

Enabling IT/Business Strategic Alignment: (An Empirical Study on the Telecommunications Sector in Jordan)

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ABSTRACT

This study investigates the relationship between the six main enablers of IT/Business strategic alignment on the one hand (senior executive support for IT, IT involvement in strategy development, IT understanding of the business, Business/IT partnership, well-prioritized IT projects, IT demonstrated leadership) and IT/Business strategic alignment enablement on the other hand. A suggested model was developed based on Luftman and his colleagues six IT/Business strategic alignment enablers model. The main hypothesis and other six sub hypotheses were derived to investigate the supposed relationship.

An organization-wide assessment was adopted in this study to provide a macro objective view of the current IT/Business strategic alignment enablers within the researched companies. Therefore; a structured quantitative survey in the form of a questionnaire was developed and delivered to companies' members from all managerial levels within mobile and fixed telecommunications organizations in Jordan. Based on the perceptions of respondents, the six IT/Business enablers were explored throughout the study. The results of the study indicated that there is a significant relationship at (5) percent level between each of the independent variables (senior executive support for IT, IT involvement in strategy development, IT understanding of the business, Business/IT partnership, well-prioritized IT projects, IT demonstrated leadership) and the dependent variable (IT/Business strategic alignment enablement).

Based on the results of this study, a set of recommendations were proposed. Some of them are:

- Senior management should be concerned with supplementing IT department with highly qualified human resources and financial resources.
- Forming a team of senior decision makers from the corporate IT and business unit is recommended to be the dominant style in strategy development. Cross-functional coordination and joint task force are also recommended to enhance partnership efforts.
- To enhance their leadership skills, IT leaders should be encouraged to attend training sessions regarding leadership skills.

Keywords: IT/Business strategic alignment, Business/IT partnership.

INTRODUCTION

There is worldwide evidence that IT has the power to transform the whole industries and markets (Earl, 1983 and 1993; Robson, 1994; King, 1995; Papp, 1995; Luftman, Papp 2002 and others). Strategic planning is also critical to the continued success of any organization.

Executives who responded to an online survey conducted by The McKinsey Quarterly¹ (September 2007) raise significant concerns about the way their company executes the strategy, communicates it, aligns the organization with it and measures performance against it. Therefore, in recent years, organizations are increasingly paying attention to the concept of IT/Business strategic alignment process in order to increase their competitive advantage (Nugent, 2004).

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Strategic alignment process acquires the first rank over the other organizational issues in the current dynamic business and continuous evolving technologies environment (Adenfelt; Lagerstro, 2006; Weiss and Thorogood 2006; Voelpel et al., 2005; Senn 2004; Luftman 2004). So, among the most important tasks that leaders should enable in contemporary organizations is IT/Business strategic alignment. Thus, strategic management field is currently developing new mechanisms and means for guiding corporations in their efforts to ride the waves of the so-called global knowledge economy (Adenfelt and Lagerstrom, 2006). The basic focus of strategic management today is how to ensure that the different parts of the organization are pulling together in the same strategic direction (Luftman, Papp, and Brier 2002, Luftman, 2004). In order to fulfill this crucial task, many serious efforts are required. Among the key contributions within this field was the one presented by Luftman and his colleagues (2002). Based on the results of a conducted scientific study, they ranked six main enablers due to their importance to IT/Business strategic alignment as follows: senior executive support for IT, IT involvement in strategy development, IT understanding of the business, Business/IT partnership, well-prioritized IT projects, and IT demonstrated leadership. Building on these enablers, this study was established.

Research Problem and Questions of the study

Strategic alignment has emerged as one of the most important issues facing business and IT executives all over the world (Weiss and Thorogood, 2006; Broadbent and Kitzis, 2005; Sean, 2004). Luftman (2003) has visualized the alignment problem by comparing the difficulty of aligning IT and business with drawing a line in the sand of Sahara dunes. Ciborra portrays this complexity in a way similar to building a bridge between two constantly moving shores; technology on the one side and business on the other one. The results of a conducted study declared that, although a striking acknowledgment by 96% of IT executives regarding the importance of alignment, efforts to achieve it have been

largely unproductive (Sean, 2004). In addition, Leganza (2003) stated that, lack of alignment is typically blamed on IT, while in fact IT management might not be responsible for falling short of alignment because there are conditions out of IT's control which make alignment process a difficult one. Discussion of the obstacles in the context of IT does not yield a true contribution since the consequences affect every area of the organization, and prevent the true alignment of business and IT agendas to occur. This leads us to call for adopting a systemic view in order to enable the true alignment and to eliminate the negative impacts on performance.

The industry of mobile and fixed telecommunications in Jordan is a rich new modern industry that probably adopts such new concepts in modern organizations. So, this study aims specifically at answering the following main research question:

Which factors can enable IT/Business strategic alignment in mobile and fixed telecommunications companies in Jordan? Therefore; the relationship between IT/Business strategic alignment and the six main enablers forms actually the backbone of this research.

The Objectives of the Study

Basically, the lack of academic research in Jordan to support whether or not a relationship between the six main enablers and IT/Business strategic alignment enablement exists motivate the researchers to investigate this subject. Therefore, this study attempts to provide some viewpoints, and empirical results to understand this relationship. Following are the main objectives of this study:

1. Investigating the current six main enablers of IT/Business strategic alignment enablement within the researched companies.
2. Identifying the role of the six main enablers in the enablement of IT/Business strategic alignment.
3. Developing a model for enabling IT/Business strategic alignment process.

The Significance of the Study

The desire to study this subject stems from the crucial need to enhance IT/Business strategic alignment

enablement process. Another complementary motivation for this study is to fulfill the current need for more practical diagnostics methods (Broadbent and Kitzis, 2005) to assist technology leaders and business managers to define and enable strategic alignment processes especially within the targeted fixed and mobile telecommunications companies in Jordan. The results of this study and the developed questionnaire of this study are beneficial related to the investigated field.

Another contribution the researchers hope to present relates to the reality of individuals' and teams' planning and performing alignment on an ad-hoc basis sometimes (Broadbent and Kitzis, 2005; Ross, 2003) which leads to insufficient enabling alignment. Therefore; the researchers argue that, efforts should be devoted to enable strategic alignment process as a permanent manner, and not as an ad hoc manner.

The researchers also hope to provide a theoretical contribution to strategic alignment field.

Theoretical Background

The importance of IT has been documented since the late 1970's (McLean and Soden, 1977; IBM, 1981; and others). Alignment's importance continues today as companies strive to link technology and business (Papp, 2001; Luftman, 1996). As alignment addresses both of doing the right things (effectiveness), and doing things right (efficiency) (Deloitte, 2004), it becomes among the top five management concerns of chief information officers (CIOs) and other executives (Weiss, 2006). Therefore; establishing harmony among IT and business strategies is a key objective of the firm (Luftman et al., 2004).

According to Henderson and Venkatraman (1993), the inability to realize from IT investments is, in part, due to the lack of alignment between the business and the IT strategies of organizations. A widely accepted definition of strategic alignment presented by Reich and Benbasat (2000) is "the degree to which the information technology mission, objectives, and plans are supported by the business mission, objectives, and plans". The alignment between business strategy and IS/IT strategy

is recognized as a necessary prerequisite for companies to realize benefits from their IS/IT investments (Eugene, 2007). At the highest level, it means that IT organizations are working closely with the various lines of business to understand their performance objectives and priorities, and then ensuring that their own resources, operations, and performance metrics are in harmony with the strategic objectives of the company and its assorted business units (Packeteer, 2004).

The history of strategic alignment frameworks is still young (Ekstedt et al., 2005). Some suggested strategic alignment frameworks were presented. The most widespread and accepted one was proposed by Henderson and Venkatraman in 1993 which is also known as the strategic alignment model (SAM). In their framework, Henderson and Venkatraman proposed that, the strategic alignment process is based on two main dimensions. The first dimension is strategic fit which differentiates between external focus, directed towards the business environment, and internal focus, directed towards administrative structures. The other dimension of functional integration separates business and IT. Altogether, the model defines four domains that have to be harmonized in order to achieve alignment (Henderson and Venkatraman, 1993).

Later models and consulting practices in alignment almost start from this original model. For example, Luftman et al. (1996) refined the model by elaborating on the critical management issues inside the domains. In the model, the external strategy dimension is dealing with (Ekstedt et al., 2005; Luftman, 2003; Luftman, 2000):

1. Scope, defining the choice for (a) certain market segment(s),
2. Core competencies that contribute to the chosen strategy,
3. Governance, the selection and the use of inter-organisational relationships to obtain certain competencies;

On the other hand, the internal dimension is concerned with issues regarding:

1. Work processes needed for operations,
2. The acquisition, training and development of skills

required to manage and operate the processes,

3. An "administrative" business infrastructure / IT architecture.

Another framework was presented by Weiss and Thorogood (2006). They view strategic alignment as a "strategic weapon" which requires many integrated requirements as follows within today's economy (Weiss and Thorogood, 2006):

1. Direct link to external market and firm performance objectives.

2. Transformative internal integration of resources.

3. Involve the entire enterprise and require therefore a systems perspective for defining change.

4. Leaders who understand emerging and existing technologies and stages of organizational and architecture maturity from specific applications to modular networks.

5. Leaders with strategic business and technology knowledge and creativity to define a vision for the alignment.

6. Managerial as well as leadership skills for those who direct these re-alignments.

Only few studies propose to operationalize the strategic alignment concept (Kefi and Michel, 2005). From such theoretical foundations, assessment models are being developed with the purpose to indicate a value of alignment. Results of a multi-year study of strategic alignment were presented and analyzed based on the obtained data from business and information technology executives from over 500 firms representing 15 industries. Among the many interesting results dealing with achieving alignment is that; it is evolutionary and dynamic process (Ekstedt et al., 2005). It requires strong support from senior management, good working relationships, strong leadership, appropriate prioritization, trust and effective communication, as well as a thorough understanding of business environment (Luftman et al., 2002).

According to Luftman and his colleagues (2002), achieving alignment demands focusing on maximizing the enablers and minimizing the inhibitors. So, enablers are the factors that promote and encourage the alignment

of IT and business (Luftman et al., 2002). These results were presented and analyzed based on the obtained data from a five-year span study of strategic alignment on business and information technology executives from over 800 US firms representing 15 industries. Analysis of the survey data revealed that the six most important enablers, in rank order that remained relatively consistent are (Luftman et al., 2004):

1) Senior executive support for IT

2) IT involvement in strategy development

3) IT understanding business

4) Business-IT partnership

5) Well-prioritized IT projects

6) IT demonstrated leadership

So, based on what was mentioned above, IT/Business strategic alignment should be seen as a critical issue within the organization. Serious efforts should be devoted toward enabling this process.

Overview model of the research

According to Luftman et al. (2002), achieving alignment demands focusing on maximizing the enablers and minimizing the inhibitors. They defined enablers as "the factors that promote and encourage the alignment of IT and business" (Luftman et al., 2002). Based on these conclusions, IT/Business strategic alignment enablement denotes to the concern of providing and supporting the six main enablers - that were identified by Luftman et al. (2002)- as perceived by the respondents in the researched organizations. This means that, the researchers explore the current state of these enablers or factors in the researched organizations. Therefore, IT/Business strategic alignment enablement is supposed to be a function of the six main enablers of IT/Business strategic alignment.

Based on the reviewed related studies and literature a suggested of model of this study was built as shown in the following figure. So, in this study, IT/Business strategic alignment enablement is the dependent variable on the one hand and each of the enablers is an independent variable.

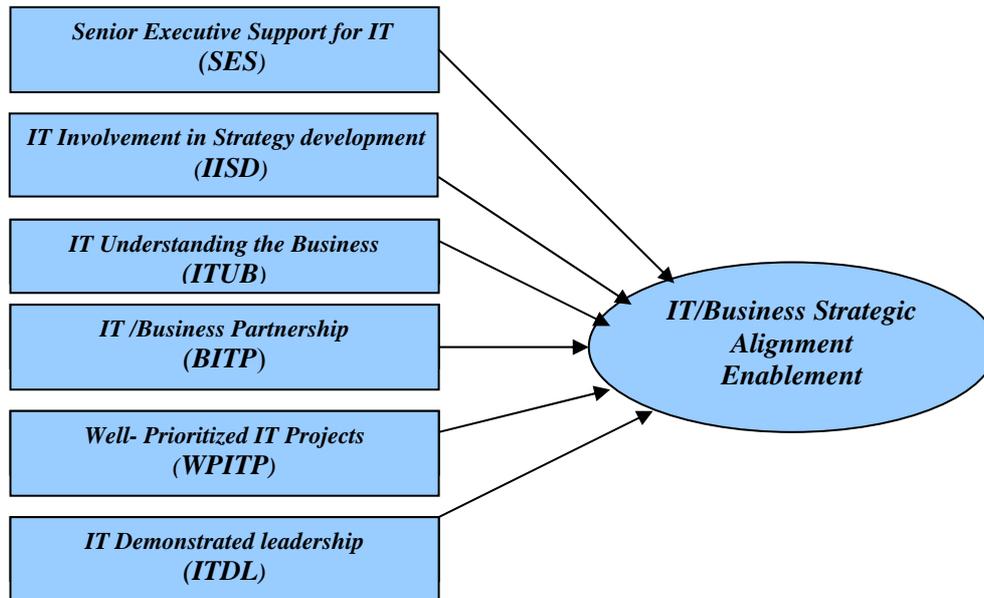


Figure (2): Hypothesised model of IT/Business strategic alignment enablement (ITBAE)

Following is a brief review of the six main enablers' operational definitions. The questionnaire items that were used to measure each construct can be reviewed in the tables in the appendix section of this study.

- **Senior executive support for IT (SES):** denotes to the senior executive financial, morale support and/ or encouragement and facilitation of the IT staff interactions with the different administrative levels (Luftman et al., 2002).

- **IT involvement in strategy development (IISD):** denotes to the active involvement of the IT staff in the development of IT vision and strategy. Forming a team (Mdlungu, 2005; Vasquez, 2004) of senior decision makers from the IT department and the other business units is the dominant style of this involvement (Luftman et al., 2002). This also includes that CIO understands the business strategy and knows how to connect (Riel et al., 2005) IT strategy with business strategy (Hildreth, 2005) which enables her/him as a consequence to manage the new enterprise and IT risks (Luftman et al., 2002; Luftman et al., 2004; Luftman, 2000).

- **IT understanding of the business (ITUB):** explores to what extent IT staff understands the firm's

internal and external-business environment, or can communicate IS performance in a business-relative language (Renner et al., 2003; Venkatraman 1993), or to what level IT staff understands financial vocabularies. On the other hand, this study will also explore whether the business staff understands IT main vocabularies that are closely related to mutual planning and strategic alignment language which leads to the mutual understanding between the both (Deloitte, 2004; Luftman et al., 2002).

- **Business - IT partnership (BITP):** denotes to what extent each of the business staff and IT staff perceives the nature and the importance of the roles of each other (Jouirou and Kalika, 2004; Deloitte, 2004) in achieving the organizational goals (Ross et al., 1995). In addition, the study extends to explore the actions that the researched organizations often took to create effective partnerships (Henderson, 1990). For example; whether they held training courses (Rockart et al., 1996) in those areas where tasks are interrelated or dependent on each other, or whether they measured and perceived the achieved benefits resulted from the intended partnership (Luftman et al., 2004; Luftman et al., 2002).

• **Well-prioritized IT projects (WPITO):** denoted to the priority level that IT has within the researched companies (Luftman et al., 2002). This may include exploring whether the researched companies have a vision for how IT will benefit the organization, or whether they adopt new technologies before their competitors (Luftman et al., 2002, or whether they allocate a big portion of their expenditures to IT needs and projects (Jaime and Kevin, 2006; Luftman et al., 2002).

• **IT demonstrates leadership (ITDL):** this enabler denotes to the active role that CIO plays in developing IT strategy (Weiss and Thorogood, 2006; Cook 1999), and in improving the alignment between IT and business functions as it is perceived by the respondents. Specific indicators for this enabler such as the CIO position in the organizational chart (Polansky, 2001) and in the internal management board within the researched companies will be explored (Luftman et al., 2002).

In the following sub-section, the research hypotheses will be extracted. Therefore, this requires the researchers to shed some light on the main studies to smoothen the way to elicit these hypotheses.

Research Hypotheses

The researchers reviewed many previous studies related to the six main enablers of IT/Business strategic alignment. Following are some of the main studies that enabled the researchers to elicit the main hypothesis and its sub hypotheses.

Some researchers assured that **senior executive support** is key to alignment success (Hein, 2004). Hildreth (2007) found that misalignment grows if there is a lack of executive support.

Rockart et al. (1996) indicated that direct **CIO involvement in business strategic management** can enhance strategic alignment between IT and business functions. Luftman et al. (1999) also recognized that achieving alignment is expected to become easier when cross-functional teams are used in strategy development. Others reached similar results (Authenticity, 2007; Mdlungu, 2005; Vasquez, 2004).

Vital efforts were also devoted to study the impact of

IT understanding of the business on the IT/Business strategic alignment. For example, Nizker (2007) assured that this understanding should extend to understand the corporate future to strengthen IT/Business relationship. Others found that IT needs to understand both of the firm's internal business environment and external environment including its customers and competitors (Luftman et al., 2004). Hildreth (2005) assumed that the ability to prove the case and get the needed funding increases if IT understands business.

The importance of **Business/ IT partnership** to IT/Business strategic alignment was also recognized. Pioneer Luftman and his colleagues' study (1999) assured that partnership is among the six main enablers of IT/Business strategic alignment. Henderson (1990) mentioned that partnership affects the decision making ability of the partners. Rockart et al., (1996) also concentrated that alignment is only achieved through executive teaming and agreement on the role of IT and the role of the CIO.

The results that Luftman et al., (2002) reached stressed the relationship between **well prioritized IT projects** and IT/Business strategic alignment. Others found that high business value of IT indicated a high strategic alignment (Tallon et al., 2000). In another study, Luftman (2005) suggested that internet service providers should prioritize technology acquisitions and build appropriate infrastructures.

Luftman's and his colleagues study (2002) reached a conclusion that **IT leadership** is a crucial enabler of IT/Business strategic alignment enablement. Others mentioned that leadership is a critical requirement for the position of Chief Information Officer (Weiss and Thorogood, 2006; Polansky, 2001). Alkhaldi and Al-Faouri (2007) recommended that CIO leaders should acquire technical and behavioral skills in order to enhance their strategic alignment ability.

Based on the previous literature review, the researchers extracted the main hypothesis and the sub-hypotheses as clarified below.

H1: There is a significant relationship between SES, IISD, ITUB, BITP, WPITP, ITDL and their

autonomous impacts on IT/Business strategic alignment enablement (ITBAE).

The sub hypotheses that can be derived from the previous hypothesis are:

H1a: There is a significant relationship between senior executive support for IT (SES) and IT/Business strategic alignment enablement (ITBAE).

H1b: There is a significant relationship between IT Involvement in Strategy development (IISD) and IT/Business strategic alignment enablement (ITBAE).

H1c: There is a significant relationship between IT Understanding the Business (ITUB) and IT/Business strategic alignment enablement (ITBAE).

H1d: There is a significant relationship between IT/Business Partnership (BITP) and IT/Business strategic alignment enablement (ITBAE).

H1e: There is a significant relationship between Well- Prioritized IT Projects (WPITP) and IT/Business strategic alignment enablement (ITBAE).

H1f: There is a significant relationship between IT Demonstrated leadership (ITDL) and IT/Business strategic alignment enablement (ITBAE).

Research methodology

Research instrument:

A questionnaire survey was developed based on the proposed research model, and on extensive literature review. A 5-point likert scale was used to increase distinction between different levels.

To test the questionnaire for clarity, evaluation and coherence, a macro review covers all the research constructs was accurately performed by five academic reviewers - from four Jordanian universities- specialized in management information systems, organizational behaviour and strategic management. Some items were

added based on their valuable recommendations. Some other items were reformulated to become more accurate to enrich the research instrument. The survey instrument was also validated through a pilot test with a sample of 30 participants who were not included in the sample frame for the subsequent data collection. The aim was to minimize the distorted and irrelevant responses which helped reduce what Cooper and Schindler (1998) called, 'the instrument as an error source'. These provided insight into the formatting of items and indicated that acceptable levels of validity and reliability would be forthcoming. Tables in appendix section show the items that were used to measure the researched constructs.

8.2 The population of the study:

The segment of fixed and mobile telecommunications companies was the target population of this study. The choice of a single segment stems from the need to use a way to control for the differences between business strategies in each segment. Thus, a single segment can add to the understanding of a phenomenon and over-generalization is avoided (Yin, 1994). Moreover, telecommunications companies have a growing need for connectivity and the synergy of information. In addition, this segment is receiving much attention from the highest formal levels in Jordan to get the most possible benefits from it. The researchers hope that this study will contribute to the development of this segment. So, five fixed and mobile telecommunications companies were selected for the survey setting. These companies are: Jordan Telecom, Fast Link, Mobilecom, Express and Umniah.

The Sample:

A sample was selected for study because the population was too large to study in its entirety, and the researched companies put some restrictions regarding the allowed number of the questionnaires that was distributed.

In deductive methods, the debate is centred on sample size while in inductive research, the reliability issue depends more on data quality (Eisenhardt, 1989;

McAdam and Bailie, 2002). According to Cooper and Schindler (1998), "One false belief is that a sample must be large or it is not representative". Others assure that the emphasis should be on depth and quality rather than population size (Eisenhardt, 1989; McAdam and Bailie, 2002).

Consequently, stratified sample type was chosen in this research. The sample composition was planned to be compatible with the composition of the workforce in the researched companies. HR managers were informed of this plan. The sample was later chosen by the HR managers because the researchers were not allowed to contact potential respondents directly as the HR managers of the participating companies could not give out mailing lists. Within such circumstances, this strategy of sample composition was used by many researchers such as Jarvenpa and Staples (2000). Therefore, questionnaires were given to the HR managers who then distributed them to potential respondents. However, the HR managers assured the researchers that the respondents would be randomly chosen in a representative manner from all managerial levels; senior management, middle management, operational management and staff of the business and IT departments respectively and the questionnaire would be returned with anonymity. The collected questionnaires assured that the sample was composed reasonably. Ten percent of the collected questionnaires were from the top management, such as GM, Assistant GM and departmental managers/directors. Fifteen percent were collected from the middle management such as sub-departmental managers. Twenty percent from the operational management such as supervisors and another 55% were from the front-line employees.

Data collection strategy

An average of 120 survey forms was sent to each company. The total size of the research sample was 600. 225 questionnaires were returned within three months. All surveys were checked for the quality of completion and completeness. Seven surveys with relatively huge missing data and six other surveys containing

incompatible answers were excluded. The remaining 212 questionnaires were used in the statistical analysis. The response rate was 37.5% and was accepted for the research purposes (Sekaran, 2003).

Data analysis:

Based on the nature of the research subject and its objectives, selected statistical analysis methods were used. So, in this study the data were analyzed in two stages. First, a descriptive analysis using (SPSS11) package software was undertaken which enabled us to describe the respondents and analyze measurement scales. The factor analysis (Varimax method of orthogonal rotation) was also used to validate the scales and confirm the researched factors. Two criteria were applied in the data reduction process: significance of factor representations and significance of item loading. According to the first criteria, eigenvalues were examined in order to determine the number of factors largely responsible for variation in the data, only factors with an eigenvalue (or the total variance explained by the factor) greater than 1.00 were accepted. According to the second criteria, only those items with a loading of at least 0.50 on any of their associated factors were retained. Summated scale technique was utilized in order to merge several individual variables - loading significantly on a factor- into a single composite measure (Hair et al., 1998). Second, structural equation modelling software was then used to test the research model. CFA or measurement model in SEM was used to give the researchers a complete control over specification for the indicators for each construct. Furthermore, CFA, with the use of SEM, permits for statistical test of the goodness of fit for the anticipated confirmatory factor solution, therefore the researchers were able to simultaneously evaluate the propositions and the measurements for the model in question (Jarvenpa and Staples, 2000; Pedhazur, 1982).

Factor analysis and Reliability analysis Results:

Each of the research constructs was tested for reliability and validity using Cronbach's (minimum 0.70)

and factor analysis (minimum loading 0.50). Each factor has an eigenvalue greater than 1. As can be seen from table 1 and tables (5-10) factor analysis showed a one-factor solution of each of SES, IISD, ITUB, BITP, WPITP and ITDL constructs. The factor analysis showed clear discriminant validity since all items – representing each of the previous constructs- are loaded

on one factor. Table (1) demonstrates that all items had reliabilities of 0.70 or greater which indicate an acceptable reliability (Sekaran, 2003). Because multiple items were utilized to measure each construct a summed variable was derived for the items representing each construct to represent the intended variable.

Table (1): Factor analyses and Reliability analyses

Constructs*	No. of items	Total variance	Loadings	α-value
SES	5	63%	0.76 to 0.83	0.86
IISD	5	54%	0.70 to 0.79	0.79
ITUB	4	59%	0.75 to 0.79	0.77
BITP	3	61%	0.72 to 0.83	0.70
WPITP	4	62%	0.77 to 0.83	0.79
ITDL	3	67%	0.80 to 0.84	0.75

* Constructs loaded on one factor

Confirmatory factor analysis results for ITBAE (IT/Business Strategic Alignment Enablement) construct

ITBAE in this study represents a latent variable. A model for ITBAE was constructed and CFA was executed to test for the overall goodness of fit for

ITBAE construct. The results of SEM that can be reviewed in table (2) declared that for the absolute fit measure, chi-square test results are 6.15 for 6 degrees of freedom and are not significant at 0.05 significance level. So, the indices denote that the hypothesized model is acceptable and can be adopted for testing H1 hypothesis in this study.

Table (2): Goodness of fit for the structural equation model of ITBAE

	AFM		IFM		
	X ²	GFI	RMSEA	IFI	CFI
Hypothesized Model	(6.15) P=0.41	0.99	0.01	1.00	1.00

X², Chi-square; GFI, Goodness-of-fit index; RMSEA, Root-mean-square error of approximation; IFI, Incremental fit index; CFI, Comparative fit index

Figure (2) demonstrates that all coefficients are standardized and all were significant, ranging from 0.68 to 0.88. These all indicated that good discriminant and convergent validity was established for the ITBAE construct, unidimensionality was assured as GFI is greater than 0.90. Reliability of the internal consistency

for the ITBAE construct was calculated using the construct “composite” reliability measures construct. The result shows that reliability is equal to 0.90, which is an indication of a high and acceptable level of reliability. Figure (2) shows the SEM diagram for the accepted hypothesized model.

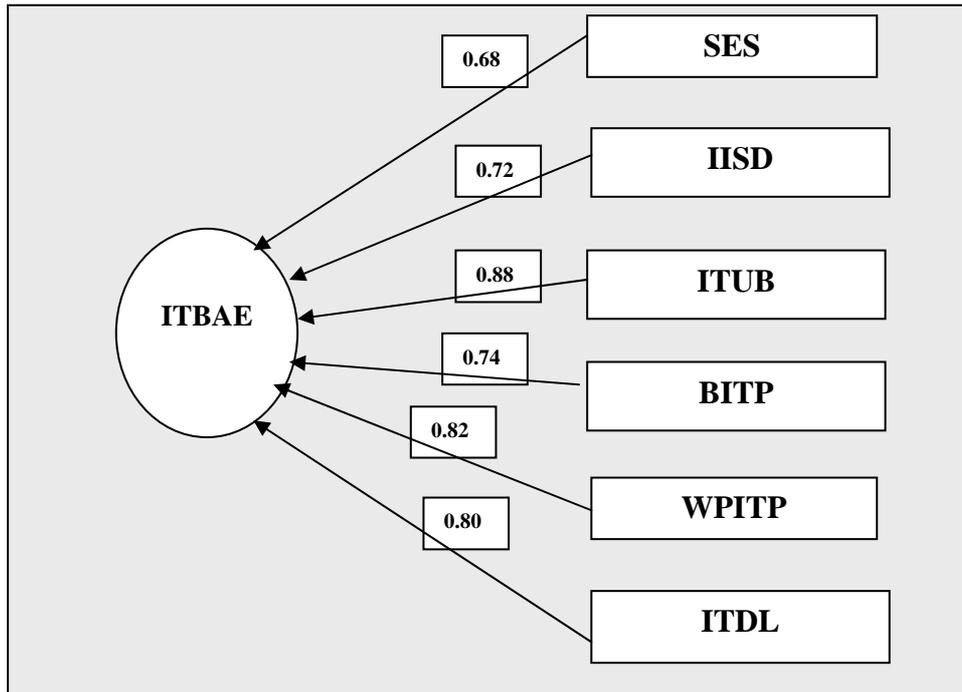


Figure (2): Hypothesised model of IT/Business strategic alignment enablement (ITBAE)

Sample Descriptive Analysis

As can be seen from table (3) most respondents (75.5%) have Bachelor’s degree. Most of the respondents' age ranged from Less than 30 to 40 years. In relation to managerial level, respondents were distributed on top, middle, lower and front- line

employees levels in the ratio 10:15:20:55. Over half of the respondents (56.6%) were males. In terms of work experience, most of the respondents have a short work experience which is consistent with the young age of the researched organizations.

Table (3): Respondents demographics

Level of Education	Frequency		Percent
	Secondary school or less	5	2.4
College	34	16	
Bachelors	160	75.5	
Higher education	13	6.1	
Total	212	100	
Age	Frequency		Percent
	more than 50	2	0.9
41-50	13	6.1	
31-40	66	31.1	
Less than 30	131	61.8	
Gender	Frequency		Percent
	Male	120	56.6

Level of Education	Frequency		Percent
	Secondary school or less	5	2.4
College	34	16	
Bachelors	160	75.5	
Higher education	13	6.1	
Total	212	100	
Female	92	43.4	
Total	212	100	

Managerial Level	Frequency		Percent
	Top Management	21	10
Middle Management	32	15	
Lower Level Management	42	20	
Front-Line Employees	117	55	
Total	212	100	

Experience	Frequency		Percent
	5 years or less	109	75.5
6-10 years	69	6.1	
11 or more	34	100	
Total	212	100	

Constructs Descriptive Analysis

The survey highlighted that the levels of the six main IT/Business strategic alignment enablers across the

surveyed organizations were good (ranging from 3.75 to 3.95 out of 5) levels as illustrated by figure (3).

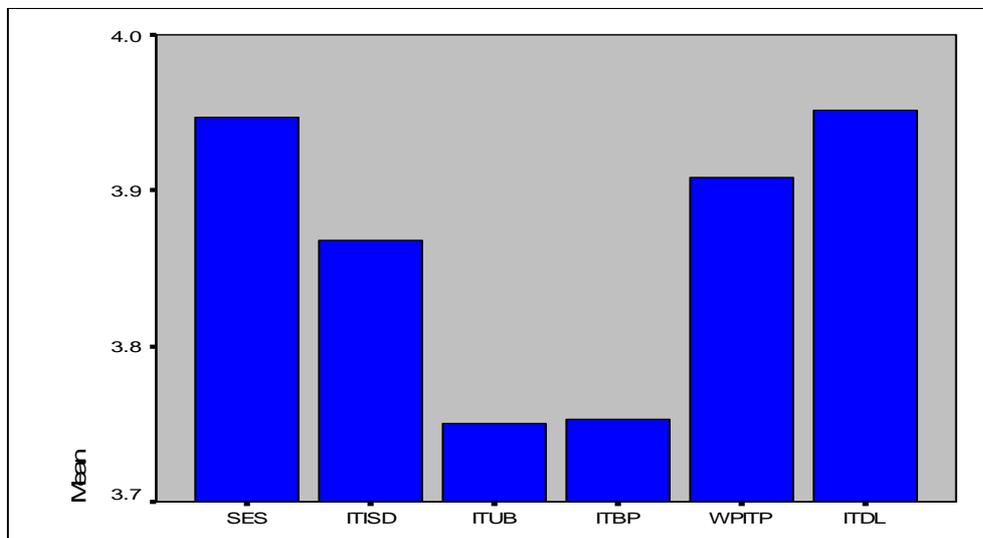


Figure (3): The six main IT/Business strategic alignment enablers in the researched organizations from the respondents' perspectives

Among the amazing results that can be seen from the previous figure is that, the latest enabler in Luftman and his colleagues model; the ITDL enabler, acquired the first rank in this study. This provides another crucial support for the need of this study. The results differentiated from the American society to Jordanian society. Other horrified results are relatively low levels of both of ITUB and ITBP which add another evidence for the need to continue studying the researched subject. The researchers suggest that the latter enablers can be considered as a lively translation of IT/Business alignment or even its heart.

Testing Hypotheses and Results Discussion

A macro analysis was designed to test the relationship between the independent constructs SES, IISD, ITUB, BITP, WPITP, ITDL and their impacts on the IT/Business strategic alignment enablement (ITBAE) construct. The proposed relationships between the independent constructs and the dependent construct were represented in the form of regression equations, as illustrated below.

H1a. SES and ITBAE: $ITBAE f(SES) \rightarrow ITBAE = \alpha SES + \varepsilon$

H1b. IISD and ITBAE: $ITBAE f(IISD) \rightarrow ITBAE = \alpha IISD + \varepsilon$

H1c. ITUB and ITBAE: $ITBAE f(ITUB) \rightarrow ITBAE = \alpha ITUB + \varepsilon$

H1d. BITP and ITBAE: $ITBAE f(BITP) \rightarrow ITBAE = \alpha BITP + \varepsilon$

H1e. WPITP and ITBAE: $ITBAE f(WPITP) \rightarrow ITBAE = \alpha WPITP + \varepsilon$

H1f. ITDL and ITBAE: $ITBAE f(ITDL) \rightarrow ITBAE = \alpha ITDL + \varepsilon$

The structural equations fit of the endogenous construct ITBAE and the other results show that:

- The lowest percent (46%) –but not little- of the total variance in ITBAE was accounted for SES as can be seen from the coefficient of determination R² of the regression path: $SES \rightarrow ITBAE$.

The analysis results also indicate that there is a positive significant ($\beta = 0.68, p < 0.05$) relationship

between senior executive support and IT/Business strategic alignment enablement. This result confirms the sub hypothesis (H1a). This means that the level of support – either financial or non financial- provided by the senior executive for IT impacts ITBAE. The survey results show that the provision of financial support within the researched companies came in the first rank, then supplementing IT department with high qualified human resources, whereas developing good work relationships with IT department had the lowest rank. In general, the level of support was ranging from very good to good which denotes that senior management should provide more support if a high level of alignment is needed.

The results of this study are similar to those of Luftman's and his colleagues (1999). In addition, others found that top management should provide sustained support to maintain KM initiatives success (Hariharan and Bharti Infotel Group, 2002). Other studies results assured that senior executive support is key to alignment success (Hein, 2004). The reached results of this study also coincide with Hildreth's (2005) who found that when there is a lack of executive support, misalignment grow, causing business managers to become dissatisfied with IT, and IT to be unhappy as a result of the lack of respect and involvement in strategy.

- A higher – but not the highest- percent (51%) of the total variance in ITBAE was accounted for IISD as can be seen from the coefficient of determination R² of the regression path: $IISD \rightarrow ITBAE$. The other results prove that a positive ($\beta = 0.72$) significant ($t\text{-value} = 12.25, p < 0.05$) relationship between IT involvement in strategy development and IT/Business strategic alignment enablement exists. This result confirms (H1b) sub hypothesis.

When testing H1b hypothesis the results proved that there is a positive relationship between IT involvement in strategy development and IT/Business strategic alignment enablement. Similar results were found by Rockart et al., (1996) who indicated that strategic alignment between IT and business functions can be achieved through direct CIO involvement in business strategic management. Also, Luftman and his colleagues (1999) recognized that it is

easier to achieve alignment when cross-functional teams including IT department create enterprise strategies. Other consistent results indicated the importance of equal involvement between business and IT at every stage of planning (2002). To activate this involvement, forming cross-functional teams of senior decision makers from the corporate IT and business unit was recommended to ensure that the project has all necessary resources, including people, money and time (Mdlungu, 2005; Vasquez, 2004) on the one hand and to sustain ongoing motivation and momentum for change on the other hand (Authenticity, 2007).

○ From the coefficient of determination R² of the regression path: ITUB → ITBAE, it can be seen that the highest percent (77%) of the total variance in ITBAE was accounted for ITUB. (H1c) sub hypothesis was confirmed as a positive (beta = 0.88) significant (t-value =10.15, p<0.05) relationship between IT understanding the business enabler and IT/Business strategic alignment enablement was found.

According to the results of this study, good level of ITUB enabler is found which, in turn, requires the researched organizations to devote special efforts to increase the management's understanding of the technical vocabularies that are used by IT department on the one hand. On the other hand similar efforts should also be devoted to enable IT staff to understand the basic nontechnology issues of the organization.

Prior to this study, Rockart et al. (1996) asserted that senior business managers must become knowledgeable about the current state of IT practice in order to understand IT-enabled business opportunities. Others concluded that, as a first step in determining how effectively business and IT functions are aligned, one should consider whether a common understanding between business and IT regarding the role and orientation of IT is found (Renner et al., 2003; Luftman et al., 2004). Hildreth (2005) and Riel et al. (2005) proved that if IT understands business, the ability to prove the case and communicate business value in a meaningful way increases, which in turn enhances the opportunity of getting the needed funding. A pioneer researcher recommends that rotating IT people in and out of the

business groups (Brown, 2007) may enhance ITUB. Nizker (2007) also confirmed that positive side effects of this understanding extend to understanding the future of the corporate and strengthening relationships with business.

○ The coefficient of determination R² of the regression path: BITP → ITBAE shows that 54% of the total variance in ITBAE was accounted for BITP. A strong positive (beta = 0.74) significant (t-value =10.08, p<0.05) relationship between business-IT partnership and IT/Business strategic alignment enablement was found. This result provides a clear confirmation to (H1d) sub hypothesis.

A good level of partnership was found in the researched organizations. Although both of IT and business perceive the roles and the importance of each other's role at a good level, no serious high levels of efforts were devoted to enhance this partnership between the both. Therefore, a special concern should be devoted to develop mechanisms to measure and to evaluate the resulted benefits of IT/Business partnership programs as this item appeared at the bottom of the related IT/Business partnership items.

In addition to Luftman's et al. study (1999), the positive relationship this study reached is similar to many other prior studies. For example, Henderson (1990) mentioned that partnership influences the ability of the partners over decision making. Others concluded that, IT executives must manage IT-business relationships well in order to deliver value to a firm (Ross et al., 1995). Rockart et al. (1996) mentioned that alignment is only achieved through executive teaming and agreement on the role of IT and the role of the CIO. This in turn stimulates others to living up with this agreement daily (Thejendra, 2007; Deloitte, 2004; Nash, 2000).

○ 67% of the total variance in ITBAE was accounted for WPITP as can be seen from the coefficient of determination R² of the ITBAE (regression path: WPITP → ITBAE).

The results indicate that there is a positive (beta = 0.82) significant (t-value =10.33, p<0.05) relationship between well-prioritized IT projects and IT/Business strategic alignment enablement. This result confirms

(H1e) sub-hypothesis. This in turn implies that, ITBAE is expected to be enhanced if the organization adopts new IT projects that are not available for its competitors, and if the organization's vision clarifies how IT will benefit the organization, or if it enhances its performance by utilizing IT.

This enabler has a good level within the researched organizations. At the top of the related items, the adoption of new IT projects before the competitor item falls. Other items follow with very little deviations.

Similar results were found in other previous studies such as Luftman's and his colleagues (1999) study. Tallon et al. (2000) also found that high business value of IT indicated a high strategic alignment. It has also been noted that alignment produced by strategically positioned IT improves the stature of IT within an organization (Segars and Glover, 1998; Keene, 1997). In another study Luftman (2005) suggested that internet service providers should prioritize technology acquisitions and build appropriate infrastructures.

- Relatively a lower – but not little - percent (64%) of the total variance in ITBAE was accounted for ITDL as can be inferred from the coefficient of determination R^2 of the regression path: ITDL \rightarrow ITBAE. The results indicate that there is a positive (beta = 0.80) significant (t -value =10.12, $p < 0.05$) relationship between IT demonstrated leadership and IT/Business strategic alignment enablement. This result confirms (H1f) sub hypothesis.

The results of the study proved this relationship which enables the researchers to conclude that if the researched organizations want to enable IT/Business strategic alignment they should enhance IT leadership role. This includes providing a high rank for CIO in

organizational structure and allowing her/him to influence the strategy development process. ITDL enabler also has a good level within the researched organizations which requires additional concern if IT/Business alignment is needed to be enabled.

When comparing these results with previous studies, many consistencies appear. Basically, Luftman's et al. study (1999) reached to a conclusion that ITDL is a crucial enabler of IT/Business strategic alignment enablement. Polansky (2001) mentioned that number one requirement for the position of Chief Information Officer is leadership. According to Weiss and Thorogood (2006), to direct re-alignments leaders are needed to define a vision for the alignment to possess managerial as well as leadership skills. CIO position in the organizational chart was also found correlated with achieving alignment (Luftman et al., 2004). Alkhalidi and Al-Faouri (2007) recommended that CIO leaders should acquire technical and behavioral skills in order to enhance their strategic alignment ability. So, today's CIO must provide effective strategies, deliver operations excellence, be a great negotiator and provide outstanding leadership (Morrow, 2007).

Reviewing the results of this study uncovered that significant and positive relationship between the six main enablers and IT/Business strategic alignment. This in turn allows the researchers to totally accept the main hypothesis of this study. Therefore, the researchers conclude that the more concern for each enabler is expected to lead to more IT/Business strategic alignment enablement. The Findings of the direct significant relationships and the related statistics of the previous main hypothesis and sub-hypotheses are presented in table 4.

Table (4): Summary of SCs (beta), t-value and R^2 of ITBAE and six IT/Business strategic alignment enablers

Regression Path	Standardised coefficient (beta)	t-value	R^2
Direct effect			
(ITBAE) = fSES	0.68*	N/A	0.46
(ITBAE) = fIISD	0.72*	12.25	0.51
(ITBAE) = fITUB	0.88*	10.15	0.77

Regression Path	Standardised coefficient (beta)	t-value	R ²
(ITBAE) = f BITP	0.74*	10.08	0.54
(ITBAE) = f WPITP	0.82*	10.33	0.67
(ITBAE) = f ITDL	0.80*	10.12	0.64

* Significant at 0.05 probability level

Limitations of the Study

The findings of this study should be interpreted in light of the research's limitations that are summarized below.

- It is readily acknowledged that what has been attempted here is only an exploration of the six main enablers of IT/Business strategic alignment within the researched companies to provide a better understanding of these enablers. The complexity of reality implies that the suggested model can be simple in parts and may require further research to make the conceptual explored ideas more advanced and validated.

- The results found significant associations in the research model. Of course, such findings ultimately need to be replicated across other settings and over time before they can be fully accepted. For example, this study was conducted on one setting and while fixed and mobile telecommunications companies are thought of as knowledge organizations and need strategic alignment, the generalizability from such companies setting to other industries may be questionable. So, the nature of the organization and the potential role of organization type must be investigated further using other organizations. Furthermore, the restricted sample size would also limit any claim to be representative of all companies.

- Other limitations that are common to the selected methodology-primarily self-report bias may also appear in this study. Actions were taken to reduce these difficulties as much as possible-e.g., respondents were not asked to give their name or any other identifying data.

Implications and Recommendations

The results of this study have implications for practice in IT/Business strategic alignment enablement.

The following general messages should be recognized by the members of the researched companies.

- IT/Business strategic alignment does not happen by chance, or by the actions of a small number of senior managers or IT people. It requires the participation of all managers in an organization involves everyone in the organization in all job roles. Therefore, enabling alignment efforts should be based on an organization-wide approach.

- The questionnaire of this study that was developed by the researchers can be utilized as a scanning instrument when analyzing the "as is" situation; the current status of ITBAE. This uncovers any gaps or deviations from the preferred level which also directs corrective errors to fill the found gaps and eliminate the unpreferred deviations.

- IT department should monitor emerging technologies and propagate their importance to the company.

- CIO should have a high rank in the organizational chart. IT leaders should also be encouraged to enhance their leadership skills. Attending training sessions regarding leadership skills may provide good results.

In addition to the previous general messages, other specific recommendations were derived based on the reached results as illustrated below:

- Senior management should be aware that financial support of IT is not adequate alone but morale (nonfinancial) support for IT department is also needed. So, senior management should be concerned with supplementing IT department with high qualified human resources.

- Forming a team of senior decision makers from the corporate IT and business unit is recommended to be

the dominant style in strategy development.

- As the study revealed that relatively a low level of concern was devoted to develop good work relationships with IT department, the researchers assure that the interaction between IT department and the other organizational departments should be encouraged and facilitated to develop good work relationships.

- Although both of IT and business perceive the roles and the importance of each other's role at a good level, no serious high levels of efforts were devoted to enhance this partnership between the both. Therefore, a special concern should be devoted to develop mechanisms to measure and to evaluate the resulted benefits of IT/Business partnership programs as this item appeared at the bottom of the related IT/Business partnership items. Partnership efforts should also be extended to encompass the factors that affect the day-to-day working relationships and the ability of the partners to influence over decision making. Cross-functional coordination and joint task force are recommended here.

- According to the results of this study, relatively a low level of ITUB enabler is found which in turn requires the researched organizations to devote special efforts to increase the management's understanding of the technical vocabularies that are used by IT department on the one hand. On the other hand similar efforts should also be devoted to enable IT staff to understand the basic nontechnology issues of the organization. This can be partially done by the use of cross-function job rotations and by attending mixed IT/Business staff training sessions and meetings.

Directions for Future Research

This research is one step in the complex process to understand IT/Business strategic alignment enablement. With respect to the outcome of the research, it is recommended for future research to concentrate on some issues that call for closer examination.

- Future research should examine qualitative and quantitative benefits of ITBAE. This may be of assistance in justifying the needed investments for these purposes.

- In a future research, it is preferred to assess an organization before implementing this study's model. It will be very desirable to monitor organizations which apply this model for some time to cumulate experiences from six to twelve months after the implementation of the model and then reassessment of the organization should be conducted to compare the results.

- In future studies, it is recommended to use triangulation research method to combine the advantages of quantitative and qualitative methods. Future research efforts such as in-depth case studies would be valuable to expand our current understanding of the searched subject and the role of the various constructs.

- A detailed analysis study should explore the interaction dynamics within the organizations. Specific issues such as trust and conflict should receive a high consideration. Such research is necessary for organizations to exploit the full potential of employee interactions to activate strategic alignment practices.

REFERENCES

Adenfelt, M., Lagerstro, K. 2006. Knowledge development and sharing in multinational corporations: The case of a centre of excellence and a transnational team. *International Business Review*. Elsevier Ltd. www.elsevier.com/locate/ibusrev. Date of access 26/July/2007.

Alkhaldi, F. and Al-Faoury, A. 2007. Organizational learning and strategic alignment process: a suggested

systemic view. Preceding of International Conference on Strategic Management Thinking, March, Al-ISRA University, Amman, Jordan.

Authenticity Consulting. How to make sure the board of directors participates in the project for change field guide to consulting and organizational development. <http://www.authenticityconsulting.com>. Date of access 26/July/2007.

- Broadbent, M. and Kitzis, E. 2005. *The new CIO leader: setting the agenda and delivering results*. Boston: Harvard Business School Press.
- Brown, B. 2007. CIOs share secrets of getting IT some respect. *CIO Magazine*. June 05: 3 pages.
- Ciborra, C. 1997. De profundis: deconstructing the concept of strategic alignment. *Scandinavian Journal of Information Systems*, 9 (1): 67-82.
- Cook, M., 1999. *Outsourcing Human Resources Functions*. New York: AMACOM.
- Cooper, D. and Schindler, P. 1998. *Business research methods*. Sixth edition. Singapore: Irwin/McGraw-Hill.
- Deloitte. 2004. Re: Align- Tackling Business and IT Alignment. CIO Advertising Supplement. *Deloitte Development LLC*. March 15.
- Eisenhardt, K. 1989. Building theories from case study research. *Academy of Management Review*, 14 (4): 532-550.
- Eugene, N. 2007. The basis for the IT strategic planning: questions to IT governance. *CIO Magazine*, (22 July): 22-43.
- Hair, J., Anderson, R., Tatham, R., and Black, W. 1998. *Multivariate Data Analysis*. (5th ed.), Prentice Hall, Englewood Cliffs, NJ.
- Hariharan, A. 2005. Knowledge management at Bharti Tele-Ventures – A case study. *Journal of Knowledge Management Practice*, 6 (June).
- Henderson, J. 1990. Plugging into strategic partnership: The critical IS connection. *Sloan Management Review*, (Spring): 7-18.
- Henderson, J. and Venkatraman, N. 1993. Strategic alignment: leveraging information technology for transforming organizations, *IBM Systems Journal*, 32 (1).
- Hildreth, S. 2005. *Finding the magic formula for IT/business alignment*. 02 Mar. SearchSMB.com. Date of access 24/January/2007.
- IBM. 1981. *Business systems planning, planning guide*, GE20-0527, White plains. NY: IBM Corporation.
- Improving strategic planning: A McKinsey Survey. 2007. *Web exclusive*, (September). www.mckinseyquarterly.com/links/23502. Date of access 6/November/2007.
- Jaime, M. and Kevin, A. 2006. Closing the alignment gap (it still exists!). *Optimize Magazine Business Management*, (19 May). <http://www.mgmtarticles.com/2006/05/19/closing-the-alignment-gap-it-still-exists/>. Date of access 4/July/2006.
- Jarvenpa, S. and Staples, D. 2000. The use of collaborative electronic media for information sharing: an exploratory study of determinants. *Journal of Strategic Information Systems*. 9 (2): 129-154.
- Jouirou, N. and Kalika, M. 2004. Strategic alignment: a performance tool. *Proceedings of the tenth Americas conference on information systems*. New York, August: 3693-3700.
- Keene, P. 1997. *The process edge*. Harvard Business School Press.
- Kefi, H. and Kalika, M. 2005. Survey of strategic alignment impacts on organizational performance in international European companies. *Proceedings of the 38th Hawaii International Conference on System Sciences*, 03-06 Jan: 230c - 230c.
- King, J. 1995. Re-engineering focus slips. *Computerworld*, (March 13), 6 pages.
- Leganza, P. 2003. Overcoming obstacles to the alignment of IT and the business. (June 24). Available at: www.forrester.com/Research/LegacyIT/Excerpt/0,7208,17675,00.html. Date of access 21/11/2006.
- Luftman, J. 1996. *Competing in the information age: strategic alignment in Practice*, Oxford University Press.
- Luftman, J. 2000. Assessing business – IT alignment maturity. *Communication of AIS*, 4 (14): 1-50.
- Luftman, J. 2003. Measure your business-IT alignment: the longstanding business-IT gap can be bridged with an assessment tool to rate your efforts. *Optimize Magazine*, (26): 9 pages. <http://www.optimizeimag.com/showArticle.jhtml?articleID=17701026>
- Luftman, J. 2005. Key issues for IT executives. *MIS Quarterly Executive*. 4 (2): 269-285.
- Luftman, J. and Brier, T. 1999. Achieving and Sustaining Business-IT Alignment. *California Management Review*, 42 (1): 109-122.
- Luftman, J., Bullen, C., Liao, D., Nash, E. and Neumann, C. 2004. *Managing the information technology*

- resources: Leadership in the Information Age.** Pearson Education, Inc.
- Luftman, J., Lewis, P. and Oldach, S. 1993. Transforming the enterprise: the alignment of business and information technology strategies. *IBM Systems Journal*, 32 (1): 198-221.
- Luftman, J., Papp, R. and Brier, T. 1999. Enablers and inhibitors of business-IT alignment. *Communications of AIS*. Vol 1, Article 11. Date of access 15/May/2007.
- Luftman, J., Papp, R. and Brier, T. 2002. Enablers and inhibitors of business IT alignment. *ABInsight*. Sept. <http://www-1.ibm.com/ibm/palisades/abinsight/issues/2002-Sept/article-4-print.ht>. Date of access 15/May/2007.
- Luftman, J., Papp, R., and Brier, T. 1995. The strategic alignment model: assessment and validation. *Proceedings of the Information Technology Management Group of the Association of Management (AoM) 13th Annual International Conference*, Vancouver, British Columbia, Canada, August 2-5, (pp. 57-66).
- Maes, R., Rijsenbrij, D., Truijens, O. and Goedvolk, H. 2000. Redefining business – IT alignment through a unified framework, <http://imwww.fee.uva.nl/~maestro/PDF/2000-19.pdf>. Date of access 15/May/2007.
- Maruyama, G. 1998. *Basics of structural equation modeling*. Sage publications, Thousand Oaks, CA.
- McLean, E., and Soden, J. 1977. *Strategic Planning for MIS*. New York: John Wiley and Sons.
- Mdlungu, B. 2005. *The strategic alignment maturity level in a major financial services organisation in south Africa*. A thesis in Information Technology. Pretoria, South Africa, Tshwane University of Technology.
- Morrow, K. 2007. Changing role of the CIO - Sorry but it's getting even tougher folks. *CIO Magazine*, (Mar 23).
- Nash, I. 2000. *Where are the CFO's heading: the role of financial management*. http://wps.prehall.com/au_be_finmang_3/0,7205,539975-,00.html. Date of access 1/July/2006.
- Nizker, E. 2007. The Basis for the IT Strategic Planning Questions to IT Governance. *CIO com.* (May 4): 11 pages. http://advice.cio.com/eugene_nizker/the_basis_for_the_it_strategic_planning_questions_to_it_governance. Date of access 15/May/2007.
- Nugent, M. 2004. The four phases of IT/business alignment. *CIO Update*, (10 December). <http://www.cioupdate.com/insights/article.php/3446591>. Date of access 4/January/2005.
- Packeteer, Inc. 2004. Practical strategies for aligning IT with business. (05 January): 8 pages. www.Packeteer.com. Date of access 26/January/2007.
- Papp, R. 1995. *Determinants of strategically aligned organizations: a multi-industry, multi-perspective analysis*. Hoboken, NJ: Stevens Institute of Technology. <http://www-1.ibm.com/ibm/palisades/abinsight/issues/2002-Sept/article-4-print.ht>. Date of access 26/January/2007.
- Papp, R. 2001. *Strategic Information technology: opportunities for competitive advantage*. Idea Group Publishing.
- Reich, B. and Benbasat, I. 2000. Factors that influence the social dimension of alignment between business and information technology objectives. *Management Information Systems Quarterly*, 24 (1): 81-113.
- Renner, R., Wong, D. and Latimore, D. 2003. Business and IT operational models in financial services: beyond strategic alignment. IBM Corporation. ibm.com/bcs. Date of access 24/January/2007.
- Riel, C. Van, B. and Dijkstra, G. 2005. The influence of employee communication on strategic business alignment, RSM Erasmus University, Erasmus Research Institute of Management (ERIM). <http://hdl.handle.net/1765/6996>. Date of access 14/September/2006.
- Robson, W. 1994. *Strategic management and Information systems: an integrated approach*. London, UK: Pitman Publishing.
- Rockart, J., Earl, M. and Ross, J. 1996. *The new IT organization: eight imperatives*. Massachusetts Institute of Technology.
- Ross, J., Beath, C., and Goodhue, D. 1996. Develop long-term competitiveness through IT assets. *Sloan Management Review*, 38 (1): 11 pages.

- Segars, A. and Glover, V. 1998. Strategic information systems planning success: an investigation of the construct and its measurement. *MIS Quarterly*, 22 (2 June): 139-163.
- Sekaran, U. 2003. *Research methods for business: a skill-building approach*. Fourth edition. John Wiley & Sons, Inc., USA,
- Senn, A. 2004. Re: Align- tackling business and IT alignment. *CIO Advertising Supplement*. (March 15).
- Tallon, P., Kraemer, K. and Gurbaxani, V. 2000. Executives' perceptions of the business value of information technology: a process-oriented approach. *Journal of Management Information Systems*, (16): 145-173.
- The Conference Board. 2003. *Forging Strategic Business Alignment Executive Summary*. www.Conference-Board.org. Date of access 26/Januaty/2007.
- Thejendra, B. 2007. Diary of a tired CTO. *CIO Magazine*, (May 24). http://advice.cio.com/thejendra/diary_of_a_tired_cto. Date of access 1/June/2007.
- Vasquez, J. 2004. Comments on: the argument over IT: IT does matter. *CIO Magazine*. (1 May): 6 pages. <http://comment.cio.com/comments/17523.html>). Date of access 10/October/2006.
- Venkatraman, N. 1989. The concept of fit in strategy research. *Academy of Management Review*. 14 (3): 423-444.
- Weiss, J. and Thorogood, A. 2006. A diagnostic for exploring IT alignment as a strategic weapon. *Proceedings of the 39th Hawaii international conference on system sciences*.
- Rigon, E. What is structural equation modeling. <http://www2.gsu.edu/~mkteer/sem2.html>. Date of access 20/July/2007.
- Wikipedia. Structural equation modeling. Wikipedia, the free encyclopedia. http://en.wikipedia.org/wiki/Structural_equation_modeling. Date of access 17/ June/2007.
- Yin, R. 1994. *Case Study Research: Design and Methods*. Sage Publications.

