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# INFORMATION TECHNOLOGY AND BUSINESS VALUE IN DEVELOPING ECONOMIES: A STUDY OF INTANGIBLE BENEFITS OF INFORMATION TECHNOLOGY INVESTMENTS IN FIJI

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## ABSTRACT

Understanding how IT investments contribute to business value is an important issue, and this assists in the efficient use of technology resources in businesses. While there is an agreement that IT contributes to business value, we are unsure of how IT contributes to business value in the wider context, including developing countries. With the view that understanding the interaction between IT resources and the users may provide better insights on the potential of IT investments, this study investigates the businesses' perception of the intangible benefits of their IT investments. The results indicate that businesses in developing countries perceive that their IT investments provide intangible benefits, especially at the process level, and this contributes to business value.

**Keywords:** Information Technology, Business Value, Intangible Benefits

## 1. INTRODUCTION

Information technology (IT) business value research examines the organisational performance impacts of IT, and this is an important issue for researchers, resource managers, and other stakeholders. IT business value includes productivity enhancement, profitability improvement, improved work relations, competitive advantage, and efficient use of resources (Melville et al., 2004; Devaraj and Kohli, 2003; Hitt and Brynjolfsson, 1996) at both intermediate process level and organisational level (Melville et al., 2004). While there is an agreement that IT indeed contributes to business value, there is uncertainty in how IT contributes to business value. Businesses invest substantially in IT resources (Melville et al., 2004), both in developing and developed economies (Roztocki et al., 2004), and the investments in developing countries are often initiated by multinational investors from developed countries. However, we have not given much attention to understanding how IT creates value in businesses in developing countries, and many of the findings from the developed countries have a limited value to stakeholders in developing countries. An understanding of IT investments contribution to business value in developing countries will provide investors more confidence and direction in their IT investments (Roztocki et al., 2004).

Understanding IT investments contribution to business value has been challenging, and perhaps more challenging in developing countries due to generally less predictable changes in the social, political and economic infrastructure (Roztocki and Weistroffer, 2004). Further, while most IT investment decisions are strategic, developing countries see these investments affecting mostly the operational activities (Pimchangthong et al., 2003), and not all benefits at this level could be quantified. Thus, understanding the perceived intangible

benefits of these investments would help businesses direct and use their IT resources more efficiently, and help understand how IT contributes to business value in developing countries.

The aim of this paper, therefore, is to study the perceived intangible benefits of operational level IT investments in businesses in a developing country to understand how IT contributes to business value. The organisation of this paper is as follows. The next section considers the IT investments in developing countries, followed by the theoretical framework, and discussion on the research methods. Then, I present and discuss the results. The final section provides suggestions for further research.

## 2. IT INVESTMENTS IN DEVELOPING COUNTRIES – AN OVERVIEW

IT investments in different developing countries have been encouraging lately (Bagchi et al., 2004). This growth over time reflects the trend of increasing IT adoption, and, therefore, its implication on businesses need consideration. Although prior studies in developed countries have established well that IT does contribute to business value (Wade and Hulland, 2004; Melville et al., 2004), there is an imbalance of scholarly studies on advanced and less developed countries (Palvia, 1998), and even fewer studies on the less developed countries in the South Pacific.

The studies that considered how IT could promote development in developing countries highlights the role of the intermediary institutions in linking the local to global (Madon, 2000), and the role of institutional settings of Information and Communication Technology (ICT) (Avgerou, 2002) as important factors. The need for standards and telecommunications infrastructure is important (Silva and Figueroa, 2002) and the need for a network of human and nonhuman elements (Sayed and Westrup, 2003) is also seen to be important for development through the use of IT. The issue of cross cultural settings has also been considered in the developing countries, and the difficulty in non face-to-face communication when working across cultures is recognized (Aman and Nicholson, 2003). The need to understand and value locally meaningful ways of doings things is also recognized as important in seeing the benefits of IT investments (Bada, 2002).

The impact of IT in developing countries has received less attention compared to their implications on development and culture. There is more focus at the national level performance than at the firm level. For example, Ziadi and Kuofie (2006) found that in Tunisia, businesses are not yet completely committed to the revolution of the information. They suggest that this lack of initiative could be because new technologies require investments, including development of human resources, which the Tunisian businesses do not feel ready to provide.

The more advanced developing countries, with higher GDP per capita, strong manufacturing sector, and advanced technology adoption have received more attention with their IT investments. Studies have considered the diffusion of IT (Travica, 2002, Jain, 1997), the role of internet (Srikantaiah and Dong, 1998), human resource management (Napier and Vu, 1998), and management of technology (Abdul-Gader, 1998). An attempt to measure the IT investments value creation capabilities in developing countries seem a timely initiative, and recognising that the importance of the interaction between the technology and the users' of the technology could provide richer insights into how organisations use IT to derive business value.

## 3. THEORETICAL FRAMEWORK

The inherent opposition in the social sciences between subjective and objective dimensions of social reality, and its implications on understanding a phenomenum has been the focus of social theorists (for example, Giddens, 1976, 1984) and philosophers of science (for example, Bernstein, 1983). The resultant was an alternative meta-theory that incorporates both the objective and subjective dimensions. One resultant theory is the Giddens' Structuration Theory (Giddens, 1976, 1979, 1984), that allows researchers to embrace both the subjective and objective conceptions of organisations. Structuration theory has been extensively used in the analysis of organisational processes in information systems (see for example Orlikowski, 1992, 1993, 2000; 2002; Sharma and Yetton, 2003; Walsham, 2002).

Structuration is posited as a social process that involves the reciprocal interaction of human actors and structural features of organisations (Orlikowski, 1992). It recognizes that human actions are enabled in the organisational structures, yet these structures are the result of previous actions. The role of human actors in reaffirming structural properties is highlighted so as to avoid reification (Giddens, 1984) .

In the context of the use of information technology in organisations to derive business value, from structuration lens, human actions create and change technology, yet humans also use it to accomplish some action. This recursive notion of technology is what Orlikowski (1992) calls duality of technology. Orlikowski sees technology as the product of human action (what they would like to achieve), while it also assumes structural properties. That is, technology is physically constructed by actors working in a given social context, and technology is socially constructed by actors through the different meanings they attach to it and the various features they emphasize and use (Orlikowski, 1992). Understanding the extent to which this technology creates value for organisations depends upon ones ability to understand the meaning the actors (management and employees) attach to technology and how they use it. This interaction is knowledgeable and reflexive. Respectively, one may not understand how IT contributes to business value by ignoring this notion of interactivity between technology and actors.

The current stream of IT business value researchers, while acknowledging the synergies between the resources and the users of the resources, fail to adopt a philosophical stance that allows for a richer understanding of this phenomenon. The predominantly positivistic approaches take the benefits to be independent of the users' of technology in organisations. Most of the intangible benefits are the product of this interactivity between technology and actors, and an interpretive approach is appropriate to get a deep understanding of the phenomenon, which will provide a better understanding as to how organisations derive these benefits.

## 4. METHODOLOGICAL CONSIDERATIONS

### 4.1 The Fiji Islands

Fiji consists of a group of about 300 small islands in the South Pacific. Fiji has a population of approximately 800,000 of which about 90% inhibit the two main islands of Viti Levu and Vanua Levu. The Fijian Government targets its economic policies towards growth in exports. Sugar, garments, fish, gold and timber contribute to about 75% of exports in a year (ADB, 2006). Fiji's tourism industry is the major foreign exchange earner, but small and medium enterprises also have significant economic contributions to the economy. In the South Pacific, Fiji is the most industrialized country with a per capita Gross National Income (GNI) of US$ 2160 in 2002. The World Bank classifies Fiji as a Lower Middle Income Economy (ADB,

2006) . Fiji has a diversified open economy with the service sector contributing about 67% of the GDP.

Fiji saw its economy expand in 2005 by an estimated 1.7%, after average growth of 3.4% from 1999 to 2004 (ADB, 2006). While the growth in production (gold and clothing) fell from previous years, the service sector remains the pillar of the economy and a major foreign exchange earner, with a robust 13% growth in 2005. The economic outlook for Fiji depends on continued growth in the service sector, and most importantly continued improvement in the quality of service delivered by businesses operating in the midst of a monopolistic business environment (ADB, 2006). This has been the prerequisite for economic efficiencies in other developing economies, and IT plays an important role in such initiatives (Wong, 2004).

### 4.2 Method

The methodological approach is one of constructivist inquiry (Dey, 1993), and involves explanation of the social events and processes within a given setting using multiple case studies. A preliminary study based on the extent of the use of IT identified suitable businesses, and discussions resulted in selection of five businesses representing, banking and insurance, tourism, telecommunications, and government sectors. Semi-structured interviews were held with the executive management, middle management, supervisors, and finance professionals.

Twenty-five interviews were conducted, focusing on the nature of benefits achieved from the IT investments at the operational level. This included, issues of relationships, quality of service, effect on business image, technology adoption process, and impact on accounting controls. Discussions with experts on technology and resource management identified these measures of intangible benefits at the intermediate level in a service driven economy as being appropriate in the context of South Pacific economies and providing scope to the study. During discussion, the interviewees were also asked to rate their perception of the level of the intangible benefits achieved by their businesses on the specified issues on a 5-point likert scale, with 1 indicating excellent benefits, and 5 indicating no benefits. The rating was used to compare the perceived nature and the extent of the intangible benefits at different levels of management, areas where IT was used, and the nature of the business.

The aim of the data analysis was to understand the perceptions of intangible benefits of IT, and I adopted an iterative process of understanding the nature of benefits. All transcripts were read to grasp a broader understanding of the nature of intangible benefits, and then, sorted the transcripts in an arbitrary group based on the highlighted benefits. Next, I read the transcripts again, keeping in mind these arbitrary groupings and tried to understand the businesses perception of the intangible benefits from their IT investments.

## 5. RESULTS

The analysis of the interview transcripts revealed three key conceptions of the value and value creating ability of IT investments in Fiji. First, IT investments are no different from any other forms of investment, and the expectation of these investments in value creation is not any different from other investments. Thus, IT investments are subject to rigid evaluation, and despite the presence of a monopolistic environment, and the lack of strong competition, businesses do not perceive IT investments as synonymous to success. Second, while the businesses perception of the IT investments ability to create business value is impartial in relation to other investments, its partiality in the nature of benefits provided is recognised, as businesses realise that the investments may only provide intangible benefits. Third,

businesses recognise the diversified value creating potential of IT investments, and invest in IT for immediate to strategic process related issues such as process recovery in the event of a disaster. These conceptions form the basis of discussion on how IT may provide benefits at the specific process issues.

Businesses recognise the relationship building potential of IT at both the employee-supervisor and employee-customer levels. Businesses suggested that IT, with appropriate support, results in supervisors being more independent, thus removing the frustration of delegating trivial activities. The relationship enhancement potential of IT differs within sectors, and depends upon the extent of technology adoption. Businesses suggested that there is a need for controlled and secure IT investments, as there is always the potential of communication of information to unintended parties, mostly outside the business. Businesses also perceive IT improves their ability to reach to the customers, however, they suggest there is a tendency that customers may not be ever satisfied. They suggest that if IT investment ends up being customer-driven and without proper guidelines, businesses risk playing catch-up. The businesses see IT contribute to the improvement in the quality and efficiency of service delivery, but suggest a proactive approach to IT investment to ensure improved quality and efficiency. As interviewees expressed:

> I1: Supervisors can do their own work thus reducing dependency on the assistants. But effectiveness will depend upon how support is provided rather than the equipment.
>
> I16: Because we are an organisation striving for excellence in service delivery, this has been a major motivating factor. We have seen huge improvement in internal communication through tools like e-mail.
>
> I2: We have improved our service delivery. However, the use of technology makes us and our customers appreciate that we need to do more. I feel that we have improved fairly well but we need to do more to further enhance our service to our customers.

The businesses perceive a weak contribution of IT in managing human resources, especially in contributing to reducing staff turnover. They acknowledge that while IT provides staff with modern working tools it is not the primary motivator. However, businesses feel that if one considers at national level, IT provides staff with a modern set of work tools, improve the marketability of their staff, and perceive this as good for the country as a whole. Businesses also perceive IT to play an important role in the technology readiness process, as users of technology in developing country appreciate the need for better technologies from their current investments, and perceive it creates further demand to acquire modern technology. While businesses perceive IT to improve the internal processes, they shared mixed views on IT's contribution to enhancing the corporate image. There were suggestions that the external environment is the major determinant of corporate image and businesses indicated that improvements in internal processes and functions might not be communicated well to the external parties. As interviewees expressed:

> T3: It depends upon the purpose of information technology investments especially in relation to staff. If one intends to harness the company culture, then improvements in staff turnover could be seen. Information technology investments make a workforce more marketable, but a good company

culture will not result in staff turnover, despite financial incentive. Further, some technologies (e.g. e-mail) have become a norm so it is not expected to drive the staff away.

T5: Sometimes it is only when one has made some investments into information technology that one realises what more could be done. Now we want to convert some of our processes into web-based processes. This would give our customers a one-stop-shop in terms of getting application forms, checking their application progress etc.

Owing to the conception of the value of technology, businesses anticipate improvements in process costs, though they do not foresee improvement in the short term. Cost becomes an issue with progressive investment in IT. There was consensus that cost reductions are part of the pool of benefits, but conceived that this may not hold prominence in the short run compared to other benefits. There is a strong intention to see IT investments provide firm level benefits. Businesses also recognise the role of IT in enhancing information and data security, as they perceive adoption of technology improves internal controls, but are aware of the limitations of paperless transaction processes. The businesses acknowledge the need to invest in IT despite lack of immediate financial returns, and recognise that there are benefits beyond tangible financial returns. However, they conceive that IT investments still need the same level of scrutiny as other investments, and there is a strong feeling in developing countries like Fiji to invest in IT despite the lack of strong competition to do so. As interviewees expressed:

T21: When I take an IT investment proposal to request for funds, I do not just tell them how much it will cost us but I also have to inform them what the benefits are both tangibly and intangibly. We must see clear-cut benefits before we make an investment decision. I must emphasize, however, that cost savings may not be our immediate priority. There are of course intangible benefits that need to be considered first.

T16: It is a must because globalisation demands that one must be in par with the rest of the world especially in terms of provision of quality of service. This is despite the absence of strong competition. Each organisation must meet the demands of its customers in terms of the expectations. Society now knows what quality of service is expected

The interviewees ranking of the perceived benefits of their IT investments provides an opportunity to segment and evaluate these perceptions to get an understanding on the magnitude of the perception, the degree of perceived benefits in areas of business and the degree of perceived benefits in different types of businesses. Table 1a, 1b and 1c provide this information.

Table 1a that shows average ratings of by issue, indicates businesses perceive IT contributing the most towards improving customer-employee relationships and internal controls with average ranking of 1.96 and 1.72 respectively. They also perceive a strong technology readiness capability of their IT investments (average ranking = 1.60). Quality and efficiency of service provision, employee-supervisor, and impact on corporate image also got average ratings below the mid-scale rating of 2.5. Table 1b that shows the ratings by position of interviewees indicates process managers, service department managers, and front-end

officers perceive to achieve the most benefits from IT investments. Other interviewee's average rating is marginally above mid-scale rating of 2.5. Table 1c that provides the average ratings by sector indicates interviewees from telecommunications, banking and insurance, and service sectors perceive most intangible benefits from their IT investments. In addition, an evaluation of the transcripts and the ratings also revealed that representations of businesses related their perceived benefits of IT investments to their positions, as strategic management views are generally towards the strategic benefits, the middle level managers focused on the tactical benefits, and the lower level managers/supervisors on the operational benefits.

| Issue | Average |
|---|---|
| Employee-Supervisor Relationship | 2.08 |
| Customer-Employee Relationship | 1.96 |
| Quality of Service Provision | 2.04 |
| Efficiency of Service Provision | 2.08 |
| Level of Service Satisfaction | 2.64 |
| Staff Turnover | 3.04 |
| Impact on Technology Adoption | 1.60 |
| Impact on Corporate Image | 2.12 |
| Impact on Average Cost | 2.56 |
| Impact on Internal Controls | 1.72 |

**Table 1a: Average Rating of the Extent of Intangible Benefits by Issue**

| Position Of Interviewee | Average |
|---|---|
| General Manager / Director / Manager IT Services | 2.64 |
| Chief Financial Officer | 2.84 |
| Service Department Managers | 2.08 |
| It Specialists | 2.55 |
| Operations/ Front End Officers | 2.13 |
| Business Analysts | 2.88 |
| Accountants | 2.83 |
| Process Management Managers | 1.96 |

**Table 1b: Average Rating of the Extent of Intangible Benefits by Position of Interviewee**

| Sector | Average |
|---|---|
| Telecommunications | 1.65 |
| Banking and Insurance | 1.89 |
| Regulation | 2.55 |
| Public/Taxation | 2.33 |
| Service (Tourism) | 1.91 |

**Table 1c: Average Rating of the Extent of Intangible Benefits by Sector**

## 6. DISCUSSION

The aim of this research was to understand the businesses' perception of the nature of intangible benefits that they derive from their IT investments, and how these IT investments contribute to business value. The results of this study indicate that businesses indeed perceive to obtain intangible benefits from their IT investments, and that these investments contribute to organisational value creation. However, while they recognise that the IT investments may only provide intangible benefits, businesses do not treat their IT investments any different from other investments.

Understanding the interaction between the technology and the users of the technology reveal that there are a lot more benefits that IT investments may provide than the widely understood tangible benefits. These benefits are more at the 'personal level' and may not exist 'out there'. This is encouraging, especially for developing economies where local and multinational businesses target their IT investments at the operational level. With this understanding, businesses in developing countries should be able to realise the potential of IT in enhancing process efficiencies, and improving the overall environment of service delivery, and ultimately should see their investments' net benefits. One of the possible limitations of previous studies that provided unconvincing arguments for IT investments potential is that these studies attempted to understand the value creating abilities of IT on the surface level, thus ignoring the recursive synergy between the tool and the users of the tool. An approach that aims to understand what benefits of technology mean to the users provides a more convincing argument that IT investment indeed contributes to business value, and more importantly, has potential in improving the business process performance in developing countries.

An understanding and appreciation of the intangible benefits of IT investments is also important for continuity of IT investments, and this is important for developing countries. The conventional firm-level benefit measures may not always indicate the true potential of investments, as the measures are a product of manipulations. For example, in evaluating the return potential of innovative IT investments, one has to recognise the significant cost of this investment, and any magnitude of return from this investment will fare unfavorably in relation to the magnitude of the investment (Dehning and Richardson, 2002). In such situations, investing companies in developing countries and developed countries may better understand the contributions of their IT investments by considering their intangible benefits and how it helps in value creation.

This study has implications for theory and practice. The perceptions of the businesses on the intangible benefits of IT investment provide comforting incentives, that businesses could derive value from their IT investments, especially at the process level. This is important for businesses that are willing to invest in IT, but may be concerned with the inconclusive evidence on how IT contributes to business value. According to businesses that already invest in IT, if businesses plan their IT investments, they should see process level improvement, and ultimately, this should reflect positively on net benefit. Such assurances from the business community is important for encouraging other businesses, especially in developing countries to make best use of the available IT resources, and appreciate the value that foreign investment into IT brings to their economies. For businesses that have invested into IT, this study provides incentives to continue their investment in IT, as appreciation and use of IT promotes technology readiness. The continuity of investment into IT is important in maintaining process and service efficiency, and may act as the basis for further foreign investment.

For research, this study highlights the importance of recognising the synergy between the technology and the users of technology in understanding how IT may contribute to business value. Understanding this synergy could provide richer insights as to how organisations use their IT resources to derive business value. This could complement the use of predominantly tangible measure to understand the association between factors that relate to business value. The recognition of value creation in organisations as being socially constructed is an important step in promoting confidence in the value creation ability of the IT resources.

## 7. CONCLUSION

Understanding the nature of IT investments benefits is important in evaluating how IT contributes to business value. Prior studies have largely ignored the possible contribution of intangible benefits of IT investments in understanding how it contributes to business value. Prior studies have also ignored the importance of understanding the nature and magnitude of IT investments in the wider context, such as developing countries. Developing countries' businesses perception of the intangible benefits of IT investments suggest that IT indeed contributes to business value, and understanding the nature of the intangible benefits of IT investments may provide richer insights on how IT contributes to business value.

There is scope for further studies to enhance our understanding of how IT contributes to business value. This research is limited to one developing country, and future research could consider more developing countries from various geographical locations to provide an all-embracing picture of the nature of intangible benefits of IT investments. There is also a need to understand the nature of intangible benefits in developed economies, and this can complement the findings of the tangible benefits in understanding how IT investments contribute to business value.

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