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ABSTRACT

In this research paper, a tobacco manufacturing company has been studied with regards to the implementation of software development projects. The company is using many software systems and as a regular process either projects are initiated to develop new system or to enhance existing systems. The company has an established project management methodology. In this study emphasis is to see how far the project management methodology is followed, what are the problems with the implementation of the methodology and recommendations are given to improve the methodology.

APPROVAL PAGE

TITLE OF THESIS:

SOFTWARE PROJECT MANAGEMENT PRACTICES:
A CASE STUDY IN MULTINATIONAL TOBACCO
MANUFACTURING COMPANY

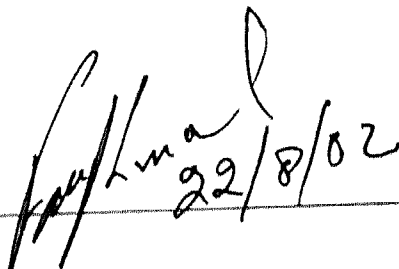
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22/8/02


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Assistant professor Dr. Farooq Ahmed

Date:

DECLARATION

I hereby declare that this is the result of my own investigations, except where otherwise stated. Reference notes acknowledge other sources and a bibliography are appended.

Signature:  _____

Name: **WONG FEE JEN**

Date: 06/08/2007

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DEDICATION

This study is dedicated to:

My husband, Ooi Chin Keong, and my family members, whose love, care and encouragement empowered me to go on with the ups and down of life.

It also goes out to my classmates, colleagues and friends – especially Larry Borje, Selina Tan, Eddie See, Asmadi Salleh, Jane Yap, and Yong Tien Fui – for their support and motivation.

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CHAPTER 1: INTRODUCTION

IT is an enabling technology in this tobacco manufacturing company. The purpose of this project paper is to introduce, analyze and provide recommendation to the system project management methodology that is currently being used in the organization. Basically there are five process groups in the project management methodology. There are Initiating, Planning, Executing, Controlling and Closing. The process groups are linked by the results they produce – the result or outcome of one becomes an input to another. These processes in the process groups are overlapping and interact with each other throughout the life of the project.

The research of this project paper will concentrate on completed, on-going and future implementation of projects in the company. The completed projects are namely, World Leaf System (WLS), Maintenance Management System (MEX), Asian Sales & Merchandising System (ASMS) and Human Resource Management System (HRMS). As for on-going projects example are: Human Resource In SAP (SHARP), Leaf Data Analysis Reporting (LEDAR), Environmental, Health & Safety System (EHSS) and Information Management System (IMS). The future projects are: Sales Management Reporting, Warehouse Management System, Product/ Labour Costing System and Supplier Management System. The research will be conducted through studying and reviewing documents, interviewing personnel involved in the project implementation process, observation and personal experience in the project implementation process.

In this project paper, the research shows that the company's project management methodology is well developed and proven. The methodology must be maintained,

reviewed and updated frequently as the business and organization continues to change and evolve.

In Chapter 2, we are going to discuss in general what are project management and the differences between other forms of project management (construct an office tower or a bridge) and IT project management. A project is a collection of related tasks and activities undertaken to achieve a specific objective or goal. Thus, all projects (IT or otherwise) should have a clearly stated goal and defined beginning and end [McNurlin & Sprague, 2002].

In Chapter 3, the company profile and type of business will be introduced. The geographic location of the company will be shown in this chapter. A description and purpose of all business system applications are running in the production environment will be discussed. The business system applications are running in three main locations, namely the factory, main office and sales area distribution centers. The company is a global organization and the corporate strategy is to use SAP as the backbone of all business system applications. Therefore, in order to align with global direction, the company has initiated some software project implementations to integrate business applications into SAP. The company's ongoing 3 year-plan is highlighted in this chapter too.

The project management principles, processes and methodology in the organization will be introduced under Chapter 4. The project management principles will elaborate in detail the motivations and implications of each project stage. Under the same chapter, the project management processes, explanation, linkage and interactions between processes are clearly depicted. The brief contents of the project management methodology at five stages –

Initiating, Planning, Executing, Controlling and Closing are listed too. In order to analyze the use of software project management methodology, interviews were conducted with the Project Manager, the Project Advisor and the MIS Manager. The interviews have revealed that in order to appoint a business user to become an IT Project Manager, he / she needs project management training. The Project Manager is expected to be highly skilled in the specialty area in which he /she works. He / she must have skills in budgeting, scheduling, and human and material resource allocation (the traditional skills associated with project management). Beyond this, project managers should have significant insights into risk management, quality management, contract management, and a wide array of general business skills

In the last chapter, Chapter 5, recommendations are provided to improve the process of software project management. Under the company context, appropriately skilled project manager is the key success of project implementation. The conclusion is ongoing and appropriate training needs to be provided to project resources. This is to ensure the project and tasks can be managed and performed professionally and effectively. The commitment and full support from top management and the project team members are extremely important in the software project management. This will ensure that the business achieves the desired benefits from the project and have the leading edge in the tobacco industry.

CHAPTER 2: PROJECT MANAGEMENT

2.1 Project

Organizations perform work. Work generally involves either operations or projects, although the two may overlap. Operations and projects share many characteristics; for example, they are:

- Performed by people.
- Constrained by limited resources.
- Planned, executed, and controlled.

Operations and projects differ primarily in that operations are ongoing and repetitive while projects are temporary and unique. A project can thus be defined in terms of its distinctive characteristics – a project is a temporary endeavour undertaken to create a unique product of service. *Temporary* means that every project has a definite beginning and a definite end. *Unique* means that the product or service is different in some distinguishing way from all similar products or services [Project Management Institution, 1996].

Projects are undertaken at all levels of the organization. They may involve a single person or many thousands. They may require less than 100 hours to complete or over 10,000,000 hours. Projects may involve a single unit of one organization or may cut across organizational boundaries as in joint ventures and partnering. Projects are often critical components of the performing organization's business strategy. Examples of projects include:

- Developing a new product or service.
- Effecting a change in structure, staffing, or style of an organization.
- Designing a new transportation vehicle.
- Developing or acquiring a new or modified information system.
- Constructing a building or factory.
- Running a campaign for political office.
- Implementing a new business procedure or process.

2.1.1 Temporary

Temporary means that every project has a definite beginning and a definite end. The end is reached when the project's objectives have been achieved, or when it becomes clear that the project objectives will not or cannot be met and the project is terminated. Temporary does not necessarily mean short in duration; many projects last for several years. In every case, however, the duration of a project is finite; projects are not ongoing efforts.

In addition, temporary does not generally apply to the product or service created by the project. Most projects are undertaken to create a lasting result. For example, a project to erect a national monument will create a result expected to last centuries.

Many undertakings are temporary in the sense that they will end at some point. For example, assembly work at an automotive plant will eventually be discontinued, and the plant itself decommissioned. Projects are fundamentally different because

the project ceases when its declared objectives have been attained, while non-project undertakings adopt a new set of objectives and continue to work.

The temporary nature of projects may apply to other aspects of the endeavour as well:

- The opportunity or market window is usually temporary – most projects have a limited time frame in which to produce their product or service.
- The project team, as a team, seldom outlives the project – most projects are performed by a team created for the sole purpose of performing the project. The team is disbanded and members reassigned when the project is complete.

2.1.2 Unique Product or Service

Projects involve doing something which has not been done before and which is, therefore, *unique*. A product or service may be unique even if the category it belongs to is large. For example, many thousands of office buildings have been developed, but each individual facility is unique – different owner, different design, different location, different contractors, and so on. The presence of repetitive elements does not change the fundamental uniqueness of the overall effort. For example:

- A project to develop a new commercial airliner may require multiple prototypes.
- A project to bring a new drug to market may require thousands of doses of the drug to support clinical trials.

- A real estate development project may include hundreds of individual units.

Because the product of each project is unique, the characteristics that distinguish the product or service must be progressively elaborated. Progressively means “proceeding in steps; continuing steadily by increments” while elaborated means “worked out with care and detail; developed thoroughly” [The American Heritage Dictionary of English Language, Third Edition. 1992. Boston, Mass.: Houghton Mifflin Company]. These distinguishing characteristics will be broadly defined early in the project and will be made more explicit and detailed as the project team develops a better and more complete understanding of the product.

Progressive elaboration of product characteristics must be carefully coordinated with proper scope definition, particularly if the project is performed under contract. When properly defined, the scope of the project – the work to be done – should remain constant even as the project characteristics are progressively elaborated.

2.2 Project Management

The key concepts of project management are identifications of the outcomes to be achieved, the feasibility of the project to be undertaken and the planning to achieve desired outcomes. The key role of project management is to ensure the delivery of projects on time and within budget [Dober, December/January 1997].

Project management is simply the management of a project, notes Michael Matthew of Matthew & Matthew consulting firm [Matthew & Matthew, July 2000]. This definition

may sound simple and self-evident but that does not make it easy. Many people get confused or concerned about IT projects management because it involves the ‘T’ work: technology. In reality, IT project management is not much different from other forms of project management, such as those used to construct an office tower or a bridge.

It has been said that IT project management is 10 percent technical and 90 percent common sense or good business practices. Indeed many of the best IT managers do not have a background in IT at all, but they possess the important skills of communication, organization, and motivation. Perhaps the most difficult component of IT project management is keeping in mind, and under control, all the interdependencies of the numerous tasks being undertaken.

Project management [Project Management Institution, 1996] is the application of knowledge, skills, tools, and techniques to project activities in order to meet or exceed stakeholder needs and expectations from a project. Meeting or exceeding stakeholder needs and expectations invariably involves balancing competing demands among:

- Scope, time, cost and quality.
- Stakeholders with differing needs and expectations.
- Identified requirements (needs) and unidentified requirements (expectations)

The term project management is sometimes used to describe an organizational approach to the management of ongoing operations. This approach, more properly called ‘management by projects’, treats many aspects of ongoing operations as projects in order to apply project management to them.

2.3 The Project Management (Process) Knowledge Areas

The Project Management Knowledge Areas describe project management knowledge and practice in terms of its component processes. These processes have been organized into nine knowledge or subject areas as described below:

- **Project Integration Management**, describes the processes required to ensure that the various elements of the project are properly coordinated. It consists of project plan development, project plan execution, and overall change control.
- **Project Scope Management**, describes the processes required to ensure that the project includes all the work required, and only the work required, to complete the project successfully. It consists of initiation, scope planning, scope definition, scope verification, and scope change control.
- **Project Time Management**, describes the processes required to ensure timely completion of the project. It consists of activity definition, activity sequencing, activity duration estimating, schedule development, and schedule control.
- **Project Cost Management**, describes the processes required to ensure that the project is completed within the approved budget. It consists of resource planning, cost estimating, cost budgeting, and cost control.
- **Project Quality Management**, describes the processes required to ensure that the project is completed within the approved budget. It consists of resource planning, cost estimating, cost budgeting, and cost control.
- **Project Human Resource Management**, describes the processes required to make the most effective use of the people involved with the project. It consists of organizational planning, staff acquisition, and team development.

- **Project Communications Management**, describes the processes required to ensure timely and appropriate generation, collection, dissemination, storage, and ultimate disposition of project information. It consists of communications planning, information distribution, performance reporting, and administrative closure.
- **Project Risk Management**, describes the processes concerned with identifying, analyzing, and responding to project risk. It consists of risk identification, risk quantification, risk response development, and risk response control.
- **Project Procurement Management**, describes the processes required to acquire goods and services from outside the performing organization. It consists of procurement planning, solicitation planning, solicitation, source selection, control administration, and contract closeout.

2.4 Project Management In Context

Projects and project management operate in an environment broader than that of the project itself. The project management team must understand this broader context – managing the day-to-day activities of the project is necessary for success but not sufficient.

2.4.1 Project Phases And the Project Life Cycle

Because projects are unique undertakings, they involve a degree of uncertainty. Organizations performing projects will usually divide each project into several

project phases to provide better management control and appropriate links to the ongoing operations of the performing organizations. Collectively, the project phases are known as the project life cycle.

2.4.2 Characteristics of Project Phases

Each project phase is marked by completion of one or more deliverables. A deliverable is a tangible, verifiable work product such as a feasibility study, a detail design, or a working prototype. The deliverables, and hence the phases, are part of a generally sequential logic designed to ensure proper definition of the product of the project.

The conclusion of a project phase is generally marked by a review of both key deliverables and project performance in order to (a) determine if the project should continue into its next phase and (b) detect and correct errors cost effectively. These phase-end reviews are often called phase exits, stage gates, or kill points.

Each project phase normally includes a set of defined work products designed to establish the desired level of management control. The majority of these items are related to the primary phase deliverable, and the phases typically take their names from these items: requirements, design, build, test, start-up, handover, and others as appropriate.

2.4.3 Characteristics of the Project Life Cycle

The project life cycle serves to define the beginning and the end of a project. For example, when an organization identifies an opportunity that it would like to respond to, it will often authorize a feasibility study to decide if it should undertake a project. The project life cycle definition will determine whether the feasibility study is treated as the first project phase or as a separate, stand-alone project.

The project life cycle definition will also determine which transitional actions at the end of the project are included and which are not. In this manner, the project life cycle definition can be used to link the project to the ongoing operations of the performing organization.

The phase sequence defined by most project life cycle generally involves some form of technology transfer or hand-off such as requirements to design, construction to operations, or design to manufacturing. Deliverables from the preceding phase are usually approved before work starts on the next phase. However, a subsequent phase is sometimes begun prior to approval of the previous phase deliverables when the risks involved are deemed acceptable.

2.5 Project Stakeholders

Project stakeholders are individuals and organizations who are actively involved in the project, or whose interests may be positively or negatively affected as a result

of project execution or successful project completion. The project management team must identify the stakeholders, determine what their needs and expectations are, and then manage and influence those expectations to ensure a successful project.

Key stakeholders on every project include:

- Project manager – the individual responsible for managing the project.
- Customer – the individual or organization that will use the project product.
There may be multiple layers of customers. For example, the customers for a new pharmaceutical product may include the doctors who prescribe it, the patients who take it, and the insurers who pay for it.
- Performing organization – the enterprise whose employees are most directly involved in doing the work of the project.
- Sponsor – the individual or group within the performing organization who provides the financial resources, in cash or in kind, for the project.

In addition to these there are many different names and categories of project stakeholders – internal and external, owners and sponsors, suppliers and contractors, team members and their families, government agencies and media outlets, individual citizens temporary or permanent lobbying organizations, and society at large. The naming or grouping of stakeholders is primarily an aid to identifying which individuals and organizations view themselves as stakeholders. Stakeholder roles and responsibilities may overlap, as when an engineering firm provides financing for a plant it is designing.