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This report is submitted in partial fulfillment of the requirements for the Bachelor of Information and Communication Technology (Software Development for BITS).

**FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
KOLEJ UNIVERSITI TEKNIKAL KEBANGSAAN MALAYSIA**

2005


ADMISSION

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DEDICATION

To my beloved parents, my siblings Rosmawati, Rosman Yazi, Rozaidi Yazi, Rozaimi Yazi, Rosmahadi Yazi, and friends especially Zureen Bt Mokhtar, housemate at No.44 Jalan TU 29, Taman Tasik Utama and others..

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ABSTRACT

The concept of iOffice is groupware means the software that can be used by a group of people who are working on the same information but may be distributed in space. The web collaboration software is easy to use and can improve productivity of cooperative work in your workgroup or whole organization. iOffice offers workgroup powerful collaboration software tools. It helps users to process any application in the organization. Documents or details of documents are stored on a server(s) which any PC user with the appropriate security, significant reduction of paper based support system processes. It will allow users to manage the contact information of the clients, customers, and vendors in the public address book. Each iOffice user can have a private address book to store personal contact information, helps users to record and track your working time and makes it easily reserve equipment, a room, book, or service. The purpose of developing the system is to ensure the company can manage data and works in more efficient, systematic and accurate way.

ABSTRAK

Konsep yang digunakan dalam pembangunan sistem iOffice adalah *groupware* yang bermaksud perisian yang digunakan sekumpulan manusia yang bekerja dalam satu kumpulan tetapi dari tempat yang berbeza. Penggunaan perisian yang berasaskan web adalah lebih mudah dan dapat meningkatkan produktiviti dalam sesebuah organisasi. iOffice menawarkan kerjasama perisian yang efektif. Ia dapat membantu proses aplikasi dalam sesebuah organisasi. Dokumen atau maklumat dokumen disimpan di dalam pelayan dimana setiap individu mempunyai kebenaran akses dengan menggunakan kata laluan. Selain itu ia turut mengurangkan penggunaan kertas. Ia juga membenarkan pengguna menguruskan maklumat pelanggan, pembekal dan sebagainya dengan lebih efisien. Selain itu, pengguna sistem juga dapat membuat tempahan kemudahan pejabat. Tujuan sistem ini dibangunkan adalah untuk memastikan syarikat dapat menguruskan data dan bekerja dengan lebih efisien.

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CHAPTER I

INTRODUCTION

1.1 Project Introduction

Despite the growth in information and communication technology, computerized application is required to have some basic intelligence. Moreover, Artificial Intelligence (AI) has gained its place in information technology (IT) world nowadays and requires for a perfect humanized computing environment. Undoubtedly here, humanized application is the trend of future IT world.

The project proposed is called 'iOffice'. According to Wenger, E. (1987) the words of 'intelligence' mean the ability to comprehend; to understand; and profit from experience. The word 'office' means the place of business where professional or clerical duties are performed. The concept of iOffice is a groupware means the software that can be used by a group of people who are working on the same information but may be distributed in space.

The web collaboration software is easy to use and can improve productivity of cooperative work in your workgroup or whole organization. iOffice offers workgroup powerful collaboration software tools. iOffice is an intelligence system that help users to manage the workgroup in organization. It is including the timecard, scheduler, calendar,

workflow, address book, information and facilities reservation that can be manage through the iOffice.

1.2 Objective

Every system development have objective to achieve for ensuring that project development were successful. Objectives for iOffice system are as follows:

- i. **Organizational Workflow.**
Many people can have access to the same system simultaneously, and documents do not need to be physically in one place to be processes as a whole. The documents are stored on a server(s) which any PC user with the appropriate security.
- ii. **Managerial workflows.**
The status of all work can be known at any time. The manager of the office/organization can electronically view the work queue and shift work appropriately.
- iii. **Help users to monitor the work.**
Help users to process any application in the organization.
- iv. **Improve New Technology.**
The documentation in electronic form can be simultaneously routed to several individuals at the same place in the organization.
- v. **Reduce Paper Usage.**
It is expensive to maintain paper based files. It is included the office space, personnel to maintain the managerial documentation.

- vi. Allows users to manage the contact information.
It will allow users to manage the contact information of the clients, customers, and vendors in the public address book. Each iOffice user can have a private address book to store personal contact information
- vii. Improves user ability to anticipate, manage and respond to changes to maximize business opportunities.
iOffice will allow users to manage and participate in the organization workflows.

1.3 Project Scope

The concept of iOffice is groupware means the software that can be used by a group of people who are working on the same information but may be distributed in space. So, the features of iOffice are as follows:

- i. Scheduler that enables user to view schedules. Users can access the schedule for the specific members and groups.
- ii. To-Do allows users to add or view the activities or assignment.
- iii. Time Card helps users to record. Appointed users can authorize time taken off.
- iv. Facility Reservation makes it easily reserves equipment or service. Users can also schedule events based on availability of facilities and manage reservation.
- v. Workflow lets users to know the project list from the appropriate resources in a specified order.
- vi. Information lets users to provide information to workgroup members. Users can send an email through the system.

- vii. Address Book allows users to manage the contact information of the clients, customers, and vendors in the public address book.

1.4 Project Benefit

The benefits of iOffice are many people can have access to the same document simultaneously, and documents do not need to be physically in one place to be processes as a whole. Documents or details of documents are stored on a server(s) which any user's personal computer with the appropriate security.

Other benefits are significant additional savings and improvements of new technology, improve user ability to anticipate in the organization management process and users could monitor due dates and set reminders through the calendar function.

It also could manage and respond the changes in order to maximize business opportunities. It is expensive to maintain paper based files. Hard cost include office space, personnel to maintain the files and supplies such as file cabinets, folders, labels, paper clips, post it notes and the paper itself. So, by using iOffice the organization have a manageable working environment.

CHAPTER II

LITERATURE REVIEW

2.1 Introduction

According to Mark Urban Lurain (1998) the Artificial Intelligence (AI) movements already started in late 1950's and early 1960's. Then, workers such as Alan Turing, Marvin Minsky, John McCarthy and Allen Newell thought that computers that could "think" as humans being. Many thought that the main constraint on this goal was the creation of faster and bigger computers. It seemed reasonable to assume that, once human created machines that could think, they could perform any task that associate with human thought, such as instructions.

According to D. Popovic from University of Bremen, Germany (1998), artificial intelligence has been successfully applied in solving complex engineering problems that cannot be mathematically defined in a simple way. Artificial Intelligence (AI) is relatively a new in computer science technology as compared to the well-established engineering science, so that its applications are still in the initial stage, at least as far as the management and control of industrial plants are concerned.

Initially it was viewed as the activity area of software engineer dealing with the knowledge acquisition, structuring, storing, processing, and retrieval required for solving cognition, classification, and other high level problems such as speech recognition and video data processing, scene analysis, natural language understanding and so on. In order to solve the problems, AI borrows operational tools from such disciplines as formal logic, predicate calculus, graph theory and theory of system, shaped in the past century by George Boole et.al (1992).

Mr. Kilter from Baskent University said that artificial intelligence is computer-based system with abilities to learn language, accomplish tasks, use perceptual apparatus, emulate human expertise and decisions making.

Business interests in artificial intelligence are as follows:

- i. Preserve expertise.
- ii. Create knowledge base.
- iii. Mechanism not subject to feeling, fatigue, worry and crisis.
- iv. Eliminate routine and satisfying jobs.
- v. Enhance knowledge base.

2.2 Case Study

2.2.1 Artificial Intelligence System Definition

Ms. Fanny Huitenga (1987) said that Artificial Intelligence is an interdisciplinary program with contributions from computer science, psychology, philosophy, linguistics and neuroscience for the study of intelligence and intelligent systems. Ms. Fanny Huitenga consider that humans and computers as natural and artificial information processing systems, thus capturing the whole spectrum from machine-oriented (Artificial Intelligence) to nature-oriented (Cognitive Science) system perspectives. A computer program may be called intelligent if it exhibits behavior that would be called intelligent in humans.

Mr. Kilter from Baskent University (1987) said that artificial intelligence is computer-based system with abilities to learn language, accomplish tasks, use perceptual apparatus, emulate human expertise and decisions making.

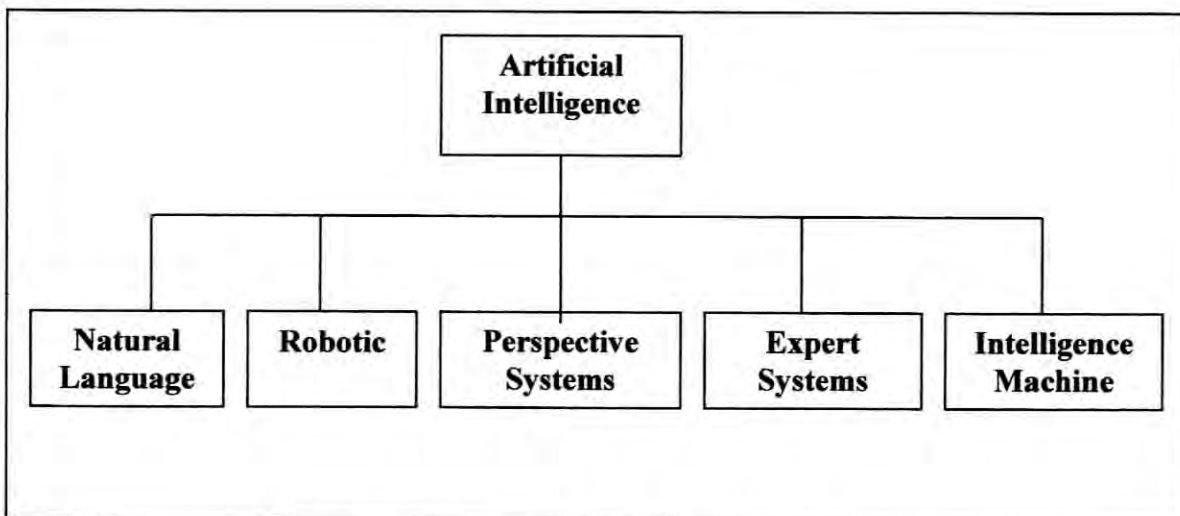


Figure 2.1: Artificial Intelligence Family

Maslita Abd. Aziz (1998) from Universiti Utara Malaysia said in her theses *Electronic Group Tools to Support the Software Development Process in Distributed Setting*, groupware is a powerful tool that helps software development process, and improves the performance of teamwork and projects. The objective of this tool is to reduce the system or product development time through a better integration of activities and processes. Groupware involves the interaction of a diverse group of individuals who may be settled over a wide geographical range to enable the effectiveness of communication among them, there are certain technological concepts that must be organized.

The iOffice system is using the groupware as a tool to help the development process and improve the performance of teamwork of the project.

2.2.2 Artificial Intelligence Office Management System Benefit

According to Computerworld.com the benefit of Intelligence System is companies can improve their internal operations and slash costs through the use of business performance management (BPM) tools, according to attendees at a conference on the technology. But there are considerable challenges to be surmounted.

E.M Mahler et.al (1986) found that artificial intelligence system also can be used in the medical areas. In their thesis entitled with *An Artificial Intelligence System To Predict Progression of Immune Dysfunction in Healthy Older Patient Health Watch* is a longitudinal prospective study of healthy aging through which physicians and other health care providers can use person-specific data to monitor health and to identify interventions, while researchers continue to assess aging effects and determinants of healthy aging. The study uses a computer-based monitoring system for tracking the biochemical, hematological, physiological and behavioral parameters (n = 38) in men

and women over their lifespan. This "person-specific" data has been studied in close to 3000 individuals for up to 23 years. Health Trend Charts summarize annual updates for biochemical (n = 17), hematological (n = 8) and physiological (n = 6) parameters. A Health Profile Index, derived from a questionnaire updated by each patient annually, provides 7 subscores for health status. The Health Watch approach allows the primary care physician to observe early trends of unhealthy behavioral or laboratory patterns prior to signs or symptoms of disease, thereby permitting the active practice of primary preventive medicine, in partnership with the individual patient. The clinical parameters assessed annually as well as the seven health status and health behaviors subscores.

So from the research, the iOffice system can improve the internal operations and slash costs through the use of business performance management tools.

2.2.3 Studies of The Artificial Intelligence Office Management Methodology

E.M Mahler et. al (1992) found that Balascopy (Balance + Scope) is a computer assisted methodology developed for the analysis of relationships between multiple immunological, hematological, biochemical, physiological and behavioral parameters. Balascopy utilizes a pattern recognition system for detection, quantification and cognition of imbalances in the above relationships. Generated balascopic patterns help to predict the presence or illustrate the development of immunodeficiency in otherwise healthy individuals at the routine clinical laboratory or physician level office. Longitudinal analysis of balascopic interpretations of patient specific data provides for early, correct identification of progressive immune dysfunction and increased patient susceptibility to infectious diseases. Balascopic information, which is not available from any other existing modality, represents a new class of knowledge and opens up a new method for studying the mechanisms of disease and designing individualized therapeutic approaches.

2.2.4 Studies of the Artificial Eye Office Management System

The research is developing systems for automated diagnosis of faults. Diagnostic reasoning requires search over a large space of possible diagnoses. A prototype system for diagnosis of automobile engines has been implemented in collaboration with McCarney Technologies. Research also is focused on large scale and decentralized control, optimal control, and fault tolerant control system design in the organization. A variety of questions dealing with the state/output feedback design of optimal controllers with pole placement and weight selection capabilities is being investigated. A second area is that of fault-tolerant control system design for applications where continuous and safe operation of the system under control is important for safety or economic reasons. Other work includes the study of robust and insensitive controllers, and the development of a hydraulic pressure controller for compliance and contact force control in underwater robotics applications in collaboration with ISE, Ltd.

2.2.5 Studies the Intelligent Knowledge Management Environment System

The Intelligent Knowledge Management Environment (IKME) is an ongoing project at the University of Kansas aimed at assisting the Defense Information Technology Testbed (DITT)/University After Next (UAN) by providing an advanced reach-back capability for commanders, staff, and other users who have time-critical needs. The knowledge management environment facilitates the creation of extensible and reusable learning objects that would lead to faster delivery of content to knowledge users.

The project is based on the idea of using the Extensible Markup language as the data format for publishing. The environment facilitates the Knowledge creators to create