Flores, J., Silva, E., Vargas, N., Ekstedt, M.: An Approach to Associate Strategic Business-IT Alignment Assessment to Enterprise Architecture. In: Conference on Systems Engineering Research, Stevens Institute of Technology Campus, USA (2007)

[183] Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P., Common method bias in behavioral research: A critical review of the literature and recommended remedies. Journal of Applied Psychology, 88(5), 2003, pp. 879-903.

[184] Popper, K. R., Logic of Scientific Discovery. New York, NY: Basic Books, 1959.

[185] Porter, M. E., Competitive strategy: Techniques for analyzing industries and competitors. New York, NY: Free Press, 1980.

[186] Porter, M. E., Competitive Advantage. New York, NY: Free Press, 1985.

[187] Porter, M. E., "From Competitive Advantage to Corporate Strategy," Harvard Business Review, 65 (3), 1987, pp. 43-59.

[188] Porter, M. E. "Towards a Dynamic Theory of Strategy," Strategic Management Journal, 12, Winter 1991, pp. 95-117.

[189] Porter, M. E., "What is Strategy?" Harvard Business Review, 74 (6), 1996, pp. 61-77.

[190] Porter, M. E., and V. E. Millar, "How Information Gives You Competitive Advantage," Harvard Business Review, 63 (4), 1985, pp. 149-160.

[191] Prairie, P., "Benchmarking IT Strategic Alignment," in J. N. Luftman (Editor), Competing in the Information Age: Strategic Alignment in Practice. New York: Oxford University Press, 1996, pp. 242-290.

[192] Prahalad, C. K., and G. Hamel, "The Core Competence of the Corporation," Harvard Business Review, 68 (3), 1990, pp. 79-91.

[193] Preston, D., Karahanna, E., "How to Develop a Shared Vision: The Key to IS Strategic Alignment," MIS Quarterly Executive 8(1), March 2009.

[194] Price Waterhouse, Information Technology Review 1995/96.

[195] Pybum, P. J., "Linking the MIS Plan with Corporate Strategy: An Exploratory Study," MISQuarterly, 7 (2), 1983, pp. 1-14.

[196] Radcliff, D., "Aligning Marriott," Computerworld, April 10, 2000, pp. 58-60.

[197] Ray, G., Barney, J., & Muhanna, W. A., Capabilities, business processes, and competitive advantage: Choosing the dependent variable in empirical tests of the resource-based view. Strategic Management Journal, 25(1), 2004, pp. 23-37.

[198]   Raymond, L., & Bergeron, F., Enabling the business strategy of SMEs through e-business capabilities: A strategic alignment perspective. Industrial Management and Data Systems, 108(5), 2008, pp. 577-595.

[199]   Reich, B. Homer, and I. Benbasat, "Measuring the Linkage Between Business and Information Technology Objectives," MIS Quarterly, 20 (1), 1996, pp. 55-81.

[200]   Reich, B. Homer and I. Benbasat, "Factors that Influence the Social Dimension of Alignment between Business and Information Technology Objectives," MIS Quarterly, 24 (1), 2000, pp. 81-113

[201]   Reinhardt, A., "The New Intel," Business Week, Number 3672, March 13, 2000, pp. 110-124.

[202]   Roach, S. S., "Services under Siege: The Restructuring Imperative," Harvard Business Review, 69 (5), 1991, pp. 82-91.

[203]   Roepke, R., Agarwal, R., & Ferratt, T. W., Aligning the IT human resource with a business vision: The leadership initiative at 3M. MIS Quarterly, 24(2), 2000, pp. 327-353.

[204]   Sabherwal, R., Chan, Y.: Alignment between Business and IT Strategies. Information Systems Research 12(1), 11–33 (2001)

[205]   Sabherwal, R., Hirschheim, R., & Goles, T., The dynamics of alignment: Insights from a punctuated equilibrium model. Organization Science, 12(2), 2001, pp. 179-197.

[206]   Sabharwal R. and P. Kirs, "The Alignment between Organizational Critical Success Factors and Information Technology Capability in Academic Institutions," Decision Sciences, 25 (2), 1994, pp. 301-330.

[207]   Sambamurthy, V., Business strategy in hyper-competitive environments: Rethinking the logic of IT differentiation. In R. Zmud (Ed.), Framing the domains of IT management: Projecting the future through the past (pp. 245-261). Cincinnati, OH: Pinnaflex, 2000.

[208]   Sambamurthy, V., Bharadwaj, A., & Grover, V., Shaping agility through digital options: Reconceptualizing the role of information technology in contemporary firms. MIS Quarterly, 27(2), 2003, pp. 237-263.

[209]   Santana, R.G., Daneva, M., van Eck, P.A.T., Wieringa, R.J.: Towards a business-IT alignment maturity model for collaborative networked organizations. In: Proceedings of the International Workshop on Enterprise Interoperability Munich, Germany, pp. 70–81 (2008)

[210]   Schendel, D. E., and C. W. Hofer, Strategic Management: A New View of Business Policy and Planning. Boston, MA: Little, Brown, 1979.

[211]   Schoonhoven, C., "Problems with Contingency Theory: Testing Assumptions Hidden within the Language of Contingency 'Theory,'" Administrative Science Quarterly, 26 (3), 1981, pp. 349-377.

[212]   Scott, G.M.: Still not solved: the persistent problem of IT strategic planning. Communications of the Association for Information Systems 16, 904–936 (2005)

[213]   Scott-Morton, M. S., The Corporation of the 1990s. New York, NY: Oxford University Press, 1991.

[214]   Segars, A. and V. Grover, "Re-examining Perceived Ease of Use and Usefulness: A Confirmatory Factor Analysis," MIS Quarterly, 17(4), 1993, pp. 517-525.

[215]   Sethi, V. and S. Carraher, "Developing Measures for Assessing the Organizational Impact of Information Technology: A Comment on Mahmood and Soon's Paper," Decisions Sciences, 24 (4), 1993, pp. 867-877.

[216]   Sethi, V. and W. R. King, "Development of Measures to Assess the Extent to Which an Information Technology Application Provides Competitive Advantage," Management Science, 40(12), 1994, pp. 1601-1627.

[217]   Seybold, P. B. and R. T. Marshak, Customers.com: How to Create a Profitable Business Strategy for the Internet and Beyond. New York, NY: Random House, 1998.

[218]   Silvius, G.A.J., "Business and IT alignment in theory and practice." In: Proceedings of the 40th Hawaii International Conference on Systems Sciences, Hawaii (2007)

[219]   Snow, C. C., and D. C. Hambrick, "Measuring Organizational Strategies: Some Theoretical and Methodological Problems," Academy of Management Review, 5 (4), 1980, pp. 527-538.

[220]   Spewak, S.: Enterprise Architecture Planning: Developing a Blueprint for Data, Applications, and Technology. Wiley, Chichester (1993)

[221]   Spiro, L N., "Merrill's E-Battle," Business Week, 3655, November 15, 1999, pp. 256-268.

[222]   Srinivasan, K., S. Kekre and T. Mukhopadhyay, "Impacts of Electronic Data Interchange Technology on JIT Shipments," Management Science, 40 (10), 1994, pp. 1291-1304.

[223]   Stabell, C., & Fjeldstad, Ø, Configuring value for competitive advantage: On chains, shops and networks. Strategic Management Journal, 19(5), 1998, pp. 413-437.

[224]   Strassmann, P. A., The Business Value of Computers. New Canaan, CT: Information Economics Press, 1990.

[225]   Strassmann, P. A., The Squandered Computer. New Canaan, CT: Information Economics Press, 1997.

[226]   Straub, D. W., "Validating Instruments in MIS Research," M IS Quarterly, 13 (2), 1989, pp. 147-169.

[227]   Tallon, P., K. L. Kraemer, V. Gurbaxani and J. G. Mooney, "A Multidimensional Assessment of the Contribution of Information Technology to Firm Performance," in Proceedings of the 5th European Conference on Information Systems, Cork, Ireland, 1997, pp. 846-867.

[228]   Tallon, P., K. L. Kraemer and V. Gurbaxani, "The Development and Application of a Value-based Thermometer of IT Business Value," Working Paper, CRITO, Graduate School of Management, University of California, Irvine, 1997.

[229]   Tallon, P., K. L. Kraemer and V. Gurbaxani, "Fact or Fiction: The Reality Behind Executives' Perceptions of IT Business Value," Working Paper, CRITO, Graduate School of Management, University of California, Irvine, 1998.

[230]   Tallon, P., K. L. Kraemer and V. Gurbaxani, "Executives' Perceptions of the Contribution of Information Technology to Firm Performance: A Process-oriented Approach," Journal of Management Information Systems, 16(4), 2000, pp. 137-165.

[231] Tallon, P., K. L. Kraemer and V. Gurbaxani, "A Process-Oriented Perspective on the Alignment of Information Technology and Business Strategy," Journal of Management Information Systems, 24 (3), 2007-8, pp. 227-268.

[232] Tallon, P., "Value Chain Linkages and the Spillover Effects of Strategic Information Technology Alignment: A Process-Level View," Journal of Management Information Systems, 28(3), 2011-12, pp. 9-44.

[233] Tallon, P., Queiroz, M., Coltman, T., Sharma, R., "Strategic IT Alignment: Twenty-Five years on," Journal of Information Technology, 10 (1), 2015.

[234] Tallon, P., Queiroz, M., Coltman, T., Sharma, R., "Business Process and Information Technology Alignment: Construct Conceptualization, Empirical Illustration, and Directions for Future Research," Journal of the Association for Information Systems, 17 (9), 2016, pp. 563-589.

[235] Venkatraman, N., "Strategic Orientation of Business Enterprises: The Construct and its Measurement," Unpublished Ph.D. Dissertation, University of Pittsburgh, PA, 1985.

[236] Venkatraman, N., "Strategic Orientation of Business Enterprises: The Construct, Dimensionality, and Measurement," Management Science, 35 (8), 1989a, pp. 942-962.

[237] Venkatraman, N., "The Concept of Fit in Strategy Research: Toward Verbal and Statistical Correspondence," Academy of Management Review, 14(3), 1989b, pp. 423-444.

[238] Venkatraman, N., "Performance Implications of Strategic Co-alignment: A Methodological Perspective," Journal of Management Studies, 27 (1), 1990, pp. 19-41.

[239] Venkatraman, N. and Prescott, J. E., "Environment-Strategy Coalignment: An Empirical Test of its Performance Implications," Strategic Management Journal, 11 (1), 1990, pp. 1-23.

[240] Venkatraman, N. and V. Ramanujam. "Measurement of Business Economic Performance: An examination of Method Convergence," Journal of Management, 13(1), 1987, pp. 109-122.

[241] Venkatraman, N., J. C. Henderson and S. H. Oldach, "Continuous Strategic Alignment: Exploiting IT Capabilities for Competitive Success," European Management Journal, 11 (2), 1993, pp. 139-149.

[242] Vernadat, F.: Enterprise Modeling and Integration. In: Principles and applications. Chapman & Hall, Boca Raton (1996)

[243] Versteeg, G., Bouwman, H.: Business architecture: A new paradigm to relate the business strategy to ICT. Inf. Syst. Front 8, 91–102 (2006)

[244] Wagner, Heinz-Theo., Weitzel, T., "How to Achieve Operational Business-IT Alignment: Insights from a Global Aerospace Firm," MIS Quarterly Executive, 11(1), March 2012.

[245] Wang, X., Zhou, X., Jiang, L.: A method of business and IT alignment based on enterprise architecture (2008)

[246] Watson, R. T., "Influences on the IS Manager's Perceptions of Key Issues: Information Scanning and the Relationship with the CEO," MIS Quarterly, 14 (2), 1990, pp. 217-231.

[247] Wegmann, A., Balabko, P., Le, L., Reveg, G., Rychkova, I.: A Method and Tool for Business-IT Alignment. In: Enterprise Architecture Proceedings of the case, Porto Univ., Porto, Portugal (2005)

[248] Weber felt, B., "A Resource-based View of the Firm," Strategic Management Journal, 5 (2), 1984, pp. 171-180.

[249] White, R. E., Generic business strategies, organizational context, and performance: An empirical investigation. Strategic Management Journal, 7(3), 1986, pp. 217-231.

[250] Wilson, D., "Assessing the Impact of Information Technology on Organizational Performance"; R. D. Banker, R. J. Kauffman, and M. A. Mahmood (Editors), Strategic Information Technology Management: Perspectives on Organizational Growth and Competitive Advantage. Harrisburg, PA: Idea Group Publishing, 1993.

[251] Wilson, D., "The Relationship Between IS Strategic Planning and Enterprise Architectural Practice," pp. 100–107 (2004)

[252] Wu, Shelly Ping-Ju, Straub, D.W., Liang, T., "How Information Technology Governance mechanisms and Strategic Alignment Influence Organizational Performance: Insights from a Matched Survey of Business and IT Managers," MIS Quarterly, 39 (2), 2015, pp. 497-518.

[253] Yetton, P. W., J. F. Craig and K. D. Johnston, "Fit, Simplicity, and Risk: Multiple Paths to Strategic IT Change," in J. I. DeGross, G. Ariav, C. Beath. R. Hoyer and C. Kemerer (Editors), Proceedings of the Sixteenth International Conference on Information System, Amsterdam, The Netherlands, 1995, pp. 1-11.