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The Relationship between I.T. Infrastructure and Strategic Agility in Organizations

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ABSTRACT

This article looks at the relationship between the Information Technology (IT) infrastructure and organizations agility requirements. The concept of IT infrastructure agility has captured the attention of researchers and practitioners. Although the importance of IT infrastructure agility has been established, the development of a valid, reliable instrument to measure this construct has not been reported in the literature. The purpose of this paper is to better define the IT infrastructure agility construct and to develop a valid and reliable measurement instrument for this construct.

We develop a unique survey scale to measure IT infrastructure agility and organizational agility requirements. The organizational agility requirement metrics were developed to measure customer agility, partnering agility and operational agility. IT infrastructure agility was measured on the basis of its connectivity, compatibility, modularity and capability characteristics. Based on these measures we will look at the “fit” between organizational agility requirements and the existing IT infrastructure.

Keywords: organizational agility, agility measures, IT agility, IT-business fit

INTRODUCTION

The value of information technology infrastructure for today’s organization is by most indications, growing in importance. The current landscape in many industries is one of ongoing and heightened levels of competition, which demands flexibility, delivery speed, and innovation. D’Aveni (1994) used the term “hypercompetition” to describe the condition of rapidly escalating competition characterizing many industries. The increasingly strong pressures from hypercompetitive markets have forced organizations to turn to information technology (IT) in order to improve organizational agility.

The organizational agility concept was first identified by Nagel and Dove (1991) in their 21st Century Manufacturing Enterprise Strategy report. In the literature organizational agility is defined as *the ability of an organization to thrive in a continuously changing, unpredictable business environment* (Agility Forum, 1994) and is said to comprise of three interrelated characteristics: customer agility, partnering agility, and operational agility (Sambamurthy, Bharadwaj, and Grover, 2003).

Surveys indicate that the development of a flexible and responsive IT infrastructure is important (Boar, 1997; Brancheau, Janz and Wetherbe, 1996; Niederman, Brancheau and Wetherbe, 1991) and that investment in IT infrastructure has been growing. Broadbent and Weill (1997) found that expenditures on IT infrastructures accounted for an average of about 58 percent of organizational IT budgets and have increased at about 11 percent a year in recent years. Research has also indicated that a significant correlation exists between strategic agility and IT-infrastructure capability (Weill, Subramani, and Broadbent, 2002). Thus the focus now is on how organizations can become agile in the market and can this agility be sustained or enhanced through the use of IT.

In order to be agile, organizations need to have strategic agility planning that will lead to developing a structure that can enable agility. Researchers have stated that IT infrastructure should allow organizations to respond to new market conditions while providing for future integration (Davenport and Linder, 1994; Weill, 1993). Agility focuses on the use of information technology (IT) to provide strategic directions and capabilities to help organizations become competitive to face change. These perspectives indicate that the issue of agility may be viewed as a critical component of IT infrastructure, because many organizations are faced with unpredictable business environments. From this we get an understanding that in order to achieve agility, organizations should have proper IT infrastructure in place (Bentley, 1998; Weill et al. 2002) and this can only happen when you have a clear blue print of IT architecture.

Although the importance of the IT infrastructure agility and organizational agility requirements constructs has been strongly suggested in the literature (Weill et al. 2002; Sambamurthy et al., 2003; Ross and Weill, 2002), the development of a valid and reliable instruments to measure these constructs has not been reported in the literature. According to DeLone and McLean (1992) the IT research community must look to develop validated measures that are closely tied to the effectiveness of IT in organizations. Validated IT infrastructure agility measures can help IT managers better gauge the characteristics of this asset, which studies have shown these practitioners feel is so valuable to their organizations. In order to develop IT infrastructure agility, organizations must first understand their organizational agility requirements.

The purpose of this paper is to better explain IT infrastructure agility and organizational agility requirements constructs and to begin the process of developing the measurement instruments for these constructs. This exploratory study is seen only as a first step in the development of such an instrument. The expectation is that the instrument developed in this study will be further refined in future studies, with the resulting instrument used to examine the value of IT infrastructure agility to organizations.

Based on the above discussions we have formulated our research objectives as follows:

1. Understanding the relationship between the characteristics of IT architecture and organizational agility requirements based on the three agility characteristics (customer agility, partnering agility and operational agility).
2. Identification of metrics for organizational agility and IT infrastructure agility.
3. Identification of agility capability indexes.
4. Understanding “fit” between organizational agility and IT architecture.

INFORMATION TECHNOLOGY ARCHITECTURE

The terms *architecture* and *infrastructure* are sometimes used interchangeably, with architecture seen as the plan for the next infrastructure (Weill and Vitale, 2002). The popular opinion is that the infrastructure can be viewed as the physical components (nuts & bolts) that constitute IT architecture. An IT architecture is a blueprint that is developed, implemented, maintained, and used to explain how an organization’s IT and information management elements work together to efficiently accomplish the mission of the organization. IT architecture addresses the following views - business activities and processes, data sets and information flows, applications and software, and technology. At the enterprise level, IT architecture is the organizing logic for applications, data, and infrastructure technologies, as captured in asset of policies and technical choices, intended to enable the organization’s business strategy (Ross, 2003).

King (1995) suggests that the guiding architecture of an organization should be based on its strategic vision. In other words, this vision bridges the extant status of the organization (“What it is?”) and its projected future status (“What it wants to be?”). To develop a synergy between business strategy and IT architecture, organizations must develop organizational competencies in IT architecture. Ross (2003) identified four IT architectural stages, each with its own requisite competencies:

1. The application silo architecture stage
2. The standardized technology architecture stage
3. The rationalized data architecture stage
4. The modular architecture stage

Table 1 provides a summary of the characteristics and type of learning of each architecture stage. Each stage demands different organizational competencies to implement the architecture and to prepare the organization to move to the next stage. Similarly, Weill et al. (2002) found that each type of strategic agility requires distinct patterns of IT-infrastructure capability.

| | Application Silo | Standardized Technology | Rationalized Data | Modular |
|----------------------|--|--|--|---|
| IT Capability | IT application serve isolated business needs | Firm-wide technology standards | IT focused on wiring core processes | Modules enable business model extension |
| Key Mgmt Innovation | Technology-enabled change management | Standardization and exception management | Recognizing essence of the business | Practices facilitating reusability |
| Business Case for IT | ROI of applications | Reduced IT costs; interoperability | Improved business performance; integration | Speed to market; strategic agility |
| Index | Agility20 | Agility40 | Agility60 | Agility80 |

Table 1: Characteristics of Architecture Stages (Adapted from Ross, 2003)

IT Infrastructure

IT infrastructure is a multifaceted concept that seems to include two related but distinct components. Broadbent and Weill (1997) and Henderson and Venkatraman (1993; 1994) probably characterized these two components best by separating the concept into (i) a technical IT infrastructure, and (ii) a human IT infrastructure. In this paper we will concentrate on the technical infrastructure in order to relate it aptly to IT architecture. Technical infrastructure refers to the choices pertaining to applications, data, and technology configurations.

The technical IT infrastructure is oftentimes what is being referred to when practitioners and researchers discuss IT infrastructure. McKay and Brockway (1989) called the technical infrastructure the enabling foundation of shared IT capabilities upon which the entire business depends. Davenport and Linder (1994) referred to technical IT infrastructure as that part of the organization's information capacity intended to be shared. They concluded that a technical IT infrastructure is an organization's institutionalized IT practice - the consistent foundation on which the specific business activities and computer applications are built. Congruent with these other researchers, Duncan (1995) described the technical infrastructure as a set of shared, tangible IT resources forming a foundation for business applications. In her study, platform technology (hardware and operating systems), network and telecommunications technologies, data, and core software applications composed the tangible IT resources of the IT infrastructure.

Rockart, Earl and Ross (1996) reflected the ideal goals of a technical IT infrastructure by stating that “a *technical IT infrastructure* of telecommunications, computers, software, and data is integrated and interconnected so that all type of information can be expeditiously and effortlessly routed through the network and redesigned processes. Because it involves fewer manual or complex computer-based interventions, a *seamless* infrastructure is cheaper to operate than independent, divisional infrastructures.” (p. 49)

Duncan (1995) offered an empirical investigation of the technical aspects of the IT infrastructure flexibility construct. She demonstrated that one way to describe technical IT infrastructure flexibility more precisely was through the qualities of:

- **Connectivity:** This is a measurement of the level of standardization existing in an organization and provides an indication of information technology infrastructure agility. It is the ability of any technology component to attach to any other components both inside and outside the organization.
- **Compatibility:** This includes the communication capabilities of an enterprise, which are defined through the ability of an organization to exchange information across any type of technology component. This exchange can also take place at various levels such as production level, management level etc. and includes both the internal and external entities.
- **Modularity:** This is the ability to add, modify and remove any software or hardware component with ease and no major negative effect. Modularity relates to the degree to which technology components can be seamless interchanged (or diffused) into the infrastructure.

IS FLEXIBILITY THE SAME AS AGILITY?

The concept of IT infrastructure flexibility has similarities to IT infrastructure agility and can be regarded as a prerequisite; in other words IT infrastructure flexibility is a subunit of IT infrastructure agility. Agility is about capturing new business opportunities, while flexibility provides the capability of realizing these business opportunities in operations (Pettersson, 1998). Flexibility is designed into a system to handle short-term changes and fixed at specific time - the planned response to anticipated contingencies. Agility, on the other hand, means that instead of building something anticipating a defined range of requirements, it is necessary to be able to deconstruct and reconstruct the system as needed (Noaker, 1994).

The term agility has drawn a lot of attention in the world of business (Lo, 1998) and it is viewed as a necessary ability in the revolutionary turning of the business environment into a turbulent place of competition (Sharifi and Zhang, 1999). Generally, agility is the ability of an organization to face and adapt proficiently in a continuously changing and unpredictable business environment. Agility is the ability to thrive in rapidly changing, fragmented markets (Gould, 1997). The same view is expressed by Goldman, Nagel, and Preiss (1995) who define agility as a comprehensive response to the challenges posed by a business environment dominated by change and uncertainty.

Agility is not about how an organization responds to change, but it is about having the capabilities and processes to respond to its environment that will always change in unexpected ways. Kodish, Gibson and Amos (1995) refer to agility as the organization's nimbleness to quickly assemble its technology, employees, and management via a sophisticated communication infrastructure in a deliberate, effective, and coordinated response to changing customer demands in a market environment of continuous and unanticipated change. Thus, the concept of agility comprises two main factors: proper response to change and exploiting and taking advantage of the changes (Dove, 1996a, 1996b; Dove, Hartman and Benson, 1996; Kidd, 1995).

Hence from the above description we can safely state that agile IT infrastructure is different from a flexible IT infrastructure. Generally, a flexible IT infrastructure implies building a system with capabilities anticipating a defined range of requirements such as a broad range of product offering, expansion plans to other geographical locations etc. Whereas an agile IT infrastructure implies building a system that can be easily be reconfigured, scaled, deconstructed and reconstructed as needed, to adapt to unanticipated changes. Therefore, we propose that by adding a fourth characteristic to the three flexibility characteristic proposed by Duncan (1995) we can distinguish between flexible IT infrastructure and agile IT infrastructure. The fourth characteristic is defined as follows:

IT infrastructure capability has been defined as the integrated set of reliable IT infrastructure services available to support existing applications and new initiatives in organizations (Weill and Vitale, 1999; Weill and Vitale, 2002). Consistent with Marchand, Kettinger and Rollins (2000) conceptualization about information technology practices, we define IT infrastructure capabilities as: (i) the ability to provide data and information to users with the appropriate levels of accuracy, timeliness, reliability, security, and confidentiality; (ii) the ability to provide universal connectivity and access with adequate reach and range; and, (iii) the ability to tailor the infrastructure to emerging business needs and directions.

The IT infrastructure capability implies potential or readiness of the information systems infrastructure to respond to unanticipated changes. In a conceptual sense these unanticipated changes are potential threats and opportunities, none of which exist yet. The unanticipated changes to which an organization must be able to respond are:

1. Product-market changes, such as the emergence of new products, disappearance of existing customers etc.
2. Factor market changes, such as the emergence of new resources that offer significant advantages etc.

3. Operations related change, such as the emergence of radical process technology etc.

The four IT infrastructure characteristics (connectivity, compatibility, modularity and capability) that support agility are consistent with what Dove et al. (1996) suggested. In their design of agile enterprise reference model Dove et al. (1996) defined a set of change proficiency model for the business practices defined by the Agility Forum. This reference model contemplated a series of statements representing both the proactive and reactive characteristics. Coronado, Sarhadi and Millar (2002) used this reference model as a base to come up with the IT characteristics that support agility (for details see Coronado et al. 2002, pp.62-64).

Therefore based on the above discussions we can state that the IT infrastructure agility construct comprises of connectivity, compatibility, modularity and capability characteristics.

ORGANIZATIONAL AGILITY REQUIREMENTS

This is the degree of agility required by the organization to not only survive but also thrive in its business environment. Each organization can have a different level of organizational agility requirements based on how they perceive their external environment. We have adopted the following agility characteristics to measure organizational agility requirements based on Sambamurthy et al. (2003) characterization:

1. **Customer Agility** – This is defined as co-opting customers in the exploration and exploitation of opportunities. That is, customer agility describes an organizations ability to leverage the voice of the customer for gaining market intelligence and detecting competitive action opportunities.
2. **Partnering Agility** – This is defined as the ability of the organization to leverage the assets, knowledge and competencies of suppliers, distributors, contract manufacturers, and logistic providers through alliances, partnerships and joint ventures. Partnering agility enables an organization to modify or adapt its extended enterprise network when it needs access to assets, competencies, or knowledge not currently available in its networks.
3. **Operational Agility** – This is defined as the ability of the organization's business processes to accomplish speed, accuracy, and cost economy in the exploitation of opportunities for innovation and competitive action. Operational agility ensures that organizations can rapidly redesign existing processes and create new processes for exploiting dynamic marketplace conditions.

Despite the obvious benefits of agility, organizations that operate in complex environments face challenges in implementing the measures necessary to increase their agility. These challenges stem from the expense associated with understanding the complex environment. We have adapted some measures (see Appendix C) from Goldman et al. (1995) that capture the customer agility, partnering agility and operational agility characteristics. From these measures organizations should be able to assess their organizational agility requirements.

DEVELOPMENT OF IT INFRASTRUCTURE AGILITY AND ORGANIZATIONAL AGILITY REQUIREMENTS CONSTRUCTS

A construct is an abstract representation of a phenomenon of interest to researchers. IT infrastructure agility and organizational agility are the construct of interest in this study. The methodology for this study follows the recommendations for construct measurement outlined by Churchill (1979). Stage I of Churchill's paradigm defines the domain of the IT infrastructure agility construct. Stage 2 operationalizes the construct by developing a measurement instrument through literature review. Churchill's methodology has been used previously for construct development in the IT field of study (e.g. Lederer and Sethi, 1992; Lewis et al., 1995). Stage 3, which contains the statistical analyses of the data gathered from administering the instrument, is not included in this paper.

Domain of the IT Infrastructure Agility Construct

The domain of a construct is essentially a definition of the concept. Previously in this paper, we presented several authors' views of the IT infrastructure and IT infrastructure agility.

IT infrastructure is the shared IT resources consisting of a technical physical base of hardware, software, communications technologies, data, and core applications. These IT services provide a foundation for communications interchange across the entire organization and for the development and implementation of present and future business applications.

Combining this definition with the concept of agility yields:

IT infrastructure agility is the ability to build a system that can easily be reconfigured, scaled, deconstructed and reconstructed as needed, to adapt to unanticipated changes.

Content Analysis of the IT Infrastructure Agility Construct

We relied primarily on the studies of Duncan (1995), Coronado et al. (2002) and Weill and Vitale (2002) to come up with the dimensions (1) Connectivity (2) Compatibility (3) Modularity and (4) Capability.

Using these dimensions, a content analysis of the IT literature was employed, resulting in a pool of items that were used in the development of the initial instrument. The original pool of items relevant to the dimensions can be found in Appendix B. Each item will be measured on a five point likert scale with the two extremes being 'Strongly Agree' and 'Strongly Disagree'.

Domain of the Organizational Agility Requirements Construct

Based on the previous discussion in this paper, we adopt the Agility Forum definition of organizational agility for our study i.e. the ability of an organization to thrive in a continuously changing, unpredictable business environment (Agility Forum, 1994).

Organizational agility requirements construct was identified earlier in our paper as *the degree of agility required by the organization to not only survive but also thrive in its business environment*.

Content Analysis of the Organizational Agility Requirements Construct

We utilize the description given by Sambamurthy et al. (2003) and Goldman et al. (1995) for organizational agility, where they describe organizational agility as comprised of three interrelated characteristics: customer agility, partnering agility, and operational agility

Using these dimensions, a content analysis of the literature was employed, resulting in a pool of items that were used in the development of the initial instrument to measure the organizational agility requirements construct. The original pool of items relevant to the dimensions can be found in Appendix C. Each item will be measured a five point likert scale with the two extremes being 'Strongly Agree' and 'Strongly Disagree'.

SCALE DEVELOPMENT

We developed the scales utilizing the steps outlined by Moore and Benbasat (1991), all the items displayed high inter-rater reliabilities. The items were analyzed by nine doctoral students (judges). In the first step the judges were not told what the underlying constructs were, but were asked to place the items into different constructs of their own labels. In this exercise eight judges compiled seven constructs and one judge had six constructs. In the next step each judge was asked to categorize the items into seven constructs that we gave, all the items were correctly assigned by at least seven judges. This is greater than that required for developing reliable measures (0.65) - see Moore and Benbasat (1991), pp. 199-201 for details regarding scale development.

AGILITY INDEXES

We also developed four indexes: Agility20 (0-20), Agility40 (21-40), Agility60 (41-60) and Agility80 (61-80) to correspond to the organizational agility requirements and IT infrastructure agility - with the Agility20 being the least agile and Agility80 being the most agile.

Based on the total value of each survey (see Appendix B and Appendix C) we can assign the organizational agility requirements and IT infrastructure agility of each organization to one of the four indexes. We then map the IT infrastructure agility to the IT architecture characteristics as shown in Table 1 on the basis of our definition of IT infrastructure agility and the IT architecture characteristics proposed by Ross (2003).

ALIGNMENT BETWEEN IT AGILITY AND ORGANIZATIONAL AGILITY REQUIREMENTS

Many organizations are moving from the reactive position of perceiving IT as merely a supporting function in competitive strategy to a more proactive perception of finding ways to exploit IT capabilities to transform their businesses, based on a more challenging strategy for competitiveness (McDonald, 1993; Meador, 1994). Traditional planning approaches for IT strategy underplay IT's role in leveraging changes to either the competitive strategy or to the underlying business processes and infrastructures (Luftman, Lewis and Oldach, 1993; Meador, 1994). While the real IT competitive benefit is a reflection of its effective architecture, the traditional belief was that the question of architecture comes after applications and their supporting data have been determined (Meador, 1994). IT infrastructure strategies are usually developed traditionally by either basing them purely on technology, creating business strategies without IT participation, using inflexible methods and metrics, changing the IT infrastructure and processes in isolation from the business, or redesigning organizational processes without involvement of IT staff (Luftman et al., 1993). This could lead to poor alignment ("fit") between IT and business and thereby affect the overall performance of an organization.

The importance of alignment for effective organizational performance is well known (e.g. Delery and Doty, 1996). Researchers suggest that alignment between business and IT strategies enhances business success and imply that greater alignment between an organization's business strategy and IS strategy indicates that the systems are targeted on areas that are critical to its success (e.g. Sabherwal and Chan, 2001). Organizations with greater alignment between business strategy and IT strategy are also more likely to utilize IT for competitive advantage (Johnston and Carrico, 1988; Wiseman, 1988).

Figure 1 (Appendix A) illustrates the conceptual model of “fit” between IT architecture and organization agility requirements. The basic premise of this model is that the “fit” between IT architecture and organizational agility requirements will have an affect on the organization’s overall performance.

Goranson (1997) observes that agility is like insurance; it costs money and it must be justified. Building agility characteristics into the system is akin to buying insurance. The worst kind of insurance is that which you do not have when a given situation occurs. But almost as bad is the insurance you bought for a situation, the occurrence of which is extremely rare and/or whose impact is insignificant. The challenge, Goranson points out, is to understand the changing environment, and the options for agility that map the strategy to the environment. In doing so one must quantitatively optimize the costs and benefits of each type of agility.

From Figure 2 (Appendix A) we see that IT architecture agility is that of Agility40 when organizational agility requirement is that of Agility80. Based on Goranson (1997) we can state that this is a poor fit because the IT architecture cannot satisfy the organizational agility requirements. Similarly, from Figure 3 (Appendix A) we see that IT architecture has the agility of Agility60 when the organizational agility requirement is that of Agility20. This situation is akin to buying insurance for a situation, whose occurrence is extremely rare and/or the impact is insignificant (i.e. wastage of resources). Hence this type of a relation will also constitute a poor fit. Finally, from Figure 4 (Appendix A), we see that when IT architecture agility and the organizational agility requirements are both that of Agility60, a good fit is said to exist.

Based on the above discussion we propose:

P1a: The better the fit between IT architecture and organization agility requirements, the better will be the overall performance of the organization

P1b: IT architecture at higher levels than organization agility requirements will lead to poor organization performance, due to cost incurred in developing and maintaining an IT infrastructure that is not fully utilized.

Based on our previous definition of IT infrastructure agility and discussion of IT characteristics proposed by Ross (2003) we state that:

P2: High level of agility will require either a rationalized data or a modular architecture.

CONCLUSION

This study has taken a first step towards developing measures for the IT infrastructure agility and organizational agility requirements constructs. These constructs were defined and operationalized following the recommendations of Churchill (1979). Based on an extensive literature review, we developed the measures for organizational agility requirements on the basis of customer agility, partnering agility and organizational agility characteristics. Similarly, the IT infrastructure agility measures were developed on the basis of four dimensions, namely connectivity, compatibility, modularity and capability. Following Moore and Benbasat (1991) we assessed the inter-rater reliabilities of the items and found them to be above the satisfactory level of 0.65. Our next step will be to validate this instrument by pilot testing it with data from 5-6 large-size companies. After pilot testing the instrument we intend to test for the proposed relationship by surveying a large number of medium to large size companies.

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APPENDIX A

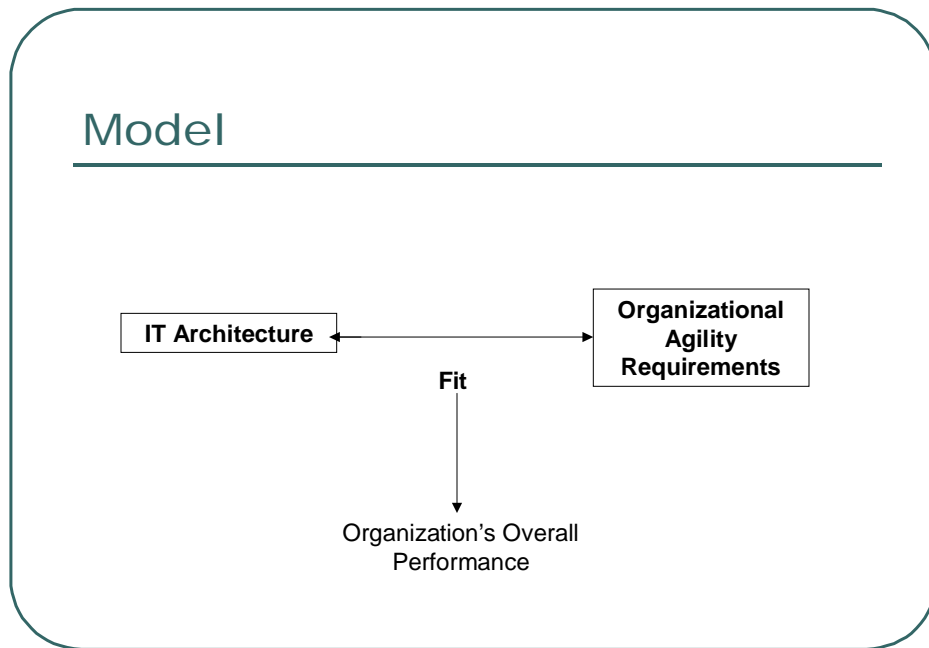


Figure 1

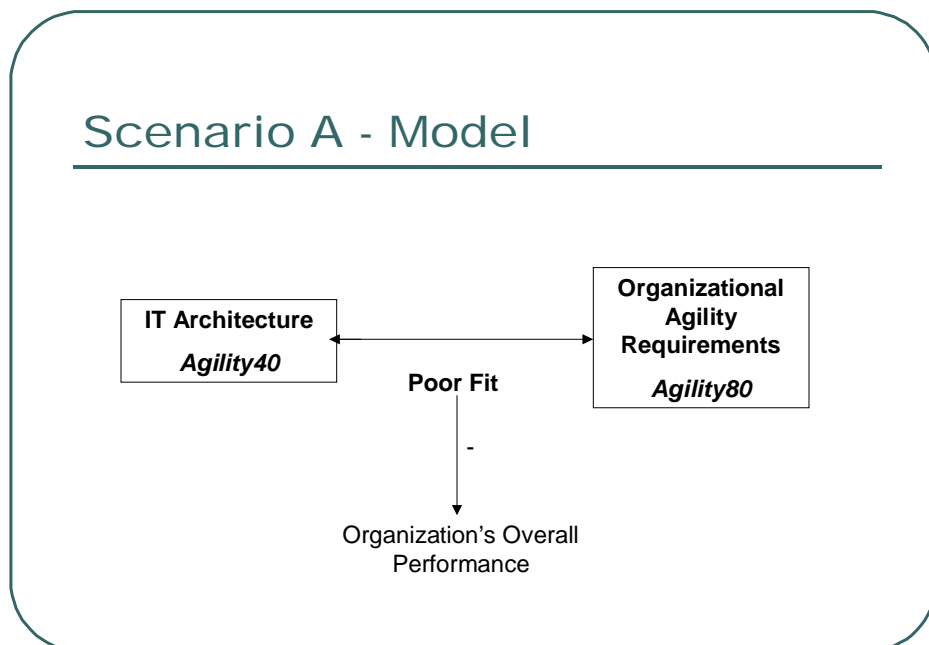


Figure 2

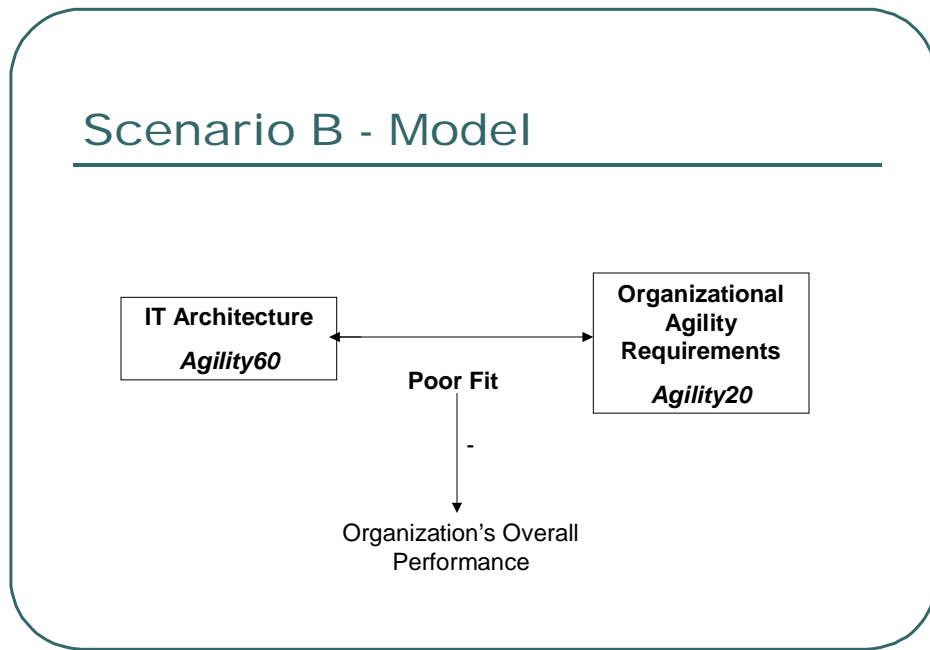


Figure 3

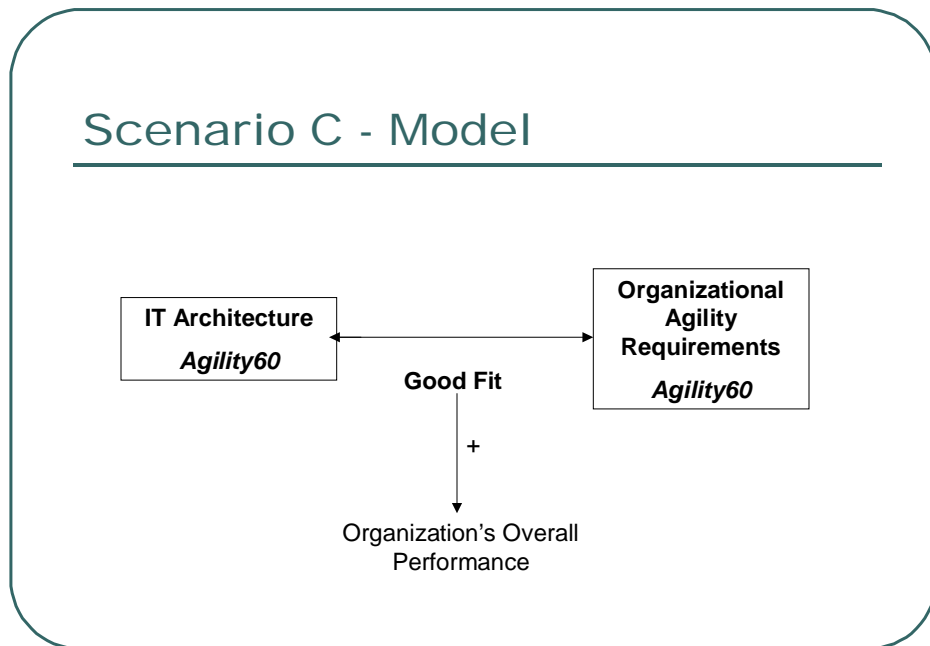


Figure 4

APPENDIX B

IT Infrastructure Agility Questionnaire

Connectivity

1. Our IT infrastructure facilitates easy accessibility to stored information for those who require it.
2. Our IT infrastructure enables us to store and have access to current information (irrespective of where it is stored).
3. Our IT infrastructure integrates our business units.
4. Our IT infrastructure enables collaboration between different business units.
5. Our IT infrastructure offers us flexible linkages between our organization and external entities.
6. Our IT infrastructure makes it easy to integrate both external and internal entities
7. Our IT infrastructure enables new locations and acquisitions to be quickly assimilated into our business

Compatibility

1. Our IT infrastructure contributes to the speed of decision-making
2. Our IT infrastructure facilitates timely communication with our customers
3. Our IT infrastructure facilitates timely communication among our employees at various levels
4. Our IT infrastructure facilitates timely communication with our suppliers
5. Our IT infrastructure enables a wide variety of information (ex: video, graphs etc.) to be easily exchanged
6. Our IT infrastructure enables communication from a wide variety of devices (e.g. mobile)

Modularity

1. Our IT infrastructure enables rapid migration to new business processes
2. Our IT infrastructure facilitates reusability
3. Our IT infrastructure enables us to easily add or remove technology components without any major negative effects.
4. Our IT infrastructure enables rapid development of applications through reusability
5. Our IT infrastructure encourages component based design

Capability

1. Our IT infrastructure enables us to fulfill customer requirements easily
2. Our IT infrastructure enables us to easily collaborate with our partners/subsidiaries
3. Our IT infrastructure enables us to monitor changes and make the necessary changes
4. Our IT infrastructure enables us to easily partner with others (suppliers, customers etc.) for mutual benefit
5. Our IT infrastructure enables us to incorporate customer requests for developing products/services
6. Our IT infrastructure contributes toward the efficiency and effectiveness of our business/manufacturing processes
7. Our IT infrastructure enables rapid and easy implementation of new technology components to keep up with the changing business needs
8. Our IT infrastructure ensures that the information being exchanged is of high quality and reliability
9. Our IT infrastructure ensures that the systems are highly reliable
10. Our IT infrastructure enables development of user friendly systems

APPENDIX C

Organization Agility Questionnaire

Customer Agility

1. Our customer preferences change frequently
2. Our customer base is dynamic
3. We are constantly looking for opportunities to add value to our customers
4. Our business model requires us to have a high level of interaction with our customers
5. Our customers usually come to us with special requests requiring rapid response
6. Our business requires us to have a proactive relationship with our customers

Partnering Agility

1. When developing our products/services, we usually cooperate across organization lines
2. We utilize cross functional teams when developing our products/services
3. Various business units within our organization must cooperate when developing products/services
4. In order to develop our products/services, information must be shared among business units
5. In order to develop our products/services, various functional units in our organization must coordinate and communicate to make decisions.
6. We have to partner with other organizations (suppliers/customers) in developing our products/services
7. We frequently change our suppliers to keep up with our dynamic business needs.
8. We constantly change the type of resources that we acquire from our suppliers

Operational Agility

1. We customize our products/services
2. We mass produce our products/services
3. We need information to be rapidly available to those who need it.
4. Our business environment requires us to be organized as functional silos and take decisions independently
5. Our business environment requires us to make quick decisions
6. Our organization is constantly reinventing and reorganizing itself.
7. Our goals are dynamic and constantly changing
8. We frequently change our manufacturing/business processes
9. We frequently change our design/requirement specification
10. The availability of stored information is crucial to our decision making
11. Our business requires us to constantly monitor our external environment
12. We empower our employees to make the necessary decisions to keep up with our evolving business
13. Our organization needs rapid responses to the changing environment.
14. We usually encounter unforeseen problems (ex: change in delivery date, order quantities) and must rapidly respond to them
15. We frequently launch new products/services
16. For developing new product/services we utilize a rapid development cycle
17. Our product/service portfolio is constantly changing
18. Our business environment is stable and certain