

2008

# Determinants of Organisational Transformation: An IT-Business Alignment Perspective

Ahmad Abareshi

*School of Business Information Technology RMIT University Melbourne, Australia, ahmad.abareshi@rmit.edu.au*

Bill Martin

*School of Business Information Technology RMIT University Melbourne, Australia, bill.martin@rmit.edu.au*

Alemayehu Molla

*School of Business Information Technology RMIT University Melbourne, Australia, alemayehu.molla@rmit.edu.au*

Follow this and additional works at: <http://aisel.aisnet.org/acis2008>

---

## Recommended Citation

Abareshi, Ahmad; Martin, Bill; and Molla, Alemayehu, "Determinants of Organisational Transformation: An IT-Business Alignment Perspective" (2008). *ACIS 2008 Proceedings*. 80.

<http://aisel.aisnet.org/acis2008/80>

This material is brought to you by the Australasian (ACIS) at AIS Electronic Library (AISEL). It has been accepted for inclusion in ACIS 2008 Proceedings by an authorized administrator of AIS Electronic Library (AISEL). For more information, please contact [elibrary@aisnet.org](mailto:elibrary@aisnet.org).

## **Determinants of Organisational Transformation: An IT-Business Alignment Perspective**

Ahmad Abareshi, Bill Martin, Alemayehu Molla  
School of Business Information Technology  
RMIT University  
Melbourne, Australia

Email: [ahmad.abareshi@rmit.edu.au](mailto:ahmad.abareshi@rmit.edu.au); [bill.martin@rmit.edu.au](mailto:bill.martin@rmit.edu.au); [alemayehu.molla@rmit.edu.au](mailto:alemayehu.molla@rmit.edu.au)

### **Abstract**

*Previous research in organisational sociology has focused on how organisational forms are evolved, transformed and sustained. This paper continues in this line of enquiry and tests the role of IT in organisational transformation. The transformation of an organisation can be gauged by observing key organisational attributes that are likely to feature in transformed (new) organisations. Following a review of previous literature, three major factors, that is, business strategy, IT strategy, IT strategic alignment were hypothesised to influence the dimensions of new organisational forms (NOFs). To test this model, data were collected from a survey of 312 Australian businesses. Structural equation modelling was employed to test the research hypotheses. Results from this study uncovered that the level of strategic alignment was significantly associated with the attributes of NOFs. This implies that organisations that have progressed well in the IT-business alignment maturity ladder are likely to change their structure and control mechanisms. This study concludes by highlighting some of the theoretical and practical implications of the findings.*

### **Keywords**

STROBE, STROEPIS, ICT; new organisational forms; IT strategy, SEM

### **INTRODUCTION**

Both the industrial revolution of the 19th century and the information revolution of the mid-20th century can be categorised in the language of economics. The main consequence of the industrial revolution with its impact on production processes, on industry structure and organisational design and subsequently a range of management theory and practice, was thus, the ‘economics of transformation’ (Brynjolfsson and Hitt 2000). In the ever-changing and hyper-competitive organisational environments resulting from these fundamental events, firms are attempting to find appropriate forms of organisational design (Rajan and Wulf 2006).

Although several factors are known to contribute to the evolution of organizational forms, a major influence lies in the business strategy and IT strategy an organization follows (Mintzberg 1990; Harris 2000). Therefore, this research is initially motivated by a desire to understand how business strategy and IT strategy and the alignment between these two strategies are affecting some of the prominent attributes of NOFs. To address this question, a theoretical model drawn from strategy, ICT and organisational sociology is developed. The model seeks to explicate the influence of three independent variables, that is business strategy, IT strategy, and IT strategic alignment (upstream factors) on the attributes of NOFs (downstream factors). The model is tested using Structural Equation Modelling (SEM).

### **THEORETICAL BACKGROUND**

#### **New Organisational Forms (NOFS)**

With the advent of new technologies and business processes, organisations need to be well-equipped to adapt to changes that are bound to occur in both their market and institutional environment. Most, if not all businesses are moving from traditional forms of organizing to new and modern forms to meet the ever increasing demands for flexibility, speed, and uncertainty (Foss 2002). Despite the fact that the concept of NOFs has been described as being ill-defined at the core and fuzzy at the edges, it has attracted a great deal of interest from different fields and disciplines (Foss 2002). One common way of defining NOFs is by looking at some of the key organisational attributes. Chief among them are coordination, control, size and communication culture (Fulk and Desanctis 1999).

*Coordination:* Generally, NOF demonstrate horizontal coordination (Qian, Roland et al. 2006). Discussion about horizontal coordination as the attributes of NOFs falls into the four areas of electronic workflow, concurrent engineering, stockless production, and virtual organisation. Surviving in the current uncertain

environment requires a high level of coordination among different parts of the organisation. This task is achieved using information technologies such as email, electronic data exchange (EDI) and other document-sharing technologies. In terms of concurrent engineering, it is worth noting that instead of employing sequential processing, NOFs have been employing parallel and concurrent processing (Davidow and Malone 1992). ICTs can provide all stakeholders in a supply chain with access to the information and work on different parts of the design simultaneously. Using ICTs, collaboration is achieved not just on a local but on a global scale. Enabled by telecommunication systems, NOFs are able to “replace traditional hierarchy with more egalitarian (Piore 1994). As zero inventory can reduce total of cost of production, Piore (1994) argued that the elimination of inventory would lead to greater interdependency among organisational units and to greater lateral communication and less hierarchy. The last area of horizontal coordination focuses on attribute of virtual organisation. Among the different dimensions of virtual organisations, those of the electronic rather the material nature of data, or being structureless and having ambiguous external boundaries are of high importance (Nohria and Berkley 1994). Therefore, “A coordination-intense structure” is another attribute of NOFs.

*Vertical Control:* Due to different factors including the impact of ICT the size of middle management has decreased in organisations, especially with the advent of centralized decision making authority (Pinsonneault and Kraemer 1997). Decreasing the role middle management played in organisations would lead to a much flatter organisational hierarchy. Decentralization is commonly described in the literature on NOFs using such labels as “empowerment” (Nohria and Berkley 1994). Miles and Snow (Heydebrand 1989) claim that the new ‘spherical’ organisational form is based on “leadership as a shared responsibility among colleagues, not as superior-subordinate relationship.”

*Organisation Size:* Reducing the organisational size can be a sign of movement toward NOFs (Heydebrand 1989). The employment of advanced technologies, and better and more efficient coordination mechanisms have led to a decrease in the size of organisations. Specialization, the possibility of outsourcing, and better monitoring of outsourcing arrangements are among the other factors leading to decreased size (Fulk and Desanctis 1999). However, although the study of the effects of ICT on organisation size has received much attention, there is no consensus on this issue.

*Communication Cultures:* Surviving in new volatile environments requires organisations to continuously pursue organisational innovation. Communication plays an important role in facilitating the innovation processes and is considered as the core feature in NOFs. Heckscher (1994) argues that in NOFs, relationships depend on trust, a high degree of shared vision, and broad communication about the corporate strategy. Therefore, communication technologies such as email, and EDI can play an important role to facilitate the information flow among people, many of whom may never have met each other. Consequently ‘weak ties’ among organisational staff would be supported. In other words, in such forms coordination is accomplished by individuals and teams with cross-functional, computer –mediated jobs.

### **Strategy and NOF**

Strategy is hierarchically related to something is structure (Mintzberg 1990; Harris 2000). Mintzberg (1990) argued that strategy procreates structure. Walker and Ruekert (1987) postulated that firms that follow different generic business strategies adopt different structural designs. Business strategy has been identified in prior studies as influencing the type of structure in service organizations (Moore and Yuen 2001). For instance, Sim and Teoh (1997) suggested how control system attributes were significantly related to strategy types using the Miles and Snow typology of Defender, Prospector and Analyser. In studying the interrelationships among domains of business strategy, IT strategy and organizational structure, Henderson and Venkatraman (1999) focused on three sequentially-linked domains. In their Strategy Execution perspective they suggest that business strategy drives organisational and IT structures. The priority is to improve business processes, which places the focus on changing business structure. Similarly, the IT focus is on application development, driven by a need to support business structure.

Therefore:

Hypothesis 1: There is a positive association between the type of business strategy an organisation pursues and NOFs.

Hypothesis 2: There is a positive association between the type of IT strategy an organisation pursues and NOFs.

### **IT Strategic Alignment**

Organisations attempt to use systems that support their strategic orientations. What is ignored in the literature is the synergetic effects of ICTs when combined with other organisational elements such as business strategy (Byrd, Lewis et al. 2006). Henderson and Venkatraman (1994) believe that any failure in maximizing the advantages of ICT investment is due to the lack of alignment between IT strategy and business strategy. The alignment between IT and corporate strategy has been one of the top issues in the ICT field and there is little

doubt about its importance (Luftman and Brier 1999; Cragg, King et al. 2002; Chan, Sabherwal et al. 2006). The Society for Information Management conducts surveys to gauge the importance of various IT issues. In 2005, the number one management concern of all groups of respondents was alignment (Luftman and Kempaiah 2008). Alignment was also ranked as the top management concern in 2004 and 2003, whereas it was ranked 9th in 1994, 7th in 1990, 5th in 1986, and 7th in 1983. It shows that the issue of IT alignment has remained important over the past two decades (Chan and Reich 2007). However, most of the findings are based on qualitative research methods and no evidence could be found of operationalisation of the concept of strategic alignment in a quantitative study (Truch 2004). Strategic Alignment refers to the extent to which the IT mission, objectives, and plans support and are supported by, the organisation mission, objectives, and plans (Hirschheim and Sabherwal 2001; Chan, Sabherwal et al. 2006). Alignment involves “applying information technology (IT) in an appropriate and timely way and in harmony with business strategies, goals, and needs” (Luftman and Brier 1999). Venkatraman (1999) regards strategic alignment as supported by two basic assumptions; firstly that there exists a direct relationship between an organisation’s strategy (both business and IT) and the organisations’ administrative structure; and secondly, that this relationship is inherently dynamic. Based on the above discussion we came to the following hypothesis:

Hypothesis 3: There is a positive association between the levels of IT strategic alignment and the evolution of the attributes of NOFs.

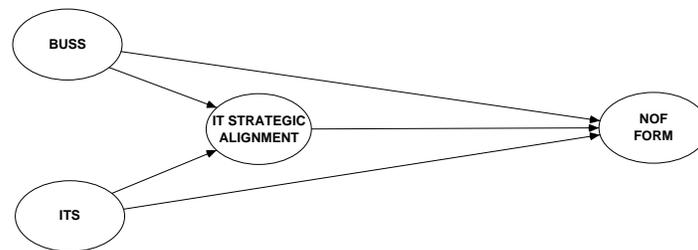


Figure 1: Initial Research Model

## OPERATIONALISATION OF CONSTRUCTS

Two constructs used in the proposed model are Strategic Orientation of Business Enterprises (STROBE) and STRategic Orientation of the Existing Portfolio of Information Systems (STROEPIS) developed by Venkatraman and Henderson (1999) and Chan (1997) respectively. STROBE is based on the “resource deployment patterns” that organisations employ to achieve their objectives. Strategic Orientation of Business Enterprises (STROBE) refers to the realised business strategy and focuses on the “resource deployment patterns” that organisations employed to achieve their objectives. In his seminal study, Venkatraman, using eight quantified characteristics of business strategy, proposed the STROBE scale to investigate the realised business strategy. These characteristics are: aggressiveness, analysis, internal defensiveness, external defensiveness, futurity, proactiveness, riskiness, and innovativeness. It is defined at the business unit level, and unlike intended strategy, STROBE employs a holistic rather than the functional approach (Venkatraman 1985).

In his seminal study, Venkatraman, using eight quantified characteristics of business strategy, proposed STROBE scale to investigate realized business strategy. These characteristics are: aggressiveness, analysis, internal defensiveness, external defensiveness, futurity, proactiveness, riskiness, and innovativeness. In aggressive posture, organisations compete with close rivals for the pursuit of market share. Analysis posture reflects the formal, analytical decision-making processes and the organizing mechanisms adopted by a particular organisation. Defensiveness reflects the entire spectrum of a business unit’s domain of operations that must be defended to realize competitive edge in the marketplace. Futurity posture focuses on the extent to which long-term considerations are reflected in the key actions of an organisation. Dimension of innovativeness captures innovativeness underlying business unit operations on some of the major spheres. Proactiveness is a reflection of the pre-emptive postures of organisation in actions such as capacity expansions, new product introduction, and acquisition of businesses. In a similar study Chan et al. (1997) developed STROEPIS to measure realized IT strategy on the same dimensions. These IT strategy typologies focus on the capabilities provided by IT to support different business strategies. Similar to STROBE, STROEPIS aims the realized strategy, hence end user or CIOs are not asked to describe documented strategies. This scale is in parallel to STROBE i.e. for each individual STROBE variable, there is a parallel variable in STROEPIS. To operationalise business strategy and IT strategy we used five dimension of strategy as follows: aggressiveness, analysis, defensiveness, proactiveness, and innovativeness and five corresponding dimensions for IT strategy. For example, IT Proactiveness refers to IT deployments used by the business unit to expedite the introduction of product/service.

Unlike business strategy and IT strategy, IT strategic alignment is a formative one. In formative constructs, the items (indicators) influence the construct. These are often called ‘causal’ indicators. This means that the measures cause the construct and that the construct is fully derived from its measurement (Freeze and Raschke 2007). Therefore, using moderation method suggested by Chan, Huff et al. (1997) the alignment level was calculated.

**RESEARCH METHODS**

To increase efforts in regard to reliability and validation and to reduce measurement errors in the instruments used in IS research, the well-known process of instrument development put forward by Churchill (1979) was adopted. This involves specifying the domain of constructs, generating a sample of items, purifying the measure, collecting further data, and assessing the validity and reliability of the measure. The approach followed in the present study is a positivist approach. At the same time, most studies on organisational variation concentrate on the population of organisations (Romanelli 1991). Therefore, one important reason for choosing the survey approach was the high level of generalizability of findings.

**Data collection**

For the final survey, the questionnaire was distributed to 3770 Australian CEOs. The contact list of CEOs was purchased from a commercial company selling contact information for research and marketing purposes. If the respondent was unable to answer some of the questions, s/he was then asked for a referral for someone else inside the organisation. All respondents were guaranteed confidentiality of their individual response. In order to maximize the response rate the survey was kept brief and specific. As exploratory factor analysis (EFA) would play as a major technique to investigate the underlying constructs in this research, therefore, in an effort to achieve an acceptable case-to-variable result, all 3770 CEO’s email addresses available from the rented database, were utilized. Hair et al. (2006) suggested a case-to-variable ratio of 5:1 to guarantee a reliable EFA procedure; however, some researchers have worked with ratios as low as 2:1. Similar to the focus group, the HTML version of the final questionnaire was developed. The same as the focus group, the HTML version of the questionnaire was developed and uploaded on the official website of RMIT. Items were measured using a five-point Likert-type scale with anchors from “strongly agree” to “strongly disagree”.

Therefore e-mails were sent with an invitation to participate in the survey. An initial e-mailing that identified the purpose of the study, a request to participate, and an opt-out feature was sent to all potential respondents. The survey itself was located on RMIT Web server with monitoring to prevent duplicate sets of responses, and a Web link to this server was provided in the invitation. The set of e-mails that were selected from the database contained 522 incorrect or otherwise invalid addresses. In all, 3248 e-mails (86 percent) were sent to valid e-mail addresses. Usable responses totalled 312, thus, the final response rate was 9.6 percent.

Table 1. Summary of the Characteristics of the Organisations

		Frequency	Percent				
<b>Type of Industry</b>	Communications Services	29	9.29	<b>Number of Employees</b>	less than 999	181	58.01
	Electricity, Gas, and Water Supply	7	2.24		1000 to 9999	96	30.77
	Construction	37	11.86		10000 to 99999	25	8.01
	Government Administration	39	12.5		Not Known	7	2.24
	Finance and Insurance	51	16.35		Total	309	99.04
	Health and Community Services	39	12.5		System	3	0.96
	Manufacturing	82	26.28				
	None	25	8.01				
	Total	309	99.04				
	System	3	0.96				
	<b>Total</b>	<b>312</b>	<b>100</b>			<b>312</b>	<b>100</b>

The response rate is acceptable for email surveys (Dillman 2000). While a higher response rate is desirable in any research endeavour, this response rate is reasonable, given the comprehensiveness, length of the instrument, and the target respondents. Table 1 depicts the characteristics of the organisations studied.

**Second-order Factor Model**

A second-order factor models present when first-order factors are explained by some higher order factor structure. To operationalise STROBE, we used five dimensions used by Venkatraman. Parallel to these dimensions, we employed five dimensions for STROEBIS. Consequently, the final instrument was developed according to these dimensions. Figure 2 depicts the second-order factor models for STROBE and STROEBIS.

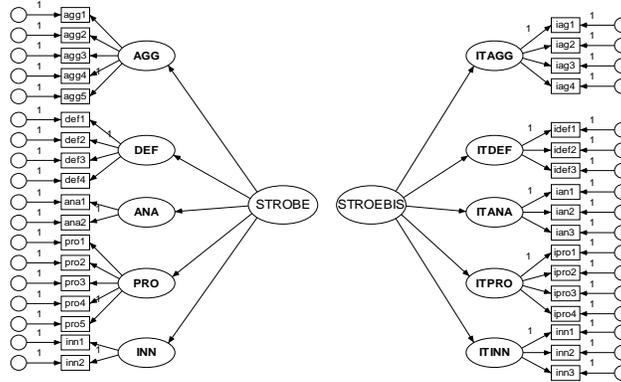


Figure 2: The Second-order Factor Model

As it is clear from the Figure 2, both of STROBE and STREBIS can not be directly measured. In dealing with such complex constructs, it is commonplace to combine the indicator variables in some additive manner to measure the construct. The derived composite variables are then treated as continuous variables and can be used as indicator variable in the model. For doing so, factor score regression weights were used. Hence the estimated composite scores ( $\xi$ ) for STROBE and STREBIS were computed using the following formula developed by Jöreskog and Sörbom (1989).

$$\xi = \omega X$$

where  $\omega$  are the factor score regression weights for each of the indicator variables (or items) that make up the composite and X are the subjects' observed indicator variable scores (or item scores). The proposed model after inclusion of composite score is shown in Figure 3. After computing the composite scores for STROBE and STREBIS, an exploratory factor analysis (EFA) was conducted on all items including nineteen items, used to assess NOFs, and composite scores for STROBE and STROEBIS to identify the underlying constructs.

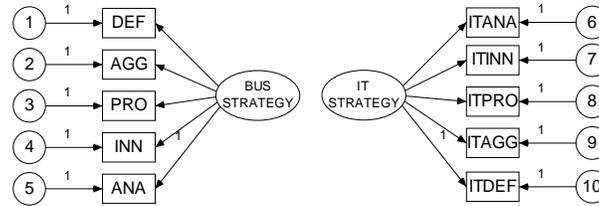


Figure 3: STROBE and STROEBIS Constructs Using Composite Scores

Table 2 represents the factor loadings using Maximum Likelihood with eigenvalues of 1. With a minimum factor loading of 0.50, three factors were identified. Those items with factor loadings greater than 0.50 on two or more factors were dropped from the final instrument. Item ANA was only slightly below the recommended level. It was decided to keep this item. The resulting factors confirm with the theory for both of STROBE and STROEBIS.

Table 2. Extraction Method: Maximum Likelihood  
Rotation Method: Oblimin with Kaiser Normalization

	DEF	AGG	PRO	INN	ANA	N11	N2	N4	N3	N5	N6	N7	ITAG	ITIN	ITPR	ITAN	ITDE
<b>Factor 1</b>	<b>0.98</b>	<b>0.91</b>	<b>0.53</b>	<b>0.53</b>	<b>0.47</b>												
<b>Factor 2</b>						<b>0.85</b>	<b>0.797</b>	<b>0.74</b>	<b>0.73</b>	<b>0.64</b>	<b>0.58</b>	<b>0.5</b>					
<b>Factor 3</b>													<b>0.85</b>	<b>0.8</b>	<b>0.74</b>	<b>0.70</b>	<b>0.7</b>

## DATA ANALYSIS

To test the research model, we employed Structural Equation Modelling (SEM). Both measurement (construct validity) and structural (hypothesis testing) models were estimated using AMOS 6.0. Firstly we describe our analysis on the measurement model and later on the structural model will be described.

### The Measurement Model

Internal consistency of measures, i.e., their unidimensionality and their reliability are addressed in the measurement model. The main purpose of the measurement model is twofold: (a) to determine the number of indicators to use in measuring each construct, and (b) to identify which items to use in formulating each indicator (Hair, Black et al. 2006). The measurement model was assessed for three latent constructs (Figure 1). Due to sensitivity to sample size (Harwick and Barki 1994), along with chi square index, we used other measures for goodness of fit such as comparative fit index (CFI) and goodness of fit index (GFI). Here, the details of measurement model for business strategy factor are discussed. The same steps were followed for the rest of the factors.

### Business Strategy

STROBE was hypothesized to be captured using five indicators as shown in Figure 3. AMOS program was employed to estimate the model. From now onwards, this model is referred as Model 1. The resulting estimates were: Chi-square 75.634 with 5 degrees of freedom. Table 3 presents the results of testing model of STROBE. As it is clear from this table, Model 1 did not fit well into the data. The value of RMSEA= 0.259, CFI, GFI all were indicative of a poor fit of the model to the data. Thus, it was apparent that some modification in specification was needed in order to develop a model that would better fit the data. To pinpoint possible areas of misfit the modification indexes (MIs) in AMOS output was examined. The modification indices showed that if a covariance between the errors terms e4 and e5 was freed to be estimate then the chi square would be improved by about 59.074. Model 2 in Table 3 represents the parameter estimates after the correlation between e4 and e5. All statistics improved and were higher than the acceptable level.

Table 3. Measurement Model for STROBE

	<b>NPAR</b>	<b>CMIN</b>	<b>DF</b>	<b>P</b>	<b>Normed Chi-square</b>	<b>GFI</b>	<b>AGFI</b>	<b>RMSEA</b>	<b>CFI</b>	<b>TLI</b>
<b>Model 1</b>	10	75.634	5	0.000	15.127	0.89	0.669	0.259	0.88	0.759
<b>Model 2</b>	11	6.859	4	0.144	1.715	0.98	1.000	0.058	1.00	0.988

Table 4 represents the AMOS estimates and significance levels for five indicators in STROBE factor. Turning to the factor loading estimates, all estimates were statistically significant.

Table 4. Standardized Regression Weights for STROBE

Indicator		Factor	SMC	P
AGG	<---	STROB E	0.90	***
INN	<---	STROB E	0.52	***
DEF	<---	STROB E	0.99	***
ANA	<---	STROB E	0.45	***
PRO	<---	STROB E	0.52	***

Similar to STROBE, the measurement model was conducted for It strategy and NOFs. Table 5 represents the results of measurement model for STROEPIS and NOFs.

Table 5. Measurement Model for STROEPIS and NOFs

	<b>CMIN</b>	<b>DF</b>	<b>P</b>	<b>Normed Chi-square</b>	<b>GFI</b>	<b>AGFI</b>	<b>RMSEA</b>	<b>CFI</b>	<b>TLI</b>
<b>STROEPIS Model</b>	17.951	10	0.072	1.795	0.977	0.935	0.061	0.989	0.976
<b>NOFs Model</b>	7.006	3	0.056	2.335	0.987	0.937	0.08	0.992	0.974

The p-value associated for both factors in Table 5 were greater than 0.05 suggesting that the model is good fit. Also GFI, CFI, and RMSEA all suggested that the model was good fitting model (Litwin 1995). Also All loadings were significant at  $P < 0.001$ . In summary, the measurement model provides strong empirical support for STROBE, STROEPIS, and NOFs factors and ensures of the convergent validity and uni-dimensionality of the model.

### Structural Model

After measurement model, we examined the structural model. As it is shown in Figure 1, there are three independent factors in this model. Each of these factors has single-headed arrows pointing to NOFs, indicating that it is an independent factor. Prior to testing hypotheses, the goodness of fit of the model should be obtained. Based on the results of the measurement model, the full structural model was tested. The AMOS output for the first model showed the following results:  $\chi^2 = 299.69$ , with 199 degrees of freedom, CFI= 0.89 GFI= 0.95, RMSEA= 0.049. While the statistics indicated of a relatively good fit, the value of variance for defensiveness (e1) was not significant ( $p = 0.528$ ). CFI was slightly lower than the acceptable level. By dropping this item from the model, the model still remained good without any non-significant parameters. These results indicated a good fit between the model and the data, particularly when considering the adverse impact which a small sample size has on these fit measures (Segars and Grover 1993). The results of the multivariate test of the structural model (final model) showed that the model as a whole explained 39 % of the variance in the NOFs. The variances explained by all endogenous latent variables were reasonable ( ). The percentages of variance explained implied a satisfactory and substantive model (Kline 2005). So it could be concluded that the overall model fit is acceptable and the path estimates could be employed for hypothesis testing. After ensuring that the model fitted well, it was time to test the hypotheses. The hypotheses can be evaluated based on the size and significance of the standardized path coefficients. Figure 4 schematically shows the paths, their weights and the significance levels. As it is shown in this figure the level of IT alignment was positively and significantly related to the NOFs (at 1 percent significant level). Also there was a significant path from STROEPIS and NOFs (at 5 percent significant level). There was no significant association between STROBE and NOFs. As shown in

Figure 4, the overall fit index CFI (0.90), GFI= 0.94 and the  $\chi^2 = 275.043$  with degrees of freedom ratio (1.55) show that the proposed model fits the data. Two standardized path coefficients were significant at the 1 percent level of significance, and three coefficients were significant at the 5 percent level of significance. This indicates that seven relationships hypothesized were supported by the SEM analysis. The rest of relationships hypothesized were not supported. The structural model results provided modest support for the theoretical model. This indicates the importance of the alignment between business and IT strategy toward organisational changes.

## DISCUSSION AND CONCLUSION

In this study, a conceptual model of the IT strategic alignment impact on NOFs was developed and tested. The structural model used to test the model provided modest support for the theoretical model. As previously mentioned, the empirical study supported all the hypotheses except the relationship between business strategy (STROBE) and the evolution of attributes of the NOFs. Results from this study uncovered several implications. First, the level of strategic alignment was significantly correlated with the attributes of NOFs. The current study provided an explanation for the way the IT strategic alignment could ultimately affect the evolution of the attributes of NOFs. This is consistent with previous researches in IS research. In this regard, Henderson and Venkatraman (2000) argue that strategic alignment can influence organisational transformation. They suggest that strategic alignment in a descriptive sense and using the value created by IT is able to affect the organisational dimensions.

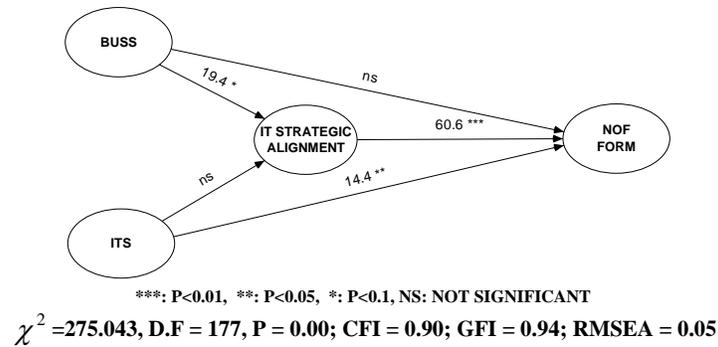


Figure 4 The Structural Model of Hypothesized Relationships

One thing to note is that the relationship between the level of strategic alignment and horizontal coordination and vertical control as two attributes of NOFs. It meant that an organisation with high level of alignment between its business strategy and IT strategy would benefit of better communication and easier coordination among different organisational units. This would help much easier and faster flow of information within organisation. Reich and Benbasat (1991) showed that shared information among groups was the strongest predictor of the social dimension of alignment. When shared information was high, communication between the two groups was strategic and frequent, and the result was a high level of alignment. It should be noted that a major influence on the evolution of NOFs was the level of alignment between IT and business strategies. On the other hand, no significant relationship was found between business strategy and any of attributes of NOFs. However, compared to business strategy, IT strategy had significant relationships with categories of attributes in forms of proactiveness and aggressiveness. In aggressive strategy, organisations attempt to build their strategy on innovation and/or market development, or simultaneously investment to improve their market position and share (Venkatraman 1989). Now the support to this profile provided by ICT would lead to organisational transformation as indicated by the present research model. In another word, IT provides facilities to support the strategy of expanding the market share as a major path towards to achieve profitability. This provision would lead to promoting communication culture and improving the control process.

Regarding proactiveness, it should be noted that this trait reflects proactive behaviour in relation to participation in emerging industries, continuous search for market opportunities and experimentation with potential responses to changing environmental trends (Chan, Huff et al. 1997). According to this trait, organisations that pursue this strategy search for new opportunities which may or may not be related to their current line of operation. Put differently, they are first to introduce new products and services and are a step ahead of the competition (Powell and Dent-Micallef 1997). In this regard, the research model shows the importance of IT support to pursue such a strategy. Instead of the proactive strategy itself, the models showed that the support provided by IT was the influencing factor over the attribute of horizontal coordination. Therefore the structural model indicates that IT strategy has more influence on the evolution of attributes of NOFs. This is in accordance with Schumpeter's theory in which technological innovation have an impact on forming new organisations. Also the IT support can be in different t forms from helping organisation to introduce products and services to the market to helping organisation to monitor the changes in the marketplace.

However it is worth noting that the alignment model can be considered as a contingency model (Weiss, Thorogood et al. 2006). In this regard, different profiles of IT alignment can be linked to business strategy and consequently it might lead to different levels of alignment. Therese profiles differ in strategies, criteria, capabilities. However we attempted to show a parsimonious yet powerful model to address this gap. It is a working model and does not claim to be comprehensive. Both researchers and practitioners can take benefit of the research instrument and model. Researchers can use the model and instrument in future research endeavours. Managers can chart the transformation of their organisations considering the importance of the alignment between business and IT strategy.

## REFERENCES

- Bradley, S. P. & Nolan, R. L. 1998. Capturing Value in the Network Era. Sense and Respond. S. P. Bradley and R. L. Nolan. Boston, Massachusetts, Harvard Business School Press.
- Brynjolfsson, E. & Hitt, L. M. 2000. "Beyond Computation: Information Technology, Organizational Transformation and Business Performance." *Journal of Economic Perspectives*, Vol 14 No 4, pp 23-48.
- Byrd, T., A., Lewis, B., R., et al. 2006. "The leveraging influence of strategic alignment on IT investment: An empirical examination." *Information & Management*, Vol 43 No 3, pp 308-321.

- Chan, Y. E., Huff, S. L., et al. 1997. "Business Strategic Orientation, Information Systems Strategic Orientation, and Strategic Alignment." *Information Systems Research*, Vol 8 No 2, pp 125-151.
- Chan, Y. E. & Reich, B. H. 2007. "State of the Art IT alignment: what have we learned?" *Journal of Information Technology*, Vol 00 No, pp 1-19.
- Chan, Y. E., Sabherwal, R., et al. 2006. "Antecedents and Outcomes of Strategic IS Alignment: An Empirical Investigation." *IEEE Transactions On Engineering Management*, Vol 53 No 1, pp 27-47.
- Chan, Y. E., Huff, S. L., Barclay, D. W. & Copeland, D. G. (1997). "Business Strategic Orientation, Information Systems Strategic Orientation, and Strategic Alignment." *Information Systems Research*, Vol 8 No 2, pp 125-151.
- Churchill, G. A. 1979. "A Paradigm for Developing Better Measures of Marketing Constructs." *Journal of Marketing Research (JMR)*, Vol 16 No 1, pp 64-73.
- Cragg, P., King, M., et al. 2002. "IT alignment and firm performance in small manufacturing firms." *Journal of Strategic Information System*, Vol 11 No, pp 109-132.
- Davidow, W. H. & Malone, M. S. 1992 *The Virtual Organization*, Harper Business, New York.
- Dillman, D. A. 2000 *Mail and Internet Surveys: The Tailored Design Method*, Wiley, New York.
- Dutton, W. H. 1999. *The Virtual Organization: Tele-Access in Business and Industry. Shaping organization form*. G. Desanctis and J. Fulk. California, Sage Publications.
- Foss, N. 2002. "Introduction: New Organization Forms- Critical Perspective." *International Journal of the Economics of Business*, Vol 9 No 1, pp 1-8.
- Freeze, R. D. & Raschke, R. 2007. "An Assessment of Formative and Reflective Constructs in IS Research." Retrieved 30 July, 2007, from <http://csrc.lse.ac.uk/asp/aspecis/20070055.pdf>.
- Fulk, J. & Desanctis, G. 1999. *Articulation of Communication Technology and Organization Form. Shaping organization form*. G. Desanctis and J. Fulk. California, Sage Publications: 5-31.
- Hair, J. F. 2006 *Multivariate data analysis*, Pearson Prentice Hall, Upper Saddle River, N.J.
- Hair, J. F., Black, W. C., et al. 2006 *Multivariate data analysis*, Pearson Prentice Hall, Upper Saddle River, N.J.
- Harris, C. 2000. "The Strategy/Structure Debate: An Examination of The Performance Implications." *Journal of Management Studies*, Vol 37 No 4, pp 587-603.
- Harwick, J. & Barki, H. 1994. "Explaining the role of user participation in information systems use." *Management Science*, Vol 40 No 4, pp 440-465.
- Heckscher, C. 1994. *Defining The Post- Bureaucratic Type. The Post- Bureaucratic Organization*. C. Heckscher and A. Donnellon. Thousand Oaks, CA, Sage: 14-62.
- Henderson, J. C. & Venkatraman, N. 1999. "Strategic alignment: Leveraging information technology for transforming organizations." *IBM Systems Journal*, Vol 38 No 2/3, pp 472-485.
- Heydebrand, W. V. 1989. "New Organizational Forms." *Work & Occupations*, Vol 16 No 3, pp 323-346.
- Hirschheim, R. & Sabherwal, R. 2001. "Detours in the Path toward Strategic Information Systems Alignment." *California Management Review*, Vol 44 No 1, pp 87-108.
- Jöreskog, K. G. & Sörbom, D. 1989. *LISREL 7 User's Reference Guide*, Scientific Software, Inc., Chicago.
- Keil, T., Eloranta, E., Holmstrom, J., et al. 2001. "Information and communication technology driven business transformation." *Computers in Industry*, Vol 44 No, pp.
- Kline, R. B. 2005 *Principles and practice of structural equation modeling*, Guilford Press, New York.
- Litwin, M. S. 1995 *How to Measure Survey Reliability and Validity*, SAGE Publications, London.
- Luftman, J. & Kempaiah, R. (2008). "Key Issues for IT Executives 2007." *MIS Quarterly Executive*, Vol 7 No 2, pp 99-112.
- Luftman, J. N. & Brier, T. 1999. "Achieving and sustaining business-IT alignment." *California Management Review*, Vol 42 No 1, pp 109-122.
- Mintzberg, H. 1990. "The design school: Reconsidering the basic premises of strategic management." *Strategic Management journal*, Vol 11 No, pp 171-195.
- Moore, K. & Yuen, S. 2001. "Management accounting systems and organizational configuration: a life-cycle perspective." *Acc. Organ. Society*, Vol 26 No 45, pp 351-389.
- Nohria, N. & Berkley, J. D. 1994. *The Virtual Organization: Bureaucracy, Technology, and the Implosion of Control. The Post-Bureaucratic Organization: New Perspectives on Organizational Change*. C. Heckscher and A. Donnellon. Thousand Oaks, CA, Sage: 108-128.
- NOIE 2005. *Achieving Value from ICT: Key Management Strategies*, Commonwealth of Australia, Canberra, ACT.

- Pinsonneault, A. & Kraemer, K. 1997. "Middle management downsizing: An empirical investigation of the impact of information technology." *Management Science*, Vol 43 No 5, pp 659-679.
- Piore, M. 1994. *Corporate Reform in American Manufacturing and the Challenge to Economic Theory*. Information technology and the Corporation of the 1990s. T. J. Allen and M. S. Scott Morton. New York, Oxford University: 43-60.
- Powell, T. C. & Dent-Micallef, A. (1997). "Information Technology As Competitive Advantage: The Role Of Human, Business, And Technology Resources." *Strategic Management Journal*, Vol 18 No 5, pp 375-403.
- Qian, Y., Roland, G., et al. 2006. "Coordination and Experimentation in M-Form and U-Form Organizations." *The Journal of Political Economy*, Vol 114 No 2, pp 366-402.
- Rajan, R. G. & Wulf, J. 2006. "The Flattening Firm: Evidence from Panel Data on The Changing Nature of Corporate Hierarchies." *Review of Economics & Statistics*, Vol 88 No 4, pp 759-773.
- Reich, B. H. & Benbasat, I. 2000. "Factors that Influence the Social Dimension of Alignment between Business and Information Technology Objectives." *MIS Quarterly*, Vol 24 No 1, pp 81-113.
- Reich, R. 1991 *The Work of nations: preparing ourselves for 21st century capitalism*, Knopf, New York.
- Romanelli, E. 1991. "The Evolution of New Organizational Forms." *Annual Review of Sociology*, Vol 17 No 1, pp 79-103.
- Segars, A. H. & Grover, V. 1993. "Re-examining perceived ease of use and usefulness: a confirmatory factor analysis." *MIS Quarterly*, Vol 17 No 4, pp 517-525.
- Sim, A. B. & Teoh, H. Y. 1997. "Relationships between business strategy, environment and controls: A three country study." *Journal of Applied Business Research*, Vol 13 No 4, pp 57-65.
- Truch, E. 2004 *Knowledge Orientation in Organizations*, Ashgate Publishing Company, Burlington.
- Venkatraman, N. (1989). "Strategic Orientation of business Enterprises: the construct, dimensionality, and measurement." *Management Science*, Vol 35 No 8, pp 942-962.
- Walker, O. C. & Ruekert, R. W. 1987. "Marketing's Role in the Implementation of Business Strategies: A Critical Review and Conceptual Framework." *Journal of Marketing*, Vol 51 No July, pp 15-33.
- Weiss, J. W., Thorogood, A. & Clark, K. D. (2006). "Three IT-Business Alignment Profiles: Technical Resource, Business Enabler, and Strategic Weapon." *Communications of the Association for Information Systems*, Vol 18 No, pp 676-691

## **COPYRIGHT**

Ahmad Abareshi, Bill Martin and Alemayehu Molla © 2008. The authors assign to ACIS and educational and non-profit institutions a non-exclusive licence to use this document for personal use and in courses of instruction provided that the article is used in full and this copyright statement is reproduced. The authors also grant a non-exclusive licence to ACIS to publish this document in full in the Conference Papers and Proceedings. Those documents may be published on the World Wide Web, CD-ROM, in printed form, and on mirror sites on the World Wide Web. Any other usage is prohibited without the express permission of the authors