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How Does Alignment of Business and IT Strategies Impact Aspects of IT Effectiveness?

Shankar Babu Chebrolu
Colorado Technical University Online

Lawrence Ness
Capella University

Alignment between information technology (IT) and business stakeholders on their strategies has traditionally been viewed as the means to achieve greater IT delivery capabilities, but there is lack of empirical evidence as to how strategic alignment impacts individual aspects of IT effectiveness (e.g., quality of service [QoS], user satisfaction, and IT helpfulness to users); there is also a lack of empirical evidence surrounding how each individual element of strategic alignment impacts overall IT effectiveness. The intent of this research was to contribute to the body of knowledge that could be applied by researchers, businesses, and IT organizations alike to achieve optimal results based on the findings from a sample population, which included IT organizations of all sizes and types.

Keywords: *business strategy, information technology, IT, IT effectiveness, IT strategy, strategic alignment*

Introduction and Background

Information technology (IT) is changing the way businesses operate, the process of creating products and services for their customers, and the way in which they compete (Armbrust et al., 2009). Pierce (2002) examined the relationships between business strategy, IT strategy, strategic alignment, return on IT investment, and corporate performance and provided empirical evidence for the effect of alignment between business and IT strategies by measuring return on IT investment and corporate performance. Tallon and Kraemer (2003), using the theory of dynamic capabilities, examined the relationships between IT flexibility, strategic alignment, and IT business value to assess whether capabilities around flexibility can enable corporations to realize greater payoffs from IT investment. Ness (2005) examined the relationships between IT flexibility, strategic alignment, and IT effectiveness to provide empirical evidence on the strength of these relationships and asserted with evidence that IT flexibility has greater influence on IT effectiveness than does strategic alignment on larger IT organizations.

Chebrolu (2010) examined the relationships between cloud adoption, strategic alignment, and IT effectiveness to determine the dominance and priority of these two constructs on IT effectiveness on all IT organizations regardless of their size and type. This study is an extension of Chebrolu's (2010) research, drilling down to study the impact of individual strategic alignment and its construct elements on IT effectiveness as a whole and on the individual aspects of IT effectiveness. Prior research was used as the basis for certain construct elements, measures, and instrumentation as a means for measuring and determining construct's reliability, validity, and correlation. Studies from

Please address queries to: Shankar Babu Chebrolu, 302 Briargate Terrace Lane, Cary, NC 27519. Email: babushankar2001@gmail.com

Ness (2005), Tallon and Kraemer (2003), and Pierce (2002), along with their survey formats, were used as a means to achieve construct measurement and instrumentation.

Statement of the Problem

Increased competitive pressures upon businesses as a result of global competition, increased complexity and economic uncertainty, and more dynamism in the marketplace (Brown, 2004) are continuing to escalate, generating the need for higher efficiency and productivity among IT organizations (e.g., IT departments in IT companies as well as in non-IT companies). In preparation for economic recovery from the global recession that started in 2007, many IT organizations have been analyzing their management practices and sharpening their business models (Howard, 2009). Information technology budgets will be leaner, management discipline tighter, and business models more focused. The practice of removing extra expenses from the IT portfolio and determining areas of strategic investment is essential in a restricted economy (Howard, 2009). Breakthroughs in technology-based services and solutions are driving frequent, rapid, and unplanned changes in business strategies along with the resultant demand upon IT for its support required to achieve sustained competitive advantage (Ness, 2005). In particular, based on the literature reviewed, there was a lack of empirical evidence about the relationships between strategic alignment and IT effectiveness to the level of their individual constructs or aspects.

Purpose of the Study

The purpose of this quantitative correlational study was to assess the relationship between strategic alignment by IT organizations and its impact on individual aspects of IT effectiveness. The contribution of this study lies in measuring and publishing the empirical evidence between strategic alignment by IT organizations and their aspects of effectiveness irrespective of the size or type of the organization. The intent of this research was to contribute to the body of knowledge that could be applied by researchers, businesses, and IT organizations alike to achieve optimal results through strategic alignment. In addition, the new knowledge gained from the benefits of alignment of business and IT strategies on the individual aspects of IT effectiveness would enhance the decision-making process for IT managers when considering strategic alignment.

Definition of Terms

This research focused on the following two main variables: strategic alignment (independent) and IT effectiveness (dependent). A brief overview of those constructs and related concepts follows:

Strategic Alignment

Slightly modifying the operational definition given by David (2003) to reflect the relationship between the business and IT, strategic alignment can be defined as the art and science of formulating, integrating, and implementing decisions between the business and IT, which enables an organization to achieve its objectives. According to Feeny and Willcocks (1998), the function of architecture planning is analogous to that of strategic alignment in that a technical blueprint is created, enabling IT to effectively respond to the needs of business, both current and future.

IT Effectiveness

Differences of opinion exist as to the best definition, dimensions, and measures to use for IT effectiveness (Seddon, Staples, Patnayakuni, & Bowtell, 1999). To ensure overall continuity and to maintain a high degree of construct validity and reliability, this study incorporated the definition used by Tallon, Kraemer, and Gurbaxani (2000) suggesting that IT effectiveness is defined by how well IT delivers products and services based on the needs—or requirements—of the business. This

definition moves beyond the theoretical *ability* of IT to deploy new products and services and assesses *actual* performance.

Assumptions and Limitations

The assumptions of this study were that the participants would answer the survey questions based on their technical expertise in IT. The participants' technical expertise must include knowledge pertaining to their firm's alignment efforts with business on strategy and how effective their IT organizations are. Also, it was assumed that the participants would answer all survey questions honestly.

The limitations of this study were that the sampling population firms in the United States have one, or more, IT employee. The results from this study should not be generalized to non-IT organizations. In addition, the results would represent participants from multiple business types, and therefore, the results should not be interpreted as representing any specific business sector, type, or size.

Literature Review

Strategic Alignment

Conceptually, IT strategic alignment is viewed in the literature as a bridge that links IT to different viewpoints on other domains of an organization and its environment (Avila, Goepp, & Kiefer, 2009). Strategic alignment process makes sure that business strategy, IT strategy, organizational infrastructure and processes, and IT infrastructure and processes are all in alignment. Strategic alignment of IT exists when a business organization's goals and activities are in harmony with the information systems that support them. Chief information officers (CIOs) have consistently considered IT alignment with business strategy a top priority.

Any requirements for an organization's IT should be in alignment with its business strategy. It is important that the requirements analysis capture both an organization's strategic business objectives and the activities and processes by which those objectives are to be achieved (Bleistein, Cox, & Verner, 2005). Two major themes identified in the research literature about strategic alignment success factors are mutual understanding of business strategy between business and IT managers and incorporation of this understanding into IT planning and development. Babar, Cox, Bleistein, and Verner (2007) argued that organizations need to understand that by getting requirements right, they can get alignment right; but, the issues of business strategy and strategic alignment are ignored in requirements engineering research literature. Bleistein and colleagues (2005) proposed an approach that incorporates an explicit understanding of business strategy within requirements engineering activity as a means of ensuring alignment between system requirements and the business strategy that it is intended to support.

Huang (2009) studied how IT resources can be strategically used to be an innovative company and found that in order to increase strategic alignment while pursuing aggressive innovation at large companies, their IT functions should be flexible in structure. Brodbeck, Rigoni, and Hoppen (2009) studied the level of maturity and order of importance of the criteria that promote strategic alignment and found that elements such as communication, skills, and architectural scope are of greatest importance to promote strategic alignment between business and IT. There have been several studies on strategic alignment between various functions within organizations. Becker, Prikladnicki, and Audy (2008) proposed that quality function deployment is an effective technique that can be used to align strategic goals and software process improvement within an IT organization. Motjolopane and Brown (2004) found that those IT systems that match business goals and strategies

or those that create new strategies and direction to business will guarantee strategic alignment, not any successful IT implementations by itself. Qiu and Li (2009) argued that there are two factors influencing IT strategic alignment—IT flexibility and visibility of information resources—and, in order to achieve strategic alignment between enterprise IT and business, IT strategy should include end users' perceptions of business strategy. Pierce (2002) suggested that alignment pertained to long-term planning as a strategic process rather than short-term planning as a tactical operational method.

IT Effectiveness

Several studies have shown that effectiveness of IT investments lead to favorable results in terms of firms' performance directly or indirectly across various business fields such as the healthcare industry (Halamka, 2009), rubber industry (Huang, 2007), supply chain management (González-Benito, 2007), and across various countries and transitional economies (Samoilenko, 2006). Research also indicates that firms with superior IT capability exhibit higher performance when compared to average industry performance (Santhanam & Hartono, 2003). Huang (2007) found that several factors such as ease of use, frequency and length of use, and company culture and attitudes of employees toward IT affects the company's performance in a positive manner, even though there is no direct impact of IT investment on performance. Anderson, Banker, and Ravindran (2006) published their research analysis that showed that the companies that spent more on IT upgrades increased in value and improved their earnings performance over time. Motjolopane and Brown (2004) recognized that achieving a strategic business–IT alignment contributes immensely to ensuring that IT investments result in improved organizational performance. Lee, Chu and Tseng (2009) argued that strategic alignment between IT and business is required to use IT assets effectively to assist business management and practices and to functionally integrate with internal and external variables. González-Benito (2007) found out that IT investment and its effectiveness is related to the degree of strategic integration with business and the performance improvement of business because IT takes place in very different ways and at different levels.

Methodology

Research Design

The purpose of this quantitative correlative study was to examine the relationship between strategic alignment by IT organizations and its impact on individual aspects of IT effectiveness, which can be measured and published. The research was designed to study the degree to which the individual constructs of strategic alignment correlate with individual elements or aspects of IT effectiveness in terms of the ability of IT executives to deliver solutions to the business in a dynamic marketplace. The research questions are as follows:

1. To what extent, if any, does strategic alignment between IT and business impact IT QoS within all IT organizations, irrespective of their type and size?

2. To what extent, if any, does strategic alignment between IT and business impact user satisfaction within all IT organizations, irrespective of their type and size?

3. To what extent, if any, does strategic alignment between IT and business impact IT helpfulness to users within all IT organizations, irrespective of their type and size?

4. To what extent, if any, do the elements of strategic alignment between IT and business impact overall IT effectiveness within all IT organizations, irrespective of their type and size?

The research design was nonexperimental. The research approach for this study was quantitative correlational, which allows for some flexibility in assessing the relationships among the variables. In an effort to retain the identical validity and reliability from previous research methods and instrumentation by Ness (2005) and Tallon and Kraemer (2003), a 7-point Likert-type scale was used to represent ordinal data values. Prior research was used as the basis for certain construct elements, measures, and instrumentation, as a means for measuring and determining construct's reliability, validity, and correlation. The literature search revealed no previous studies that have been conducted that assess the relationships among constructs of strategic alignment and elements or aspects of IT effectiveness simultaneously; however, some authors provided the elements and instrumentation necessary to measure each construct individually for the current research. In particular, the studies from Ness (2005), Tallon and Kraemer (2003), and Pierce (2002), along with their survey formats, were used as a means to achieve construct measurement and instrumentation.

The analyses of ordinal data values was handled through linear and bivariate regression analysis and chi-square testing. The use of regression analysis for ordinal data types was consistent with prior research by Ness (2005), Tallon and Kraemer (2003), and Pierce (2002). The survey questions on strategic alignment and IT effectiveness by Ness (2005) were used as part of the total survey instrument in this study to achieve overall construct reliability, validity, and correlation among strategic alignment and IT effectiveness.

Conceptual Model

This study's conceptual model is shown in Figure 1. It is an extension of Chebrolu's (2010) research, drilling down to study the impact of the construct elements of strategic alignment on IT effectiveness as a whole and on the individual aspects of IT effectiveness among IT organizations irrespective of their type and size. Figure 1 shows seven constructs of strategic alignment as inputs to IT effectiveness and three aspects of IT effectiveness as output. The primary interest of current research was to assess the relationship between seven constructs of strategic alignment and IT effectiveness as a measure of IT organizations' success and sustained competitive advantage.

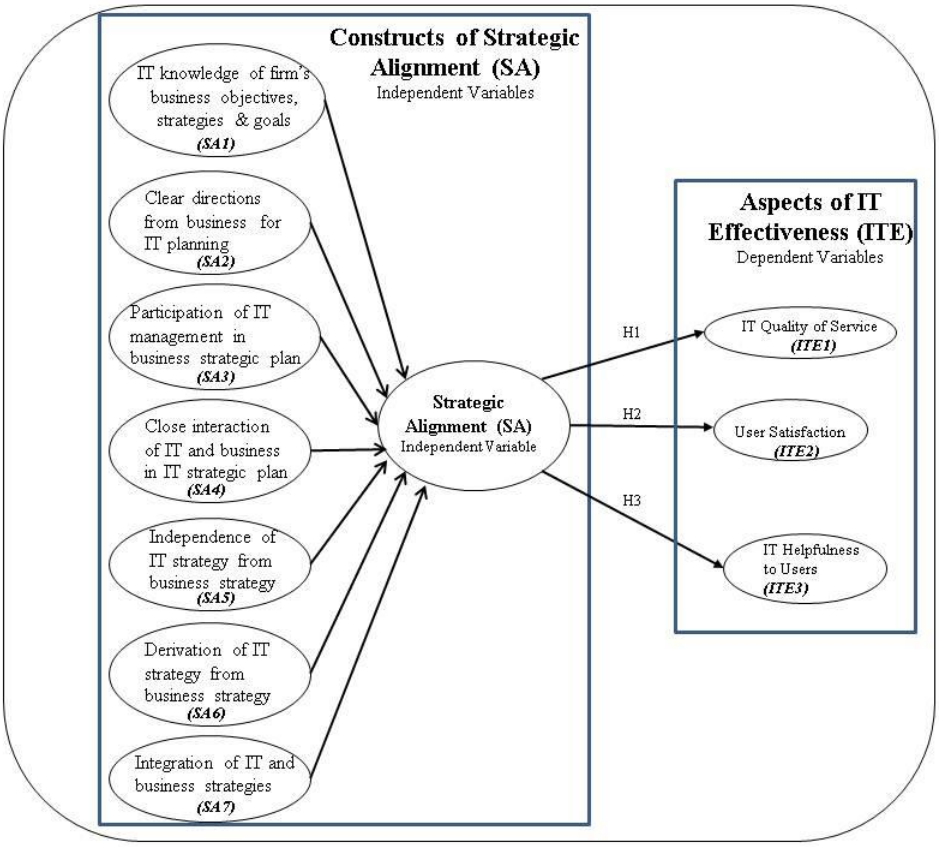

Figure 1: *Conceptual Model*

Operational Definition of Variables

The elements from prior research were used to assess the constructs of strategic alignment and IT effectiveness. This method of measurement helped to ensure validity and reliability between this study and previous research. Strategic alignment had multiple survey questions that were used to measure each element's strength toward IT effectiveness based on a 7-point Likert-type scale. The total strength of the overall construct on IT effectiveness was determined through an averaging of the means of each aspect. Following is a description of the primary elements belonging to two variables on this study.

Strategic Alignment Elements

The primary elements (or items) that were identified by Pierce (2002) were used to measure strategic alignment construct. Ness (2005) asserted that specific elements identified by Pierce (2002) regarding coordination of business and IT plans were very closely aligned to that required for strategic alignment. The research instrument questions used by Ness (2005) and Pierce (2002) were all based on a 7-point Likert-type scale representing ordinal data. These elements are *IT knowledge of firm's business objectives, strategies, and goals; clear directions from business for IT planning*; *participation of IT management in business strategic plan; close interaction of IT and business in IT strategic plan*; *independence of IT strategy from business strategy*; *derivation of IT strategy from business strategy*; and *integration of IT and business strategies*.

IT Effectiveness Elements

The primary elements (or items) that were used to measure IT effectiveness construct were taken from prior research by Tallon and colleagues (2000), which they used to assess the construct of strategic flexibility. Ness (2005) asserted that elements used to measure strategic flexibility appeared to be closely aligned operationally and provided the best source to measure IT effectiveness. These elements are *overall QoS*, *user satisfaction with IT,* and *helpfulness of IT staff to users*.

This study was consistent with the prior researchers in terms of methodology, and hence a 7-point Likert-type scale was used as the basis for data collection and analysis. The scale's ordinal data represents data elements in an ordered measurement relative to size or quality (Aczel & Sounderpandian, 2002). In regression analysis, collected data must show that the independent variables have a normal distribution prior to testing.

Sample

The sampling methods used by prior researchers were followed as much as possible to replicate validity and reliability. The target population for this study needs to be those who had extensive knowledge of IT and its relationship to the business. In most cases, senior IT managers (including IT directors, IT vice presidents, and IT senior vice presidents) in the role of CIOs were identified to satisfy this population criterion. A list of 4,146 names and mailing addresses of top IT executives (i.e., CIOs) was purchased from Applied Computer Research Inc. (http://www.itmarketintelligence.com). The above count of 4,146 was based on the contacts that were playing a CIO role in various IT organizations with titles like CIO, deputy CIO, acting CIO, co-CIO, global CIO, interim CIO, and associate CIO out of a total of 30,466 contacts that were available in Applied Computer Research Inc. database for IT executives based in United States. Unlike similar studies done by Ness (2005), size and type of the IT organizations were not used to narrow down the contacts, as this study is focused on all IT organizations and therefore include all sizes (small, medium, and large) and all types (for-profit, not-for-profit, educational, corporate, and government organizations). Out of 4,146 survey memos that were mailed, 71 were returned as undeliverable by the United States Postal Service, leaving 4,075 eligible participants.

Instrumentation / Measures

The survey instrument consisted of questions that were designed to collect information from the participants on strategic alignment and IT effectiveness. The source for this study's survey instrument was based on the research done by Ness (2005) on IT flexibility, strategic alignment, and IT effectiveness. The survey was a combination of the original survey questions that were created by Tallon and colleagues (2000) and later used by Tallon and Kraemer (2003) and Ness (2005) for IT flexibility, strategic alignment, and IT effectiveness. In an attempt to replicate the original survey, the content, layout, and format of the previous survey questionnaire was maintained for added validity and reliability. All questions maintained their original standardized 7-point Likert-type scale format for assessment.

Data Collection and Analysis

Data was collected through an online survey instrument that was described earlier. The link to the online survey was distributed to the potential participants by sending an envelope by United States Postal Service regular mail, which directed participants to the questionnaire hosted by SurveyMonkey (https://www.surveymonkey.com), a company specializing in online survey data collection and storage. The targeted participants in this survey were IT executives (whose titles

include director, vice president, and senior vice president) playing the role of CIOs for U.S.-based firms. A total of 148 participants had responded to the survey questionnaire within the timeframe allotted for statistical analysis from among 4,075 eligible participants, but only 143 participants provided answers to at least one question. The survey results, in the form of a zip file containing a Microsoft Excel spreadsheet, were downloaded from SurveyMonkey. The data was then imported into SPSS student version 20 software for the required statistical analysis and formatting. Multiple regression analyses were performed as confirmation to the chi-square results obtained. The strength of each relationship between strategic alignment and IT effectiveness (ITE1, ITE2, and ITE3) was evaluated based on the correlation coefficients and the statistical significance level calculated for each factor. In addition, the strength of each relationship between individual constructs of strategic alignment and ITE1, ITE2, and ITE3 was also evaluated based on the correlation coefficients and the statistical significance level calculated for each factor.

Validity and Reliability

According to Swanson and Holton (2005), there are three common types of validity: content validity, criterion validity, and construct validity. A construct is something that cannot be directly measured or observed like job satisfaction and IT effectiveness. A construct can be measured quantitatively and analyzed statistically, which is what this study incorporated. According to Cooper and Schindler (2008), a measure is reliable to the degree that it supplies consistent results. Reliability is a necessary contributor to validity but is not a sufficient condition for it. The reliability of a study implies that the operations of the study can be repeated with the same results.

Findings

Assessment of Scale Validity and Reliability

According to the G*Power 3 post-hoc power analyses, a sample size of 118 was recommended to achieve the statistical power necessary to establish the validity of this study. The survey sample collected by SurveyMonkey totaled 143. In addition, an overall Cronbach's alpha score of 0.805 was calculated from standardized items that substantiated the internal consistency for this study. Norusis (2008a) recommended a Cronbach's alpha score of at least 0.5 to establish the reliability of a study's measures. These statistical tests have shown that the data used in this study is both valid and reliable. Only 118 participants answered all 10 questions, as some participants chose to skip few. Norusis (2008b) recommended that before calculating a correlation coefficient, a screening for data outliners should be made to prevent misleading results. A box and whisker plot was completed using the entire 118 response dataset. The box and whisker plot identified one response dataset (92) for ITE1 and ITE3 outside of the interquartile range, whereas it identified no response datasets for strategic alignment (or for any of the individual elements SA1 through SA7) outside of the interquartile range. Norusis (2008b) warned that any dataset outside the whisker range in the box and whisker plot is considered an extreme and should be removed from the full response dataset. Therefore, the dataset (92) was removed from this study leaving 117 responses for analysis.

Analysis and Evaluation of the Research Data

Bivariate Correlations and Linear Regression Analysis

After adjusting the full response dataset to 117, an interscale correlation test was performed on all paired constructs of strategic alignment versus ITE1 through ITE3 (see Table 1). The arrangement of variables in the bivariate correlations test was such that the ITE1, ITE2, and ITE3 variables were the target (dependent) and the strategic alignment was the predictor (independent) variable. The

results of the tests revealed that no positive correlations existed between SA-ITE1 at r = -.106 (p > .05, r^2 = .011), SA-ITE2 at r = -.087 (p > .05, r^2 = .008), or SA-ITE3 at r = -.156 (p > .05, r^2 = .024). The linear regression tests validated the bivariate correlation test results by producing the exact calculations. The phi/Pearson's r- and p-values from Table 1 show that a positive correlation between the paired constructs of SA-ITE1 (r = -.106, p > .05), SA-ITE2 (r = -.087, p > .05), and SA-ITE3 (r = -.156, p > .05) cannot be established due to the negative r-values and their problematic p-values.

Table 1: *Bivariate Correlation, Linear Regression, and Pearson's Chi-Square Crosstabs Analysis Results for SA Versus ITE1–ITE3 (*n *= 117)*

	SA-ITE1	SA-ITE2	SA-ITE3
Pearson's chi-square (χ^2)	117.665	115.465	112.467
Pearson's correlation (r)	-.106	-.087	-.156
R-square (r^2)	.011	.008	.024
Significance (p)	.254 (> .05)	.348 (> .05)	.093 (> .05)

Note: SA = strategic alignment; ITE = information technology effectiveness.

Pearson's Chi-Square Test

The Pearson's chi-squared test results with 117 response datasets are shown in Table 1. The Pearson's chi-squared results for SA-ITE1 were $\chi^2(1, N=117) = 117.665$, p > .05; for SA-ITE2 were $\chi^2(1, N=117) = 115.465$, p > .05; and for SA-ITE3 were $\chi^2(1, N=117) = 112.467$, p > .05. The relationships between SA-ITE1, SA-ITE2, and SA-ITE3 are weak, and their p-values are problematic.

Scatter Plot Analysis

According to Norusis (2008b), the inequality of regressions or heteroscedasticity represents a sequence of random variables with different variances, and hence square-root transformations are commonly used when addressing the assumption of heteroscedasticity in linear regression analyses. The paired constructs of ITE1-SA, ITE2-SA, and ITE3-SA have negative slopes, but the technique of square-root transformation for √ITE1-SA, √ITE2-SA, and √ITE3-SA constructs are used for further analysis. The same kinds of slopes with similar r^2 linear values are obtained, however.

Normal P–P Plots for √ITE1, √ITE2, √ITE3, and Strategic Alignment

According to Norusis (2008a), an assumption of hypothesis testing is a normal distribution of values of the dependent variable. To demonstrate that √ITE1, √ITE2, and √ITE3 had a normal distribution at the reduced response dataset of 117, the observed cumulative probability was plotted against the expected cumulative probability for √ITE1, √ITE2, and √ITE3. It was found that their standardized values represent a normal distribution of the independent variables and conformed to the assumption of homoscedasticity for regression analysis. Therefore, the 117 datasets represented in √ITE1, √ITE2, and √ITE3 (aspects of IT effectiveness) for this study were valid for parametric regression testing. Similarly, the observed cumulative probability was plotted against the expected cumulative probability for strategic alignment to make sure that the 117 datasets represented in strategic alignment for this study were valid for regression testing.

Bivariate Correlations Analyses With √ITEn

The direction and strength of the relationships between the variables were determined by the r^2-values of each correlation calculation (see Table 2). The p-value was the basis for the rejection or acceptance of each null hypothesis of this study. The bivariate correlations and linear regression analyses were performed on paired constructs (SA-√ITE1, SA-√ITE2, and SA-√ITE3). Table 2 shows

that the paired construct of SA-√ITE3 (r = -.158, r^2 = .025, p > .05) had relatively the strongest negative correlation, followed by paired constructs of SA-√ITE1 (r = -.111, r^2 = .012, p > .05) and SA-√ITE2 (r = -.094, r^2 = .009, p > .05).

Table 2: *Bivariate Correlation and Linear Regression Results for SA Versus √ITE1–√ITE3 (*n *= 117)*

	SA-√ITE1	SA-√ITE2	SA-√ITE3
Pearson's Correlation (r)	-.111	-.094	-.158
R-square (r^2)	.012	.009	.025
Significance (p)	.233 (> .05)	.314 (> .05)	.089 (> .05)

Note: SA = strategic alignment; ITE = information technology effectiveness.

The same method that was used to determine the correlations among the constructs in Table 2 was also used to determine the correlations among the constructs of strategic alignment. Table 3 shows the correlation and size of each construct used in strategic alignment (SA1 through SA7) and √SA. The bivariate correlations test results in Table 3 provided evidence that there were positive and in most cases strong correlations among constructs of strategic alignment and √SA with the relationship between SA4-√SA being the strongest (r = .913, p < .001) and the relationship between SA5-√SA being the weakest (r = .411, p < .001).

Table 3: *Bivariate Correlation and Linear Regression Results for SA1–SA7 Versus √SA (*n *= 117)*

	SA1-√SA	SA2-√SA	SA3-√SA	SA4-√SA	SA5-√SA	SA6-√SA	SA7-√SA
Pearson's correlation (r)	.887	.866	.863	.913	.411	.864	.847
R-square (r^2)	.787	.750	.746	.834	.169	.746	.717
Significance (p)	.000 (< .001)	.000 (< .001)	.000 (< .001)	.000 (< .001)	.000 (< .001)	.000 (< .001)	.000 (< .001)

Note: SA = strategic alignment; ITE = information technology effectiveness.

The effect sizes of each dimension represent the r^2-value used in this study's conceptual model results as shown in Figure 2.

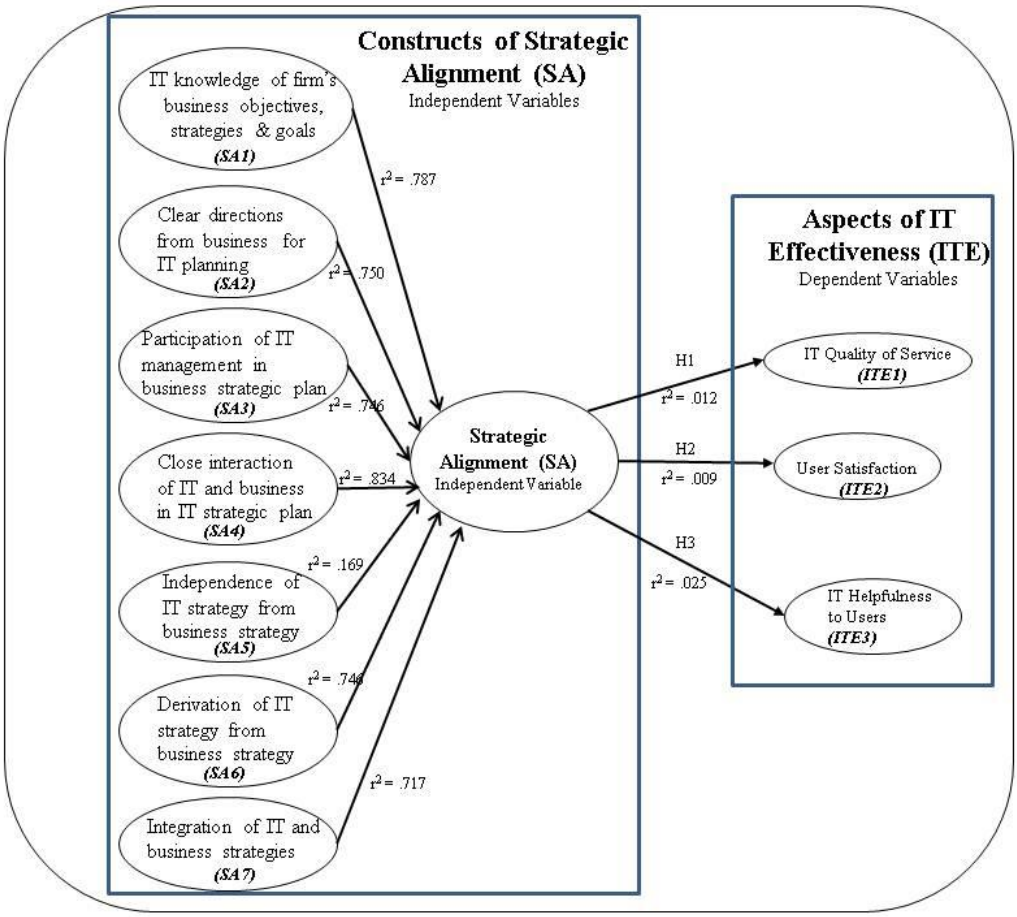

Figure 2: *Conceptual Model Results*

Based on the r^2-values, it is easy to argue that there is almost no correlation between the paired constructs of SA-ITE1, SA-ITE2, and SA-ITE3 when the sample consists of IT organizations of all sizes and types. The findings from this study are different than that of Ness's (2005) research, which showed that there is a positive relationship of strategic alignment on IT effectiveness ($r^2 = .068$, $p < .05$) within larger IT organizations.

Examination of Hypotheses

The research findings were examined to determine the rejection or acceptance of the study's hypotheses. The values in Table 2 represent the interscale correlation results with transformation for the dependent variable (√ITE), which were used to reject or accept each null hypothesis.

Hypothesis 1: Strategic Alignment Correlated With ITE1

$H1_0$: Strategic alignment was not positively correlated with QoS within all IT organizations, irrespective of the type and size of the IT organization.

$H1_a$: Strategic alignment was positively correlated with QoS within all IT organizations, irrespective of the type and size of the IT organization.

Finding 1: $H1_0$ Not Rejected

Strategic alignment did not positively correlate with QoS. The null hypothesis was not rejected because the *p*-value of .233 was greater than the significance level of .05 for testing (Norusis, 2008a). The values for strategic alignment in Table 2 confirm that there is no or very little negative correlation between strategic alignment and QoS. The values for SA-√ITE1 were $r = -.111$, $r^2 = .012$, $p > .05$; therefore, the findings established that there is no positive correlation between strategic alignment and ITE1 (QoS) with the sample population that includes all types and sizes of IT organizations.

Hypothesis 2: Strategic Alignment Correlated With ITE2

$H2_0$: Strategic alignment was not positively correlated with user satisfaction within all IT organizations, irrespective of the type and size of the IT organization.

$H2_a$: Strategic alignment was positively correlated with user satisfaction within all IT organizations, irrespective of the type and size of the IT organization.

Finding 2: $H2_0$ Not Rejected

Strategic alignment did not positively correlate with user satisfaction. The null hypothesis was not rejected because the *p*-value of .314 was greater than the significance level of .05 for testing (Norusis, 2008a). The values for strategic alignment in Table 2 confirm that there is no or very little negative correlation between strategic alignment and user satisfaction. The values for SA-√ITE2 were $r = -.094$, $r^2 = .009$, $p > .05$; therefore, the findings established that there is no positive correlation between strategic alignment and ITE2 (user satisfaction) with the sample population that includes all types and sizes of IT organizations.

Hypothesis 3: Strategic Alignment Correlated With ITE3

$H3_0$: Strategic alignment was not positively correlated with IT helpfulness to users within all IT organizations, irrespective of the type and size of the IT organization.

$H3_a$: Strategic alignment was positively correlated with IT helpfulness to users within all IT organizations, irrespective of the type and size of the IT organization.

Finding 3: $H3_0$ Not Rejected

Strategic alignment did not positively correlate with IT helpfulness to users. The null hypothesis was not rejected because the *p*-value of .158 was greater than the significance level of .05 for testing (Norusis, 2008a). The values for strategic alignment in Table 2 confirm that there is no or very little negative correlation between strategic alignment and IT helpfulness to users. The values for SA-√ITE3 were $r = -.158$, $r^2 = .025$, $p > .05$; therefore, the findings established that there is no positive correlation between strategic alignment and ITE3 (IT helpfulness to users) with the sample population that includes all types and sizes of IT organizations.

Hypothesis 4: Impact of SA1 Through SA7 on IT Effectiveness

$H4_0$: None of the individual constructs of strategic alignment were positively correlated with overall IT effectiveness within all IT organizations, irrespective of the type and size of the IT organization.

$H4_a$: At least some of the individual constructs of strategic alignment were positively correlated with overall IT effectiveness within all IT organizations, irrespective of the type and size of the IT organization.

Finding 4: $H4_0$ Not Rejected

Except SA5, most of the individual constructs of strategic alignment did not positively correlate with overall IT effectiveness. The null hypothesis was not rejected because the *p*-value—even for the positive correlation of SA5-ITE—was .176, which is greater than the significance level of .05 for testing (Norusis, 2008a). The values for SA1-SA7 versus IT effectiveness in Table 4 confirm that there is no positive correlation (*p*-value was problematic in case of SA5) between constructs of strategic alignment and overall IT effectiveness with the sample population that includes all types and sizes of IT organizations.

Table 4: *Bivariate Correlation and Linear Regression Results for SA1–SA7 Versus ITE (*n *= 117)*

	SA1-ITE	SA2-ITE	SA3-ITE	SA4-ITE	SA5-ITE	SA6-ITE	SA7-ITE
Pearson's correlation (*r*)	-.173	-.156	-.112	-.165	.126	-.050	-.124
R-square (r^2)	.030	.024	.013	.027	.016	.002	.015
Significance (*p*)	.063 (> .05)	.094 (> .05)	.230 (> .05)	.075 (> .05)	.176 (> .05)	.595 (> .05)	.184 (> .05)

Note: SA = strategic alignment; ITE = information technology effectiveness.

Summary and Implications

Summary

This research study provided new empirical evidence that strategic alignment has no or very small negative correlation with the aspects of IT effectiveness (ITE1, ITE2, and ITE3) within a sample population including all types and sizes of IT organizations (hypotheses 1 through 4). These findings are inconsistent with prior research done by Ness (2005), which established a positive correlation of strategic alignment with IT effectiveness with a sample population that includes only large and for-profit IT organizations. These findings are consistent, however, with prior research done by Chebrolu (2010), which established a very little or negative correlation of strategic alignment with IT effectiveness within a sample population that includes all types and sizes of IT organizations.

Many authors have researched the constructs of strategic alignment and IT effectiveness for large, for-profit IT organizations—either as a singled or as paired factors—to determine business value through competitive advantage. This study, however, filled an information gap in the literature because it focused on the impact of strategic alignment on individual aspects of IT effectiveness and the impact of individual constructs of strategic alignment on overall IT effectiveness and included small, medium, large, for-profit, not-for-profit, educational, corporate, and government IT organizations.

Implications

Strategic alignment between IT and business works better in the case of larger IT organizations than in the case of smaller and medium-scale IT organizations based on this research and research done by Ness (2005). The implication of this research finding is that IT executives and IT managers within smaller and medium-scale IT organizations should not allocate more financial resources

toward strategic alignment with business to improve their IT effectiveness. If they are planning to align strategically with business, they should do so by prioritizing other elements like cloud adoption (Chebrolu, 2012) or IT flexibility (Ness, 2005), which seems to have positive and stronger impact on IT effectiveness.

The findings from this study represented only firms in the United States that were from multiple business types and sizes, and therefore, the results should not be interpreted as representing any specific business sector type or size. Finally, because the participants were all top IT executives acting in a CIO role in various IT organizations, the findings did not reflect any information that could have been obtained from lower managers or end users.

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