

# MASTERS OF BUSINESS ADMINISTRATION

## MANAGEMENT DEGREE

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**TITLE OF PROJECT PAPER**

**THE IMPACT OF INFORMATION SYSTEMS ON THE EFFICIENCY OF  
FINANCIAL ORGANIZATION: AN EMPIRICAL INVESTIGATION**

INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA  
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**THE IMPACT OF INFORMATION SYSTEMS  
ON THE EFFICIENCY OF FINANCIAL ORGANIZATION:  
AN EMPIRICAL INVESTIGATION**

**BY**

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**(MATIC NO: G 9610066/MBA)**

**MBA PROJECT PAPER**

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*To,  
My Dearest Parents and My Wife,  
Brothers, Nephew, Niece and  
In Loving Memory of My Aunt*

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## ABSTRACT

In the financial industry, mainly banking and finance sectors, 40 per cent of the total capital expenditure consist of investments related to information systems and technologies. However, the direct returns from the investments are very difficult to justify and measuring the returns has been the challenging tasks for the decision makers, since most of the benefits are intangible and long term.

In spite of the limitations, it is critical for the organization to assess and identify the contributions of IS of efficiency and productivity of the organization. Failure to address these issues may lead to a poor risk of investments or no investments at all and it could eventually jeopardize the on-going concern of the entity given the competitive nature of the industry.

This study examines the impact of IS on the efficiency of financial organization, and highlights the needs to consider alternatives approaches in evaluating the returns of IS investments, mainly efficiency and productivity measures. A survey was conducted to assess the impact of IS based on the variable measures; efficiency and productivity measures.

The empirical findings, points that the impact of IS significantly affects the efficiency of the organizations and by improving the efficiency and productivity measures it could further enhance the efficiency of the organization. Lastly, there is a need to formulate an appropriate evaluation model that will be widely accepted by the IS professionals and the top management.

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# CHAPTER ONE

## INTRODUCTION

Technology is a dynamic force. As it becomes an increasingly vital element in the competitive landscape of the financial industry, it had revolutionized the very nature of selling and delivering of financial products and services. The first technological revolutions transformed the manufacturing and agricultural products. Now the continued evolution of technology has created an information revolution. The needs of the financial industry are the driving force in the development of new information-based technologies.

In Malaysian scenario financial institutions particularly banking sector, has been the largest investor in the information technology and information systems. And in the recent years and for the foreseeable future, the banking sector has been facing rapidly changing business environment, such as downsizing, outsourcing, leveraged buyouts, strategic alliances, globalization, business process re-engineering and total quality management. These environmental changes and the competitiveness of the financial industry has prompted the banks to invest heavily on the information systems (IS), in an effort to improve the efficiency and enhance customer services. Many successful financial institution have clearly demonstrated that information systems and technologies can be a powerful competitive weapon that can be used to capture market share, improve customer services, reduce operating costs, and create new products and services.

The need and ability to evaluate IS/IT investments effectively is given greater importance today than at any time in the past, due to the large amounts being spent on IS/IT by organizations. The increasing focus on value for money in all areas of business activity and prompted by the recent economic recession, and the continually changing of characteristics of information technology, has further reinforced the need to justify the effectiveness of IS in contributing to organization's competitive advantage.

### **1.1 The Problem Statement**

Most of the decision makers in the financial sector mainly banking and finance, have difficulty to assess the returns from IS and IT because many of the returns are associated with intangible benefits and generally the financial evaluations tools (ROI, NPV and IRR) are often inappropriate and misleading. There is a need to explore beyond then the financial analysis, to recognize the benefits that are resulted from the IS investments that affects the productivity and efficiency of the organization. One way to assess is to check the relationship between investment in IS and the efficiency measures. And also to assess the role and contribution of IS to organization's efficiency.

## **1.2 General Objectives**

The main objectives of the study are to identify and recognize the contribution of IS investments on the broader goals and to the objectives of the organization. And these include various productivity and efficiency variable measures. And these variables are grouped and categorized as the productivity and efficiency measures that affects the returns from IS investments in the banking and finance sector.

Specific Objectives:

Specifically the purpose of this study is to:

- i. To evaluate the contribution of IS to organization's efficiency
- ii. To evaluate the contribution of IS to organization's productivity
- iii. To ascertain the IS/IT technology profile.
- iv. To identify the critical issues related to IS investments.

## **1.3 Limitations of the Study**

The first limitation of the study is that the study only focused on banking institutions and finance companies, other financial institutions such as merchant banks, securities firms, money brokers, discount houses and insurance companies was not included mainly to ensure consistency in getting the data from a specific industry, banking and finance. The second limitation was the selection of the

variables that was based on the similar study conducted by Dr. Uma Gupta & William Collins (USA, 1977).

#### **1.4 Justifications**

Firstly it provides insight for the decision-makers to recognize the contribution of IS investment in terms of productivity and efficiency for the organization. In a spite of the huge investments in IS, there is a nagging concern among organizations CEOs that the return from these investments on profits, productivity, and payoffs is grossly inadequate. And these issues are very critical for the CEO and top managers who are involved in the decision making process that leads to investment in the IS in particular to banking and finance sector. Apart from the conventional capital budgeting, the recognition of IS contribution in terms of the efficiency to the organization will provide additional intangible benefits that can substantiated by using productivity and efficiency measures. And this additional measures will provide necessary evidence for the need to invest in IS. And the CEOs will not subscribe to the thought that the returns from IS is only associated to capital budgeting measures but also to productivity and efficiency measures too.

#### **1.5 Approach to the Problem**

The study examines the relevance of productivity and efficiency measures in relation to evaluating the IS investment's return in banking and finance

organizations. Traditional and conventional approach that includes the financial models, and often used methods are; payback period, internal rate of return and net present value do not reflect the actual contribution of IS to the organization's efficiency.

Selected variables that represent the efficiency and productivity measures of an organization are used to evaluate the IS investment returns. The results of the variable measures are discussed and analysed in the context of efficiency and productivity of an organization. Finally it is concluded that IS impacts the efficiency of the organization based on the results of the measures.

## **1.6 Organization of the Project Paper**

The rest of this project paper will be presented in six chapters. An overview of the IS functions and the core capabilities are described in Chapter Two. Previous research and studies that are relevant to the study will be reviewed in Chapter Three. Notably the journal and articles related to the various measurements of IS investment returns will be covered in this chapter.

The methodology for the research paper will be presented in Chapter Four. The results are extensively discussed in the Chapter Five. The aggregate results of the survey findings are shown in table format in percentage form as a comparison to other variables or factors. The analysis of the results and discussions are reported in

Chapter Six. Chapter Seven contains summary, conclusion, and also recommends the suggestions for further research.

## **CHAPTER TWO**

### **FRAMEWORK OF INFORMATION SYSTEMS FUNCTIONS IN FINANCIAL ORGANIZATION**

Banking and finance organizations are experiencing more volatile marketplaces and global competition. The shortened products and services life cycles, customer's pressures for tailored offerings and demanding for higher performance standards have forced the banking and finance sector to increasingly depend on the new information systems technologies platform as an catalyst and enabler to compete effectively in the financial industry and to maintain a sustainable growth.

The IS component of the organization must be constructed rapidly and effectively despite the fact that the IT/IS industry experiences massive changes in IT product capability and frequent shifts in system development approaches.

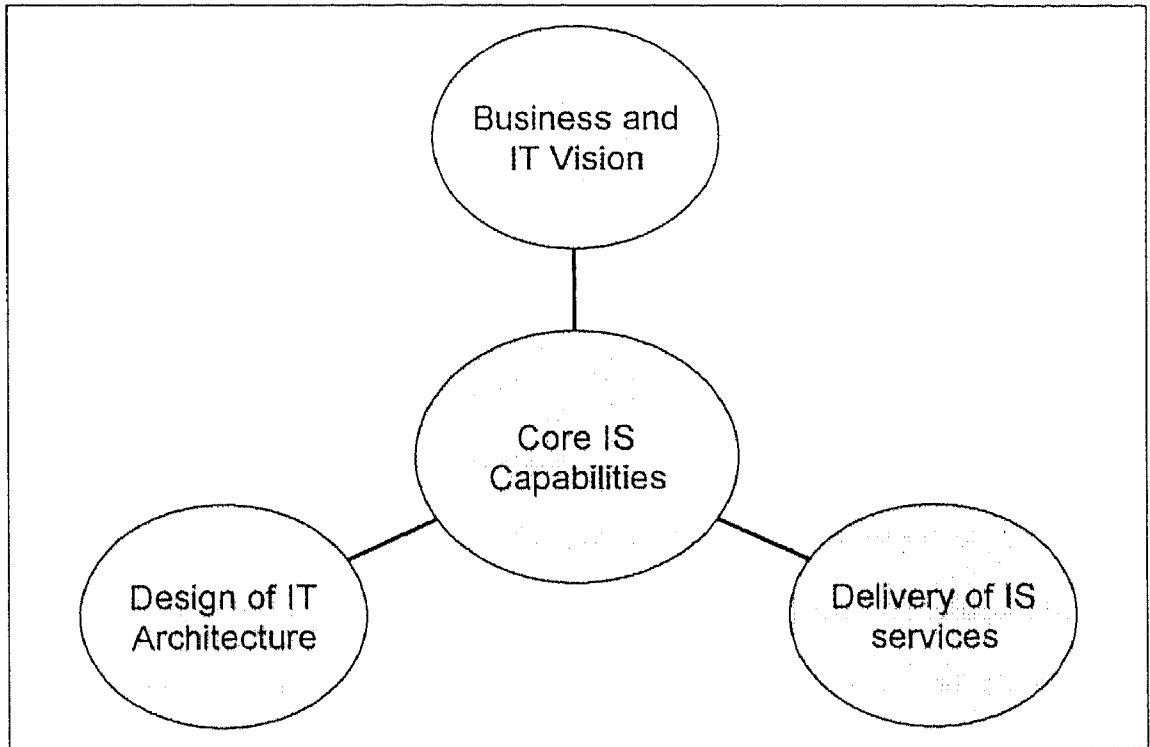
#### **2.1 Challenges in Exploiting IT**

There are 3 enduring challenges in the exploitation of IT that an organization must successfully address over time (see Figure 1). The banking and finance companies must retain the capacity to regularly adjust their positioning in each area – and sometimes radically change their chosen business strategies, IT platforms, or arrangements for delivering services.



**Figure 1.**

**Enduring Challenges in IT Exploitation**



Source: Core IS capabilities of Exploiting IT by David F. Feeny (Sloan Management Review, Spring 1998)

**i. Business and IT Vision**

The challenge of business and IT vision is to address the need for two strategic alignment between business and technology. An organization must consistently focus information system efforts to support business strategy. In addition, IT developments can enable new, superior business strategies. Business and IT vision requires insightful assessments of the myriad claims about what technology can do and how to use it.

**ii. Delivery of IS Services**

The challenge of delivery of IS services at low cost and high quality is being transformed by the emerging vibrant services market. The first aspect of the delivery challenge is to proactively devise and manage effective sourcing strategies and the challenge is more complex involving the assessment and potential adoption of new IT management prescription and fundamental different development methods.

**iii. Design of IT Architecture**

The challenge of design of IT architecture – the choices of technical platform on which to mount IS services, represents the first critical step in achieving the technology asset of the business. It is linked closely to changes in technology capability and supplier health. The selection of the technological platform is very critical to seek stability over time on the technical platforms. However most of the IT product sector companies are quite commonly dominated by companies that scarcely existed few years ago. The IT architecture needs to remain open to the changing demands of the host business that will enable provision IS services beyond the historic confines of the business.

A business that fails in addressing the above 3 challenges will be severely handicapped, strategically and economically. Consequential the returns from the IS

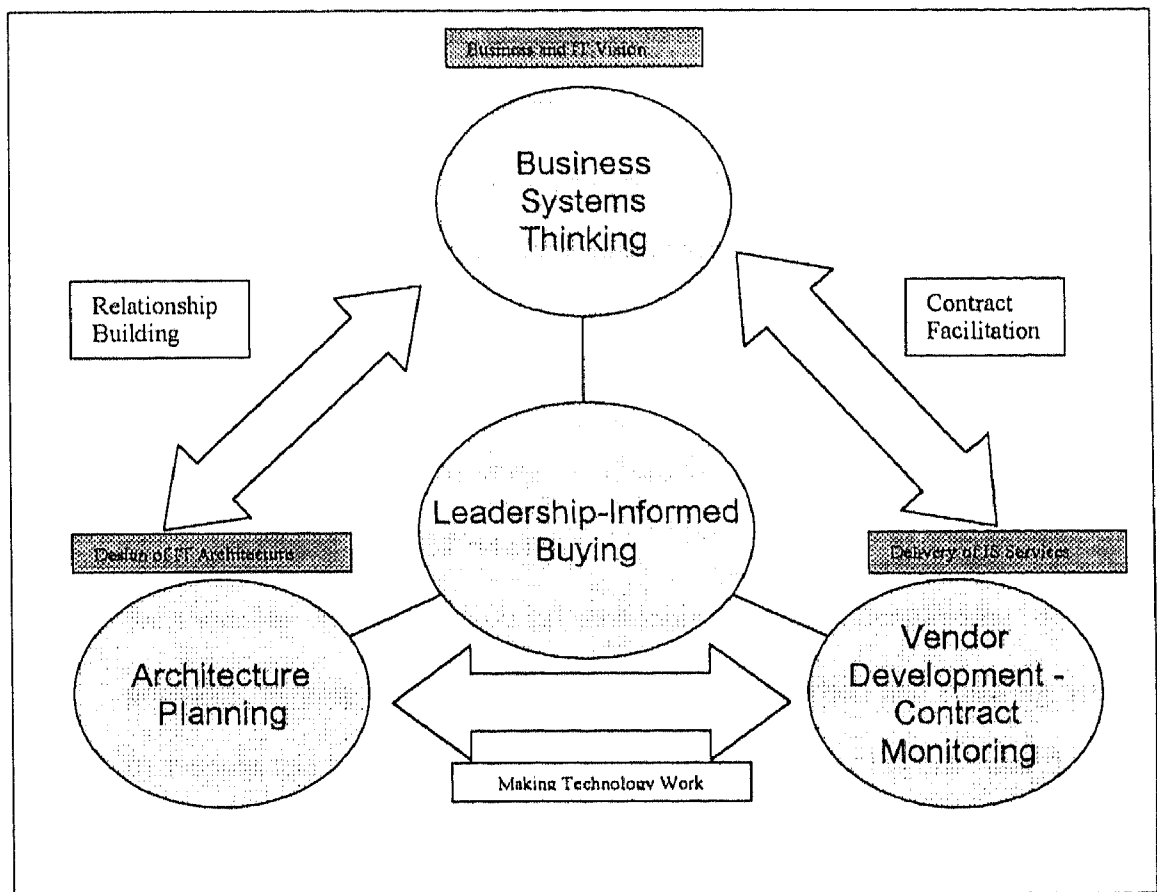
investments will be grossly inadequate and a poor judgement of the returns will lead to risk of poor investment or no further investment in IS.

## 2.2 Core Capabilities of IS

The following core capabilities (see Figure 2) required both to underpin the pursuit of high-value-added applications of IT and to capitalize on the external market's ability to deliver cost-effective IT services:

**Figure 2**

### Nine Core IS Capabilities



Source: Core IS capabilities of Exploiting IT, (Sloan Management Review, Spring 1998)

**i. Leadership – Integrating IS/IT effort with business and activity**

Effective IS/IT leaders devise the organizational arrangements that includes structures, processes, staffing and address each challenge area and to manage their interdependencies. The leaders set goals and direction and also influence the overall business perception of IT's role and contribution and establish strong business/IT relationships at the executive level, and leverage those relationships to achieve a shared vision for IT.

**ii. Business Systems Thinking – Envisioning the business process that technology makes possible.**

Experts in the business systems thinking understand connections and interdependencies of the business activity, which enable them to build and communicate holistic views of current organization and activity as a basis for envisioning new patterns. And this enhances the progress of integrating business development with IT capabilities.

**iii. Relationship Building – Getting the business constructively engaged in IS/IT issues.**

Relationship building involves developing users' understanding of IT's potential, helping users and IT specialist work together, and ensuring users' ownership and satisfaction. The culture gap between "techies" and "users" can occur in delivering IS services, and this gap can be eliminated through

education (both sides) and facilitation by the participating parties in a constructive dialogue.

**iv. Architecture Planning – Creating the coherent blueprint for a technical platform that responds to current and future business needs**

Through insight into technology, suppliers, and business directions, architecture planners develop the vision of an appropriate technical platform. And they also formulate associated policies that ensure necessary integration and flexibility in IS services, the basis for shared IT services across the firm, called the IT infrastructure.

**v. Making Technology Work- Rapidly achieving technical progress – by one means or another**

In the overlap between the challenges of IT architecture design and delivery of IS services is the core capability of making technology work. In a complex environment , networked, multisupplier systems, technical “fixers” make critical contributions; technically solving the problem to address the business needs that cannot be properly satisfied by standard technical approaches.

**vi. Informed Buying – Managing the IS/IT sourcing strategy that meets the interests of the business.**

A second core IS capability that overlaps all three challenge areas is informed buying, which involves analysis of the external market for IS/IT services, selection of a sourcing strategy to meet business needs and technology issues, and leading the tendering, contracting, and service management process.

**vii. Contract Facilitation – Ensuring the success of existing contracts for IS/IT services.**

Contract facilitation provides a single point of contact through which the user can ensure that problems and conflicts are resolved fairly and promptly, within, a framework of agreements and relationships.

**viii. Contract Monitoring-Protecting the business's contractual position, current and future**

Effective contract monitoring ensures the supplier to be accountable on both existing service contracts and the developing performance standards of the services market.

**ix. Vendor Development – Identifying the potential added value of IS/IT service suppliers.**

In vendor development, organizations look beyond existing contractual arrangements to explore the long term potential for suppliers to create win-win situations in which the supplier increases its revenues by providing services that increase business benefits.

#### **2.4 The Challenges Ahead for IS Capabilities**

Core IS capabilities are those necessary and sufficient to ensure that an organization can exploit changing markets of technology and services – to achieve business advantage through IT over time. The core IS capability model is the blueprint for sustaining an organization's ability to exploit IT. Given the challenges ahead, the development of the framework of core IS capability should be given high priority task, that will direct affect the returns from IS investments.

## **CHAPTER THREE**

### **LITERATURE REVIEW**

Under this chapter, studies and research works on the IS/IT associated with investment returns, evaluation and information productivity will be cited and reviewed as the literature review for the research paper.

The evaluation of IS investments has been recognized as a major problem since the organizations increased their spending on IS/IT requirements. IS investment constitute a large and increasing portion of the capital expenditure of many organization, particularly financial institutions. And these huge investments have prompted the CEOs concern that these investment returns are both grossly inadequate and long overdue.

First part of the chapter highlights various evaluation practices and latter emphasizes on the organization's efficiency and productivity measures.

#### **3.1 Evaluation Method - A Multidimensional Approach, Guy Fitzgerald (Journal of Information Technology, 1998 –13)**

Based on the traditional method, most of the IS/IT projects are approved if the project shows clear links to the organization's overall business strategy, and others have adopted strictly financial methods. The problem with the latter approach is on the justification process of the benefits that are derived from the investments that