

# A Study into the Relationship between IT Governance Domain and Business - IT Alignment in Managing IT Investment

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## **Abstract**

This study examines the relationship between IT governance domain and business - IT alignment. This study highlights different IT governance domain's contribution and business - IT alignment relationship in telecommunication service provider companies in Sri Lanka. There is a positive moderate level relationship between IT governance and business - IT alignment, the business strategy and IT strategy positively contribute to the business - IT alignment and there is a positive significant relationship exists between business strategy and IT strategy. The study concludes in general that governance domains positively contribute to the IT governance.

**Keywords:** IT Governance, Domain, Relationship, Alignment

## **Introduction**

Managing IT investment should be a key concern to business and IT executives as it demonstrates the effectiveness and add business value of IT. IT governance practices will help to optimize IT enabled investments, ensure service delivery and provide a measure to judge against when things go wrong. By doing this research the researcher try to find out the contribution of five governance domain for the total IT governance and find the relationship between business-IT alignment and IT governance. Organizations are rapidly changing more and more and dependent on IT investments in the current knowledge-based economy. In a typical organization large amounts of resources have been and will continue to be invested as IT investments. IT governance determines the allocation of IT investment within a firm as a result it plays a vital role in IT investment performance. Smallen & Leach (2002) mentioned that the reason for the high growth rate in IT investment was that expectations were too high, especially in two sectors of the economy, telecommunications services and the dot-com service sector. Investments in IT assets are rapidly growing and managers often worry that the benefits of IT investments might not be high as they expected. Gunasekaran et al. (2001) highlighted that well-managed IT investments that are carefully selected and focused on meeting business needs can have a positive impact on an organization's performance. Likewise poor investments that are inadequately justified or

whose costs, risks, and benefits are poorly managed can hinder and even restrict an organization's performance. Therefore getting business value from IT investments and measuring that values are becoming importance governance domains.

## IT Governance Domain

Information Systems Audit and Control Association (ISACA) defines IT governance as: *"The responsibility of executives and the board of directors; consists of the leadership, organizational structures and processes that ensure that the enterprise's IT sustains and extends the enterprise's strategies and objectives"*. IT Governance Institute (ITGI) and their partner institution ISACA (Information System Audit and Control Association) stands on by proposing that IT governance should consist of five domains (see figure 1) namely *Strategic alignment* - focuses that the IT governance should make sure relation with business and IT plans; defining, maintaining and validating the IT value proposition; and aligning IT operations with enterprise operations. *Value delivery* - ensuring that IT delivers the promised benefits against the strategy. *Risk management* - consist of IT risk awareness by senior corporate officers, a clear understanding of the enterprise's treatment for IT risk. *Performance measurement* - simply tracks and monitors IT strategy implementation, IT project completion, resource usage, process performance and service delivery. *Resource management* - optimal investment and the proper management of critical IT resources like applications, information, infrastructure and people.

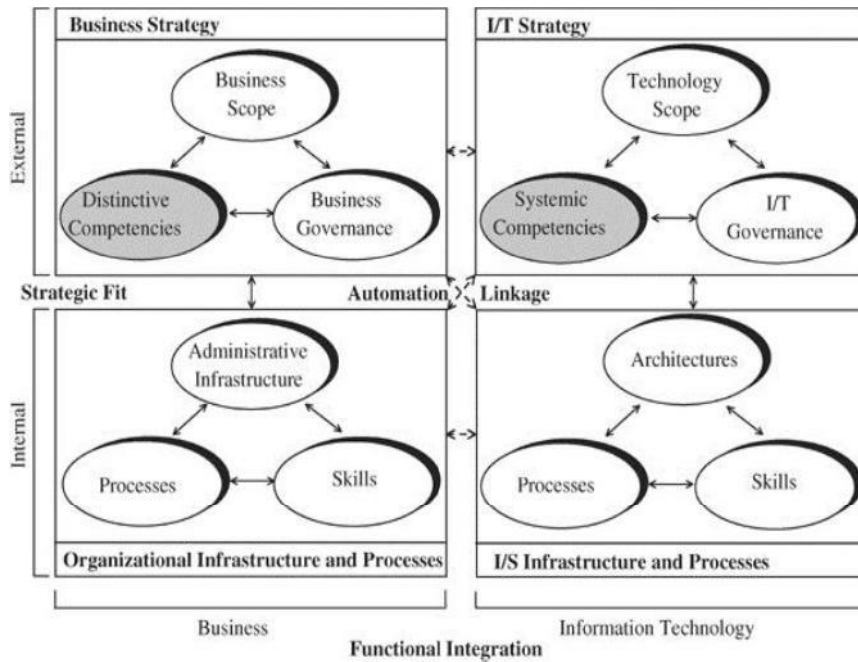


Figure 1: IT Governance Domain

## Business - IT Alignment

Gilbert Silvius (2007) defines business - IT alignment as "the degree to which the IT applications, infrastructure, organization business strategy and processes enables and shapes, as well as the process to realize this". In some other cases, alignment is highlighted as the communication and mutual understanding between IT and business managers. Further alignment is also believed as the match between the type of IS/IT and the structure or culture of an organisation. But simply alignment is defined as the mutual shaping of business strategy and IT strategy in the organization.

In spite of these different viewpoints, the Strategic Alignment Model (SAM) which was introduced by Henderson and Venkatraman in 1993 provides in many research as the conceptual starting point. Henderson & Venkatraman, (1993) argued that the failure to realize the value of IT investment is due to the lack of alignment between business strategy and IT strategy in an organization. Therefore they initiated the SAM which tries to show how business can benefit from IT, and how IT can be used to support new business strategies. Figure 2 shows the Strategic Alignment Model that can be employed as a link point between business managers and IT managers which defines and shows the roles of each.



**Figure 2:** Strategic Alignment Model (SAM)

Adopted: Henderson and Venkatraman (1993)

SAM depends on two main concepts thus strategic fit and functional integration. Strategic fit is the interrelationship between external and internal components or in another word it is the link between strategy and structure. Strategic fit ensures that the harmony between the strategy and the internal resources, whether it is an IT strategy or business strategy. Strategic fit synchronizes between the vision and plans made by the management and the internal resources which work to achieve these goals. On the other hand functional integration is the integration between Business and IT.

SAM is consists of four domains such as business strategy, organizational structure, IT strategy, and IT infrastructure. Business and IT Strategy (external domains) include scope, competences, and governance. On the other hand organizational structure and IT infrastructure (internal domains) contain architecture, skills and process. Under business strategy, business scope focuses on the markets, products, customers, and locations where a

company tries to attract the buyers, potential competitors and suppliers who influence the competitive business environment. Distinctive competence includes the critical success factors and core competencies that give a firm with a possible competitive edge such as brand, research, manufacturing, product development, cost, price, and sales distribution channels.

Business governance focuses how the relationship between management stakeholders, board of directors, government regulations, and how the firm handles their relationships and association with strategic partners. Organizational structure includes the way the company arranges its businesses. Examples include central, decentral, horizontal, matrix, vertical, geographic and functional. Processes enlighten how the firm's business activities (work performed by employees) function or flow. Skills focus on HR concerns such as how to hire, fire, motivate, train, and educate.

Technology scope includes key information applications and technologies such as expert systems, BPMS, electronic imaging that support the business strategy. Systematic competence includes IT strategy attributes that contribute to support or create new strategies, such as flexibility and system reliability. IT governance focuses how the authority for resources, risk, and responsibility for IT is shared between business partners, IT management and service providers. IT architecture includes the technology priorities, policies, and choices that allow applications, software, hardware, networks, and data management to be integrated into a solid platform. Processes cover practices and activities for the development, maintenance and operations schedule and processes. Skills include IT human resource considerations like hire, fire, motivate, train and educate.

## **Objective of the Research**

The objective of this research study is to find out the relationship between IT governance domain and business - IT alignment in managing IT investment for the telecommunication service provider companies in Sri Lanka.

## **Research Questions**

- What is the nature of relationship between IT governance domain and business-IT alignment?
- What extent the different governance domains are contributing for IT governance?
- How the business strategy and IT strategy contribute to the Business - IT Alignment?

## **Literature Review**

In the past, a substantial number of researches have been done in area of IT governance domain and business - IT alignment. In most of the studies, it is obvious and confirmed that firms with highest business-IT alignment were better in their performance when compared

to firms with low alignment. The business-IT alignment's conceptualization and measurement vary based on the stream of research. For instance, some studies highlighted alignment as the leveling of maturity in the business and IT domain. Example, Gu et al. (2008) mentioned firms with good IT governance can realize two to three times the value from their IT investments compared to an average firm and firms with poor IT governance obtain little return from their IT investments. Haes & Grembergen (2008) stated that organisations with more mature IT governance practices likely obtain a higher degree of business-IT alignment maturity.

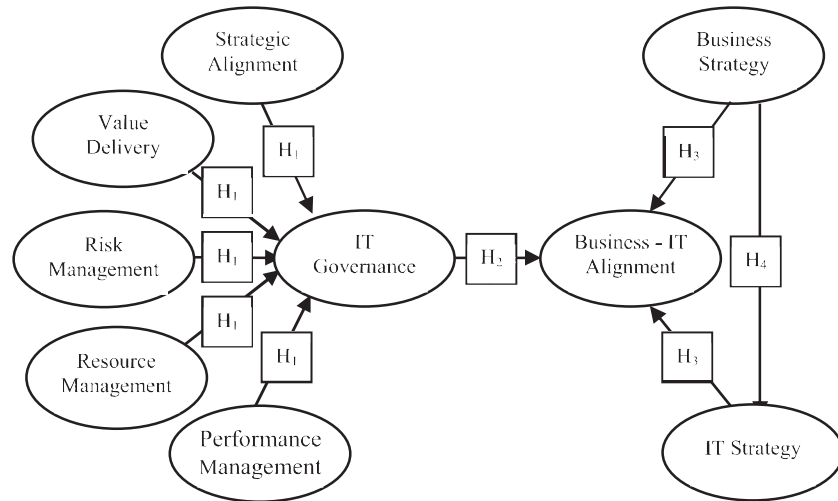
The IT Governance Institute (2005) revealed that getting business value from IT and measuring that value are the important governance domains. Arafat (2007) stated that alignment between business strategy and IT strategy enables efficient and strategic use of IT to obtain and sustain competitive advantage. Luftman (2000) mentioned that alignment addresses both how IT is in harmony with the business and how the business should or could be in harmony with IT. Further Shamekh (2008) concluded that bridging the alignment gap between business strategy and IT strategy will help organizations to achieve and sustain strategic alignment.

Nurcan et al. (2008) mentioned that, business-IS alignment and decision making mechanisms serve each other: strategic alignment is well performed when leaders make adequate decisions on time and strategic alignment facilitates the decision making process related to the information system and business processes. In Der Maur et al. (2009) highlighted that companies that achieved business-IT alignment have built strategic competitive advantage, increased visibility, efficiency, and profitability. Investments in IT are rising expansively and business managers often worry that the benefits of IT investments might not be as high as expected. In early days implementing IT in the business was seen as a technical support function and was typically handled by finance departments.

Moreover, In Der Maur et al. (2009) mentioned in their research that retail banks continuously struggle with the key issues of controlling their IT-value and achieving business-IT alignment and need a framework to tackle the business-IT alignment mystery. Nurcan et al. (2008) argued that it is essential to understand the dependencies and implications between IT governance and alignment in order to improve both as a whole and to enhance the sustainability of Information System. Hosseinbeig et al. (2011) stated that the combination of strategic alignment and IT governance may be an effective strategic initiative allowing organizations to effectively utilize IT and achieve competitive advantage.

## **Conceptual Model and Hypothesis**

The conceptual model shown in the figure 3 was constructed from the extensive literature support in this research domain. It depicts the five contributing domains of IT governance. Further it shows the business strategy and IT strategy both contribute to the Business-IT alignment. The hypotheses for these variables have been listed below.



**Figure 3: Conceptual Model**

H<sub>1</sub>: Governance domains are reliable and positively contribute to IT Governance

H<sub>2</sub>: There is a significant relationship between IT governance and Business - IT Alignment.

H<sub>3</sub>: Business Strategy and IT Strategy positively contribute to Business- IT Alignment.

H<sub>4</sub>: There is a relationship between Business Strategy and IT Strategy.

### Research Design and Methodology (RDM)

Face to face interview with structured questionnaire was used to collect the data. This research consists of primary sources of data. The questionnaire was issued to one person such as CEO / Head of IT / IT manager/ Senior Manager in IT operation in each company. During the data collection small interview kind of discussion held when the respondent needed some sort of assistance in answering the questionnaire. IT governance consists of five domains such as strategic alignment, value delivery, risk management, resource management and performance management. There were 5 questions listed under each domain by looking best principles and practices to form the questions for IT governance. Henderson and Venkatraman Strategic Alignment Model (SAM) model was used to form the business - IT alignment questions. SAM model's each component was converted into 6 questions and categorized under two categories thus business strategy and IT strategy in the questionnaire. Likert scale (5 point) was used ranging from 1-Strongly disagree 5 - Strongly agree to measure each domain's and business - IT alignment questions. Population for this research was all the telecommunications related service provider companies in Sri Lanka. Data were collected only from 14 telecommunication service provider companies in this sector. The researcher contacted the population companies for the data collection. Company's data were gathered based on the convenient sampling method, because some of the

companies were not participated in this survey due to several reasons (information privacy, corporate policy and etc.). Collected data were entered into the statistical package SPSS for the data analysis purpose. Reliability test, factor analysis (under principal component analysis) and correlation analysis were conducted for the variables.

## **Results and Discussion of Findings**

H<sub>1</sub>: Governance domains are reliable and positively contribute to it governance.

The IT governance's five domains have the followings outputs. Strategic Alignment (0.662), Risk Management (0.664) and Performance Management (0.692) have positive and acceptable reliability. On the other hand Value Delivery (-1.488) and Resource Management (0.387) has negative and less reliability respectively. Therefore in this analysis the IT governance represent the contribution from only the Strategic Alignment, Risk Management and Performance Management. The reason for getting negative value for the value delivery domain is that most of its questions were in an optimization and value deliverables from IT resources. In Sri Lankan context since these organization just introduced these IT governance practices, most of the companies were not in a position to fully optimize or get value from their IT resources. Further the reason for getting less reliability value for the domain resource management is most of this domain questions focused the IT resource management in an optimized level.

H<sub>2</sub>: There is a significant relationship between it governance and business - it alignment.

From the extensive literature survey the researcher's assumption was there is a significant relationship between IT governance and Business-IT alignment. Many researchers stated that, IT governance and Business - IT alignment has significant association between them. But from this correlation analysis there is a positive moderate level relationship that is  $r = 0.522$  exist between IT Governance and business - IT alignment. It is obvious that the improved IT governance would lead to a better business-IT alignment. But in the Sri Lankan context, especially in the telecommunication service provider company sector, there are a few companies which have a well-established IT governance practices. Most of the companies are just started to optimize these IT governance best practices.

H<sub>3</sub>: Business strategy and it strategy positively contribute to business- it alignment.

The 12 components of Strategic Alignment Model (SAM) were converted into meaningful questions in the questionnaire. These questions were categorized 6 questions under business strategy and IT strategy in the questionnaire. From this analysis business strategy  $\alpha = 0.643$  and IT strategy  $\alpha = 0.633$ reliability values. Therefore it can be concluded that the business strategy and IT strategy are positively contribute to form the variable Business- IT Alignment. In Sri Lankan context, the business strategy and IT strategy are in a good position since this sector is becoming highly competitive industry. There are several market segment and market opportunities in this sector. To capture the customers, the telecommunication service provider companies are using different business and IT strategies. Further the booming of telecommunication infrastructure development, emerging new business initiatives, ICT for rural development, different ICT projects, mass involvement of social

media activities and m-commerce activities urged the telecommunication service provider companies to form different business and IT strategies that ultimately tend to bring a better business-IT alignment.

H<sub>4</sub>: There is a relationship between business strategy and it strategy.

Business strategy and IT strategy are the vital aspect and managers always use these two as a strategic weapon to attack their competitors. There is a dilemma whether IT strategy derived from business strategy or vice versa. But these two strategies are vital to run the business in the complete environment. From the extensive literature survey there are some literature evidences which made the researcher to hypothesis that there should be a relationship between business strategy and IT strategy. Further it is obvious that, business strategy and IT strategy highly contribute to form the business - IT alignment in the organization. From this research study the correlation value  $r = 0.750$  derived from the analysis. Therefore it can be concluded that there is a positive significant relationship lies between business strategy and IT strategy. As it is mentioned in the previous hypothesis (H<sub>3</sub>) that, the business strategy and IT strategy positively contribute to form the business-IT alignment. Further it is also apparent that there is a strong positive relationship is confirmed between business strategy and IT strategy.

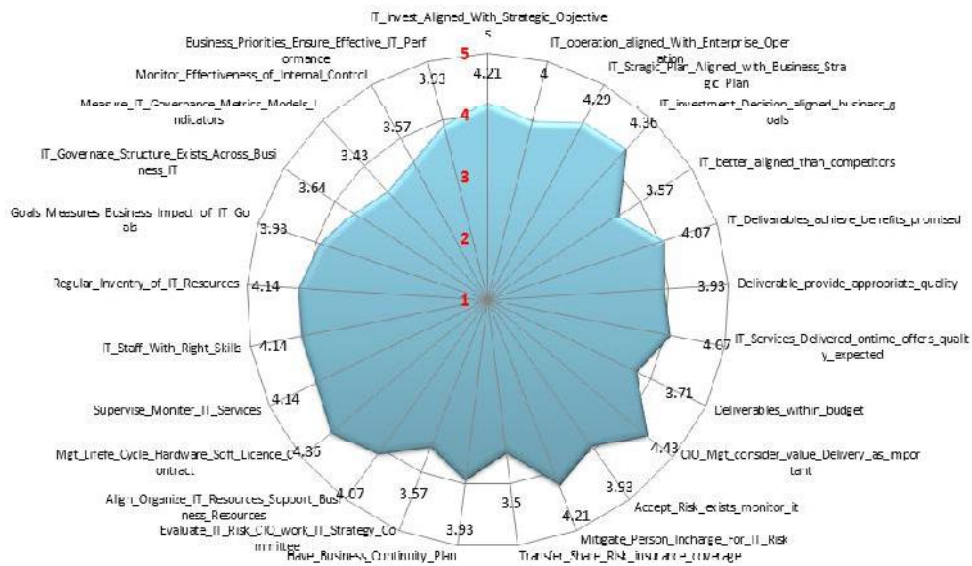


Figure 4: IT Governance Five Domain's Overall View

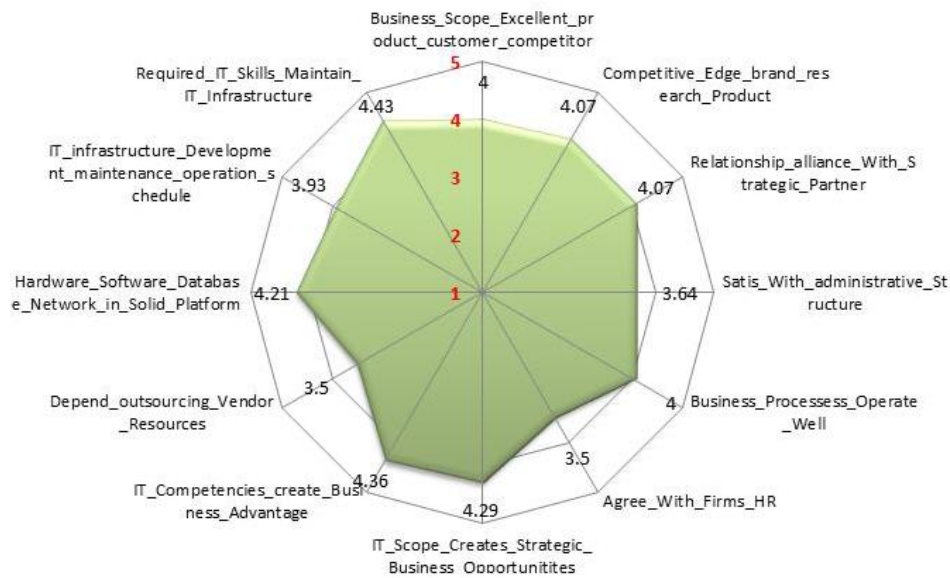
The above diagram (figure 4) shows the five domains of IT governance questions and its contribution to the variable IT governance. These questions were measured using likert scale range from 1-5 thus strongly disagree – strongly agree. Here the first five questions belongs to IT strategic alignment and second five questions belongs to value delivery and rest of each five questions belongs to Risk Management, resource management and performance management with their average value respectively. The domain IT strategic



alignment has agreed status from the respondent except two questions i.e. a) are the IT investment decisions aligned to business goals? and b) is your IT better aligned than competitors which has neutral kind of status?

The domain IT Resource Management’s over all status is agreed status from the respondents. On the other hand the domain such as IT value delivery and IT risk management over all status shows the agreed and neutral kind of status in their domain. The reason could be these two domains include the questions from the IT optimization, Risk mitigation aspects questions. Since the IT governance best practices are booming in this telecommunication sector it will take time to optimal usage of the best practices. Further the domain IT Performance Management consist the neutral kind of overall status from the respondents. The reasons for this domain’s status is in Sri Lankan context the usage of IT governance frameworks for IT performance management is just started and these best industry practices and frameworks are new to many telecommunication service provider companies.

**Business Strategy and IT Strategy**



**Figure 05: Business - IT Alignment Overall View**

The above diagram shows the business strategy and the IT strategy question’s contribution which form the variable Business - IT alignment. These questions were measured using likert scale range from 1-5 thus strongly disagree – strongly agree. In the above diagram the first six questions belongs to business strategy and second six questions belongs to IT strategy with their average value respectively. The four business strategy questions which shows the agreed kind of status from the respondents except two questions thus satisfaction with firm’s administrative structure and the way it organizes its businesses and agree with your firm’s HR activities(hire,fire,motivate,train,educate) which shows the neutral kind of status from the respondents. On the other hand under the IT strategy except

one questions all other five questions has the agreed kind of status from the respondents. The question firm depend on outsourcing, vendor and govern its resources, risks successfully shows the neutral kind of status in this domain.

## Conclusion

It is obvious that business - IT alignment is likely to be higher when firms are applying a mix of established IT governance practices and likely to be lower in organisations with a more poor mix of IT governance practices. One of the research questions in this research study is to find out different governance domains' contribution for IT governance. In the above analysis IT governance represents only the Strategic Alignment, Risk Management and Performance Management. Since the Value Delivery and IT Resource Management had negative and less reliability, these were ignored in calculating the IT governance. The researcher's assumption was there is a significant relationship exists between IT Governance and Business - IT alignment. It is obvious that there is a positive moderate level relationship exists between IT Governance and Business - IT Alignment. But there is a possibility when the 5 domains of IT governance contribute together, there could be a significant relationship between IT Governance and Business - IT alignment. Further this research study confirms that, IT governance facilitates to create better business - IT alignment for organizations, better IT governance practices will create improved IT investment performance for businesses. As a general conclusion of this study, governance domains are reliable and positively contribute (except 2 domain) to IT Governance. There is a positive moderate level relationship that is  $r = 0.522$  exist between IT Governance and business - IT alignment. It is obvious that the improved IT governance would lead to a better business-IT alignment. But in the Sri Lankan context, especially in telecommunication service provider sector, there are a few companies which have a well-established IT governance practices. Moreover the business strategy and IT strategy have reliable and positively contribute to the Business- IT alignment. This research study confirmed that there is a positive significant relationship exist between business strategy and IT Strategy and this research exposed that IT governance is definitely high on the organization's agenda. Finally this research suggests that there is a clear relationship between the use of IT governance practices and business/IT alignment in the telecommunication sector organizations in Sri Lanka.

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