Productive Collaboration
Through
Corporate Portal

by

Khairi Hafidz bin Ahmad

Dissertation submitted in partial fulfillment
of the requirements for the
Bachelor of Technology (Hons)
(Information Systems)

JUNE 2004

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CERTIFICATION OF APPROVAL

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A project dissertation submitted to the
Information Systems Programme
Universiti Teknologi PETRONAS
in partial fulfillment of the requirement for the
BACHELOR OF TECHNOLOGY (Hons)
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Approved by,

_____

(Mr. Khairul Shafee Kalid)

UNIVERSITI TEKNOLOGI PETRONAS
TRONOH, PERAK
June 2004

CERTIFICATION OF ORIGINALITY

This is to certify that I am responsible for the work submitted in this project, that the original work is my own except as specified in the references and acknowledgements, and that the original work contained herein have not been undertaken or done by unspecified sources or persons.

KHAIRI HAFIDZ BIN AHMAD

ABSTRACT

The objectives for this project are to study the concepts of productive collaboration through corporate portal and to develop a corporate portal that can be implemented easily in any organization. Several problems have been identified during the early research and finally have come up with three main issues occurred in traditional company to be solved by the system, which are time consuming practice, bureaucratic barrier and high operating cost. Manually done job has created these problems. How the system will solve the problems recognized will be explained. This project concerns on developing a corporate portal to enable productive collaboration between personnel working in an organization. System development will consists of five phases namely research and analysis, system requirements identification, functionalities identification, interface designing and coding phase. Result and discussion will show the output of the methodology used in completing the project. Finally, conclusion will summarized all the work been done and some recommendations for future expansion are also included in the final chapter.

ACKNOWLEDGEMENT

Most grateful to Allah that I finally be able to complete my final year project.

I believed this is a result of priceless contributions from many parties. I would like to express my sincere and heartiest appreciations to:

- Mr. Khairul Shafee Kalid, final year project supervisor for his great help, kindness, guidance and valuable ideas towards completing the project.
- My parents and family for their moral and financial support.
- My colleagues especially Johari Julis Juffri and Nor Syarina Mohamad Nordin, which are my source of inspiration and motivation and other final year students of Information Technology & Information Systems, who have together, strive through the semester completing the final year project.
- Finally thank you to everyone involved directly or indirectly with this project. Your assistance and ideas are appreciated.

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND OF STUDY

Productive collaboration is about working together as a team to reach the goal of a project. The corporate portal is a central gateway to the processes, databases, systems and workflows of an enterprise. It provides a seamless, single point of access to all of the resources that employees need to do their jobs. What productive collaboration through corporate portal actually means is enabling staff across a multi-department enterprise or an organization to work together as a team by communicating their thoughts, ideas and work through a portal even without even meeting other teammates. It also means that member of the team can be working from their house or on the road yet still they can contribute to the project they involved. The words productive collaboration already suggested that it will be fruitful when working as a team where each member complemented others with their own specialty and skills. A famous quote says that no man (or woman) is an island. In business today, that is an understatement. Mergers, acquisitions, partnerships, supplier and franchise relationships, matrixed organizations and cross-functional teams are the name of the game. With little to no direct control over key players, business leaders and professionals must engage a critical new set of skills - to influence and collaborate productively with others. It can't be denied that people need interaction between themselves to bring out the best from all of them. When staffs communicate with their colleagues, they will share their knowledge and expertise thus increasing their competency, skills and value. Productive collaboration seems the emerging trend in this new era of information communication technology. Successful companies worldwide has turned to ICT and recognized it as an opportunity to increase their value and competency edge in competing for market share for the future.

1.2 PROBLEM STATEMENT

1.2.1 Problems Identification

A lot of readings and study has been done to identify the problems that have plaguing most company. In a traditional organization or company, almost everything is done manually such as requesting for company documents, scheduling for meetings, asking for expert advice from colleagues and responding to problems arise, all these jobs were done by hand and physically. Thus, the manual operations being used have created many problems to conventional corporation. Some of the general problems faced by many institutions are explained below.

1.2.1.1 Time Consuming

It is time consuming when people request a document from other department; they need to inform the intended department upon their request. Obviously they will have to see someone who is responsible in keeping the requested document. Then the person will search for the document. If the person manages to find the document, then they need to make a copy of the document to avoid the original copy being lost while in possession by other person. But what if the person who has the document can't find it or is on leave? Then the personnel requesting for the document had to wait until a new copy of the document to be retrieved back by or even worse had to wait until the person responsible over the document return back from holiday. A simple job like this might consume a few days. Imagine how much time needed to complete other complicated jobs.

1.2.1.2 Bureaucratic Issue

A simple, daily routine job might require a few procedures to be taken before it can be completed. For instance, if people need to see their superior to have some discussion, then they firstly need to call the secretary of the superior requesting for an appointment to be scheduled. Then the secretary will ask the superior whether the superior wishes to meet the personnel. Considering the superior wants to meet the personnel, the secretary will then arrange and schedule the appointment based on the

superior's free time from other appointment or meeting. The secretary will inform the superior first about the newly scheduled appointment before informing the personnel about the appointment being made. But what if the superior doesn't have any free time or will not be around the office for about a week. Important decision must be done as quickly as possible. Or else, it could turn out to be one of those costly mistakes done because the person needs consultation from the superior for the superior's experience in that matter.

1.2.1.3 High Cost

Simply put, time is gold. Whenever there is delay in completing a job in conventional system, the cost incurred will be higher. Shorter completion period means lower cost. Documentation process also increases the cost of printing. Successful organizations are the one who managed to decrease their operational cost lower than their competitors.

1.2.2 Significant of the Project

The corporate portal to be developed will automate many routine jobs in a typical company during this era of technology and knowledge.

1.2.2.1 Faster Response Time

By implementing the corporate portal, personnel from different department can share and exchange documents over the company intranet on-demand. It means that personnel requesting for a document doesn't have to meet anyone but only has to search in the document database. If the required document is not available yet in the database, the personnel just need to inform the person in-charge on the document through the portal and the document will be available in no time.

1.2.2.2 Remove Bureaucratic Issue

Seeking for advice or discussing a problem or matters with colleagues no longer requires personnel to go and meet them face-to-face. Through the corporate portal,

colleagues can interact and share their knowledge with others wherever they are. Even if someone is on the move, at their house or somewhere else, they can still communicate by logging into the portal through the internet.

1.2.2.3 Cut Cost

Automated works will definitely decrease the operational cost of a company. When there is no more hassle in completing a job, productivity will increase amazingly. Just imagine a personnel going places to meet people to discuss some issues when the same person just sits at his cubicle and had an online conferencing with others through the corporate portal. Obviously the portal saves a lot of time and the personnel energy thus help to decrease time to complete a job, increase personnel productivity and definitely decrease the operating cost and increase the company's profit.

1.3 OBJECTIVE AND SCOPE OF STUDY

1.3.1 Objective

The system to be developed has a few objectives or goals to be met. Firstly, to enable users to share documents and other information and access other data stored in the database. The user also can communicate through instant messaging with other users. Finally, the project aims to provide real-time environment for the user.

1.3.2 Scope of Study

For this project, the scope of study has been defined to study about how productive collaboration can be achieved by using a web-like portal. The final product will be a corporate portal that can be implemented to help users share information such as documents and contacts and communicate with other online users through instant messaging.

1.3.3 The Relevancy of the Project

This project development has implemented industry-oriented approach. Currently, there are only a few systems that have been developed to enable document sharing within an organization. Studies have shown that demand for this kind of application is increasing parallel to ICT growth. By taking this situation into consideration, it is hoped that the project will contribute in a way to improve the quality and functionality of future corporate portal development based on productive collaboration. It is also hoped that the system developed will be used as a reference by other developers.

1.3.4 The Feasibility of the Project within the Scope and Time Frame

A period of four months has been allocated to complete this project. The first month was scheduled to complete research and preliminary submissions and planning the work method for this project. System development that includes writing the coding for the portal, implement and test the system will proceed during the remaining three months available. From time to time, some reports will be submitted at every stage.

CHAPTER 2

LITERATURE REVIEW

2.1 PRODUCTIVE COLLABORATION THROUGH CORPORATE PORTAL

Productive collaboration can be achieved through corporate portal. Corporate portal can help to facilitate problem solving more quickly, and make better, faster decision[1]. It is beyond one-way presentations and application sharing to enable the focused collaboration and an exchange of ideas over the Internet or an intranet. Empirical studies have shown that electronic brainstorming generates more and better ideas, due to the combination of parallel idea generation, the facilitation of more open group discussion and the use of tools to organize ideas and make immediate decisions[2]. Decisions are made with a higher degree of consensus and agreement resulting in a dramatically higher likelihood of implementation success. Meetings take a fraction of the time employee would take in a traditional setting and people walk away with documentation in hand, regardless of where they are. Corporate portal also help to run meetings better in the meeting room or over the intranet. Because the tools are web-based, employees can choose whether they want to gather participants in a conference room, set up a distributed meeting or a mixture of both. Employees can also decide whether the meeting should be real-time or whether participants will contribute their ideas when their schedule allows. Either way, employees get the same focus and productivity with significantly greater scheduling flexibility. Through corporate portal, group productivity will increase significantly.

2.2 INTRODUCTION

Portals are the hottest trend in e-business today, with virtually every company on the web trying to capitalize on this phenomenon. As e-business interface, portals become widely used among enterprises as their gateway to employees, partners and customers.

Formerly, portal was intended as an organized directory of web pages such as Yahoo, AltaVista, Infoseek, and Google. It was a landmark that in July 1996 Yahoo launched a personalized portal service called My Yahoo!, once became most popular pages in the internet. It provides a revolutionary way that after developing their profile and interests, users will see a single page with up to date information channels corresponding to them, without browsing and searching. Yahoo's users skyrocketed to more than 50% for the next three months after it was unveiled. Many other internet portals began to provide their "my" version.

These kinds of internet portal have been solving the most basic problems of finding and retrieving information faster with higher relevancy. But it was for personal usage rather than business usage since enterprises need more relevant information from their internal information, employee's collaboration, and access to existing applications. Thus corporate portal was born to capture these requirements.

2.3 CORPORATE PORTAL

The development of corporate portal software creates distinct purposes with the public or internet portals. A public portal is aimed to get attention from a large number of viewers, with the main target to reach revenues from advertisers or product's buyer. These are Yahoo, Google, AltaVista, and Amazon.

But a corporate portal will help corporate information or knowledge workers to make decisions and stay ahead in front of competition[3]. Corporate portal integrates application and information from internal source (intranet, documents, ERP, collaboration) or external source (partners, customers, and internet) into a single and personalized view.

Portals enable companies to create simple, task-based applications for self-service users, such as customers seeking delivery updates or factory supervisors adjusting production schedules. Therefore, rather than providing SAP, PeopleSoft, and Siebel Systems clients to every user, a simple portal page can only incorporate the combination of functionality a particular user needs from each application to complete a transaction.

Corporate portal solves basic problems to manage information such as[4]:

1. Increasing number of knowledge workers who collects, analyzes, makes decision, and distributes information through out the company.

2. Increasing volume of information, as the company grows. Finding relevant and accurate information becomes difficult, sometimes impossible, and often requires searching multiple systems.

3. Too many login to use applications or accessing information and too many guides to use each. Information is accessed through different methods, such as web browsers, email clients, or other desktop applications.

4. Information is scattered throughout the intranet in a multitude of sources and in all kinds of formats. Moreover, information that published on-line is often structured in a disorganized way.

5. Lack of collaboration between employees, companies, partners, or customers. It is ironic for companies that have internet connection, but employees use it in contra productive way.

6. Personalization, since every employee has different needs and different roles of using information and applications.

7. Interfacing to on-line databases of critical corporate operational information, such as enterprise resource planning (ERP) and customer relationship management (CRM) application.

2.4 BENEFITS

A typical corporate portal can provide the following benefits[5]:

Access to information - as universal access point, portals improve productivity on providing integrated access to general corporate information, enterprise applications, business intelligence and collaboration tools.

Reduced costs - less time to search information, less training and administration with simple and consistent interface to learn.

Knowledge sharing - improve customer, partner, and supplier relationships as a result of better information exchange, driving long-term retention.

Less paper - paperless office means easy to manage and faster information flows. It reduces time needed to transform raw information into knowledge that decreases management overhead for information gathering and decision making.

Process improvement - linking separated processes will lead company to seamless business process, moreover if these processes come from various applications.

Common functionality - employees can work across departments and applications without worrying about different conventions for things like product names and production techniques.

Retain valued employees and customers - in times of tight labor markets, portals can reduce employee frustration with unnecessarily bureaucratic tasks such as HR benefits selection and managing retirement accounts.

2.5 BUILDING COLLABORATION

For most leaders, the world of predictability, long-lasting structures, and comfortable change is gone. Today executives face a world of increasing uncertainties, rapid change, constant reorganization, higher demands for performance, and intense scrutiny of their actions by stakeholders. In response, we are hearing: "We need a more collaborative culture."

What does it mean to be more collaborative, and how can executives move in that direction? Effective collaboration requires people, who know how to collaborate, and an environment that supports them. Collaborative organizations support flexible thinking and acting; enable decision makers to respond to new problems and opportunities and make quality decisions; increase understanding, communication, and trust across divisions and departments; motivate people to contribute their creative ideas and energy to achieve goals; stimulate exchange of resources among stakeholders; and maintain accountability to ensure quality thought and committed action at all levels.

Becoming more collaborative requires balanced change. Leaders must seek to align the structure, information systems, reward systems, strategy, values and skills in support of the change. Focusing only on one part of the system will limit collaborative capability. To become more collaborative, you need to go about it collaboratively!

Leaders who create more collaborative cultures observe five principles[6]:

1. Involve the relevant stakeholders.

Build ownership for the change effort at all levels. If the effort is driven solely from the top, people will view it as just another desperate action. Design the effort to include all relevant stakeholders. Appoint a steering committee and empower them to make real decisions and serve as guardians of the process.

2. Build consensus phase by phase.

If stakeholders can't agree on the problem, they won't agree on the solution. People must understand why the system needs to change, agree on what is not working, appreciate what is working, confront the norms and behaviors that inhibit collaborative action, talk openly about the functional and dysfunctional aspects of the culture, and recognize ways they collude in continuing the old norms. They also need to agree on a future vision—and link the vision to the strategy. Why will becoming more collaborative help the company to be more productive, profitable, competitive, or successful? How will collaborative action help achieve the mission? If the change isn't seen as necessary, it won't be taken seriously.

3. Design a process map.

A process map is useful for designing and managing change efforts. The map provides a "game board" for laying out the different rings of involvement, phases, milestones, and activity. Creating the map forces change leaders and key stakeholders to balance short-term and long-term issues.

It also helps people think through the sequence in which they address the variables of culture, strategy, structure, skills, rewards, and technology. Strategy needs to be addressed early to figure out how the effort can help achieve strategic goals.

Skills development should be launched early to provide the competencies necessary to support collaborative planning and problem solving. The best way to build a collaborative culture is to address issues collaboratively. The key process design issue is deciding which short-term and long-term issues can be tackled over the next year without overloading the system. Then the task is to ensure that each change-inducing activity is conducted in a way that models effective collaboration and is supported by the process consulting and training it needs.

4. Designate process facilitators and harness the power of group memory.

Collaboration always involves meetings - getting people together to exchange information or solve problems. The quality and productivity of meetings determines the effectiveness of the change process. Meetings need to model collaboration by balancing achievement on all three dimensions of success: results, process, and relationship. Often there aren't enough well-trained facilitators, recorders, or change management experts to support a system-wide change effort. Companies often depend on external consulting firms to initiate and support these efforts. To avoid dependency and to build collaborative capability, however, they need to develop internal process consultants and facilitators.

5. Become a facilitative leader.

Any collaborative change effort requires forceful and effective leadership. Managers must have the will and the skills to be highly influential facilitative leaders. The more that facilitative leadership is diffused, the more likely that change will lead toward a more collaborative culture. Ultimately, the culture won't change much until managers are collaborative in dealing with everyday issues, and facilitative leadership becomes the norm. To create more collaborative organizations, trust people; involve them; and give them the skills, tools, and information to work collaboratively. Apply the five principles to create a mission and value-driven work environment, and people will respond by performing beyond your wildest expectations.

2.6 TEN STEPS TO PRODUCTIVE COLLABORATION

Collaboration has become a bit of a buzzword these days. It is being applied to projects, processes and all kinds of creative activities.

Many vendors are rushing to embed collaboration in their products, but customers have long recognized that there is more to collaboration than just putting collaboration tools in the hands of their knowledge workers and expecting them to get on with it. Knowledge workers have considerable discretion in the way they work. It is an important aspect of the way that they work. You would be unlucky to encounter downright hostility to collaboration but indifference would be equally fatal to a collaboration initiative.

Culture is extremely hard to change, as many a CEO will ruefully admit. But in many cases, an organization's culture has to flex to support collaboration. And collaboration is going to be increasingly important. Without collaboration, there will be no new knowledge and without new knowledge, there will be no sustainable competitive advantage. There are ten key steps to develop a collaboration culture[7]:

Step One - Understand the culture of the organization

Each organization has a unique culture and, although some cultures may support collaboration naturally and easily, in some cases collaboration goes against the grain of the organization's culture and power structures. The matrix below shows four main types of organizational culture. The culture type of your organization depends on its degree of solidarity and commitment to a common goal, and the amount of socializing and trust present amongst staff. (Ref: The Chameleon Consultant by Andrew Holmes).

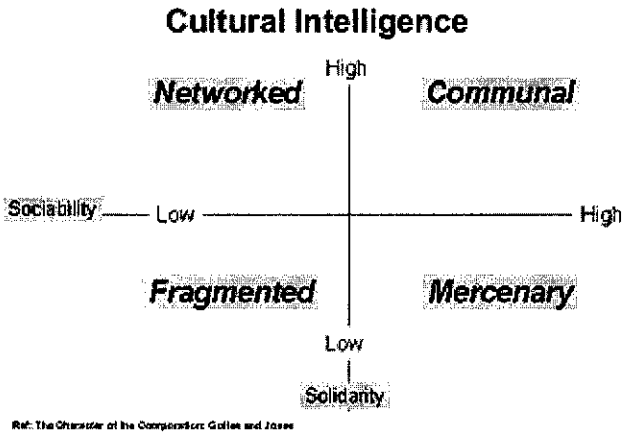

Figure 1: Organizational Culture Matrix

Figure 1 shows the four main types of organizational culture. In a networked culture of high sociability yet low solidarity, there will be a high degree of trust. People will be very willing to share information so long as they can be given good reasons for doing so. Being told to do so by the management will not work. Creative organizations are good examples of this type of culture.

In a mercenary culture of low sociability and high solidarity, things are very different. People are driven to get things done and will have a very utilitarian approach to knowledge. The emphasis in this case will be on pragmatic solutions that deliver value very early. These types of cultures will not be impressed by vast

accumulations of knowledge but by short-term solutions. Sales organizations are a typical example.

In a communal culture where there is high sociability and high solidarity, willingness to share will be combined with a very clear focus on what is needed. This can be an ideal situation for the introduction of collaboration.

Lastly, in a fragmented culture of low sociability and low solidarity, people will tend to work as individuals. In this case, organizations introducing collaboration will need to appeal to the self-interest of the individual. Interestingly enough, although this model often applies to consultancies, collaboration is quite common in these organizations.

An Italian IT Services company with a strong hierarchy provides a good example of a fragmented culture. In this case, we created effective senior sponsorship for the development of a knowledge sharing culture by assiduously courting the heads of department and letting them participate in setting the strategy. The key barrier to collaboration, poor inter-department communication, was overcome by incentivising the heads of department by measuring the intellectual capital that they owned and generated.

Any culture is made up of the individual motivations of its members. These have to be identified and targeted.

Step Two - Understand individual motivations

Any change plan must understand the fears and aspirations of the participants:

- People may be upset by disruption of established practices and norms.
- They may say they lack time and support to learn new ways.
- They may fear that management will use their knowledge to redesign jobs and make people work flat-out all day.
- They may fear that management will take their knowledge and outsource the work.

Change managers need to make a persuasive case to counter balance these fears. The motivations could be:

- The job will become more interesting.
- The individual will gain recognition from their peers and managers for their contribution.
- In developing their knowledge, staff will also develop their careers.

Having overcome active resistance there is still a need to win the pragmatic argument expressed as "Am I giving more than I receive and is everyone doing his or her part?" This means encouraging and rewarding collaboration.

Step Three - Encourage and reward collaboration

Collaboration will need to be encouraged at the early stages by identifying and rewarding the new behavior desired. This means catching people who are exchanging knowledge and rewarding them in some way. Suggestion schemes point to the success of what is often only token recognition.

Some people will take naturally to the task of developing their capabilities while others will find it more difficult. Sustainable collaboration amongst knowledge workers will only happen if everyone feels their contributions are recognized. One way to encourage these contributions is to build collaboration into people's job descriptions. Organizations are starting to pose the question in annual appraisals: "What new skills have you learnt this year?" and "What new ideas and best practice have you created?"

Step Four - Start slowly and increase virally

There is significant risk and uncertainty in introducing collaboration and for this reason it is a very good idea to use an incremental approach. Collaboration should be introduced with a small pilot of enthusiastic users. This can be expanded as other parts the organization see the benefits. A rollout plan can make use of the viral adoption mechanism that works well with collaboration applications. In a viral approach, new people are invited into a collaborations workspace and find it useful. They then introduce the technique to their colleagues and the collaboration population grows.

Step Five - Senior Management sponsorship is essential

It goes without saying, but I'll say it anyway, that senior management support is vital to making the introduction of collaboration a success. This must go further than just kind words at the start of the pilot project. Research has shown that ideas travel down a hierarchy 10 times more rapidly than they do upwards. Ideally, the sponsor must be seen to be an enthusiastic and active participant in collaboration activities.

Step Six - Validate all contributions to the knowledge cycle

The role that people take in collaboration will depend upon their skills, knowledge and the tasks they carry out for the organization. Collaboration supports a knowledge

cycle, shown below, in which knowledge is generated, used and which then creates more knowledge and benefits.

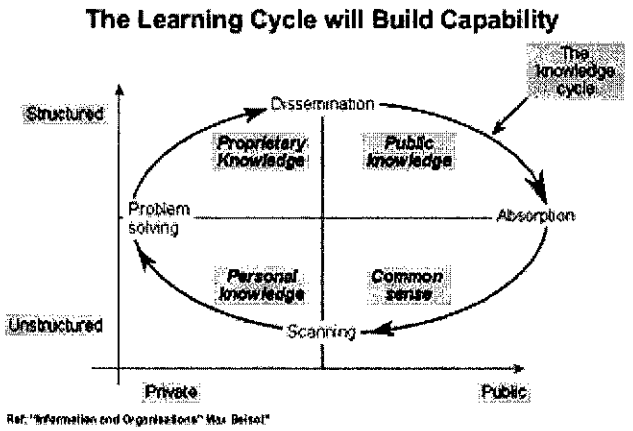

Figure 2: Knowledge Cycle through Collaboration

Figure 2 depicts the knowledge cycle through collaboration. In the first stage, Personal Knowledge is created by personal study and thought; next, Proprietary Knowledge is captured in communicable form. In the third stage, knowledge is disseminated informally in meetings and discussions or more formally through learning to become Public Knowledge; lastly, the cycle is completed as this new knowledge is embedded as Common Sense and best practice, laying the basis for yet more innovation.

People can make equally valuable contributions at any of the stages of this cycle. It is of no purpose to have gurus creating much knowledge unless other people can put it to use.

Not everyone is a guru - and for younger people it is hard to contribute valuable insights until they have gained experience. Use of knowledge is as important as knowledge creation and capture if the organization is to benefit from collaboration.

The value of these different roles must be clearly described and confirmed with everyone. People should be encouraged to act in the part of the knowledge cycle where they can contribute most. Innovation, capture, dissemination and reuse are all valid activities that deliver company benefit.

Step Seven - Be prepared for political conflict

As a culture of collaboration and exploitation of knowledge develops, companies must be prepared for some shift in the power structure. When collaboration is valued, individuals who create and put knowledge to use may gain power at the expense of the "action man". We have to deal with this dichotomy in IT. There is a saying with some truth in it that "IT Managers think before they act, if they act at all. Business Managers act before they think if they think at all". One role is not more important than the other and a new balance must be struck between them.

Step Eight - Be open to the benefits of external collaboration

Although the knowledge assets in the organization can be considerable, it would be a mistake to focus all collaboration activities internally. As organizations operate within networks of partners, there are increasing opportunities and requirements to collaborate with partners and to gain the benefits of so doing. Collaboration between partners can be the most difficult but the most rewarding activity.

The key enabler in collaboration is to establish trust between parties. Trust is not present until it has been established on a peer-to-peer basis between staff in each company despite all the high-level agreements made between the company directors. In one case, two organizations were having difficulty in establishing the degree of trust required to collaborate on a shared process. On closer examination, they found that the staffs in each company were already sharing much more information than the managers had agreed to. They had established a degree of trust in the security and accuracy of the information they shared because that was the only way they could do their jobs.

Step Nine - Establish and continually remind people of the aims of collaboration

It is very important to be clear to everyone what the organization is trying to achieve and what it expects to get from collaboration. The Senior Sponsor needs to set out a clear vision that describes how the organization expects people to behave and the individual and organizational benefits it expects to gain. One example is shown below:

"Learning is at the heart of a company's ability to adapt to a rapidly changing environment. It is key to being able both to identify opportunities and to exploit these opportunities rapidly and fully."

John Browne - CEO British Petroleum.

Step Ten - Define and measure the benefits

Collaboration and knowledge management have not been high on organizations priorities in the past because the objectives and attendant benefits were not clear. These days, collaboration is finding applications in business processes such as supply chain management and activities such as mergers and acquisition where the benefits of speed and efficiency are easier to measure. The main benefits of collaboration are:

- Better coordination of activities through a richer, shared context for action.
- Increased innovation as people gain a better understanding of the organization's problems and needs.
- Reduced waste by avoiding reinventing the wheel either as information or activities. For example, one oil company was about to spend £1M plus on an exploratory well when an old hand said, "We drilled there before".
- Improved performance through creation and dissemination of best practice. This is a key element of the Government's plans to increase its efficiency.
- Higher workforce capabilities and efficiencies through improved skills and up to date knowledge.

2.7 CASE STUDY ON PRODUCTIVE COLLABORATION - Perficient brings peers together with WebSphere Portal

Customer: Perficient, Inc.

IBM Business Partner: Perficient, Inc.

"We are convinced that WebSphere is the cornerstone for our e-business infrastructure needs."

Joe Klewicki, Managing Director, Portal Solutions, Perficient

Challenge: Improve employee collaboration, productivity and knowledge sharing while reducing the need for IT-related resources and support

Solution: MyPerficient.com, a B2E portal for Perficient employees worldwide

Business Benefits: Projected $3-4 million increase in annual revenues; 30% savings on travel; 15% savings on document shipping and conferencing costs; 3% reduction in administrative overhead; improved productivity; better staff retention through enhanced sense of community

"Need the answer? Look it up." Simple advice, one might think. But in today's environment, employees often need to search through mountains of information to find the answers to questions as simple as "What is the per diem expense rate for my trip to Chicago?"

In recent years, companies have increasingly turned to business-to-employee (B2E) enterprise portals to provide workers with the ability to easily access information and communicate with peers.

Business strategy consultants The META Group predict that by 2005, more than 90 percent of Global 2000 organizations will have an employee portal; [i] by that time, says Butler Group, the enterprise portal product market will have exceeded $4 billion in sales internationally.[ii]

"With our first-generation Plumtree portal, creating and maintaining collaboration sites required advance coordination, IT support and costly third-party solutions. With WebSphere Portal and its integrated Lotus QuickPlace and Sametime components, we no longer have this problem."

Eric Simone, Senior Managing Director, Perficient

Perficient, a leading e-business solutions provider to Global 3000 and mid-size companies, has built portal solutions for some of the world's largest companies. With offices across the United States, Canada and the United Kingdom, and with consultants at client sites across the globe, Perficient's success hinges upon maintaining an effective internal communications network. Although enterprise portals are a mainstay of its business, Perficient's employees paradoxically found themselves hampered by a portal, developed with Plumtree software, that did not provide the crucial collaborative resources or scalability the company needed.

WebSphere - cornerstone for e-business

Frustrated, Perficient made a strategic decision to evaluate portal solutions based on one of its key areas of specialization, the Java$_{(tm)}$ 2 Platform, Enterprise Edition (J2EE) architecture. After looking at several vendors--including BEA, SAP, Vignette and Epicentric--Perficient chose IBM WebSphere Portal for its integration and collaboration capabilities.

"WebSphere Portal provides the sound infrastructure and standards-based technology on which IBM has centered its e-business framework," says Joe Klewicki, managing director of portal solutions at Perficient. "You do not get that with a first-generation product like Plumtree. We are convinced that WebSphere is the cornerstone for our e-business infrastructure needs."

Perficient senior managing director Eric Simone agrees, "With our first-generation Plumtree portal, creating and maintaining collaboration sites required advance coordination, IT support and costly third-party solutions," he notes. "With WebSphere Portal and its integrated Lotus QuickPlace and Sametime components, we no longer have this problem."

Simone reports dramatic benefits from Perficient's WebSphere Portal solution. Savings on travel, document shipping and conference calls are estimated at 30 percent. The substantial reduction in paper-based tasks has cut administrative overhead by three percent. Because the organization no longer relies on ad- hoc solutions for building and maintaining its portal, its IT personnel can be redeployed to more productive tasks. Productivity, too, is on the rise: employees are now spending an estimated one hour per week more on productive work, rather than on searching randomly for information--a figure Perficient believes will rise as the company's knowledge base continues to stream into the portal.

Collaboration and functionality at employees' fingertips

Dubbed MyPerficient.com, Perficient's portal enables employees to log on from anywhere in the world. The opening screen presents intuitively arranged tabs and links, each accessing a mission-critical information source or application. For example, users can access an indexed knowledge base or engage in ongoing discussion forums on projects and technical issues. The majority of Perficient's employees--consultants who are located across the globe at any given time--are using the portal to deliver presentations to customers and partners over the Web. Managers are able to review deployment of resources and facilitate real-time chat or audio conferences with employees and customers.

"IBM has revolutionized our business. The possibilities for our customers and us are endless ... and the WebSphere software platform is the glue that holds it all together."

Eric Simone

Simone notes one of the key attractions of the WebSphere platform is the bundled collaboration capabilities provided by Lotus software from IBM. With Lotus QuickPlace, Perficient's employees have the ability to create collaborative online workplaces--providing document exchanges and virtual communities. Additionally, Lotus Sametime enables employees to collaborate in real-time through instant messaging and virtual white-board sessions. Notes Simone, "That kind of collaborative functionality--without the need for IT intervention--sets IBM apart in the portal arena."

MyPerficient.com utilizes IBM WebSphere Application Server as the development environment as well as the runtime environment for the Java servlets that provide the business logic. WebSphere Application Server also handles Java Database Connectivity (JDBC) calls to retrieve information from IBM DB2 Universal Database, which manages the data on the database tier. Java Server Pages (JSPs) deliver content from the database to the presentation layer as HTML files. Security is provided by IBM SecureWay Directory.

WebSphere introduces new revenue opportunity

For more than four years, Perficient has helped many of the world's largest and most successful companies through the key technical issues and business challenges that they face when evaluating and implementing enterprise portal solutions. Although Perficient has extensive experience in delivering solutions around all of the leading portal platforms, the company is so convinced of the value of WebSphere Portal that Perficient has developed a Plumtree-to-WebSphere migration utility and is encouraging its existing Plumtree customers to migrate to the IBM platform. In addition, Perficient has developed an entire suite of service offerings around WebSphere Portal--ranging from programs to JumpStart$_{(tm)}$ portal initiatives to custom development and integration services.

Says Simone, "IBM has revolutionized our business. The possibilities for our customers and us are endless: enhanced relationships and more productive collaboration with employees, customers and partners; new standards-based capabilities with full support for Web services and J2EE; and stronger, easier integration with other enterprises. And the WebSphere software platform is the glue that holds it all together."

[i] *"BackWeb Technologies." M2 Presswire, M2 Communications Ltd., 13th November, 2001.*

[ii] *Bennett, Madeline. "Portal spending soars." VNU Net, News Service, VNU Business Publications Ltd., 16th November, 2001.*

This case study illustrates how one IBM customer uses IBM and/or Business Partner technologies/services. Many factors have contributed to the result and benefits described. IBM does not guarantee comparable results. All information contained herein was provided by the featured customer and/or Business Partner. IBM does not attest to its accuracy.

CHAPTER 3

METHODOLOGY

3.1 PROCEDURE IDENTIFICATION

The project system development consists of five phases which are research and analysis, system requirements identification, functionalities identification, interface designing and coding.

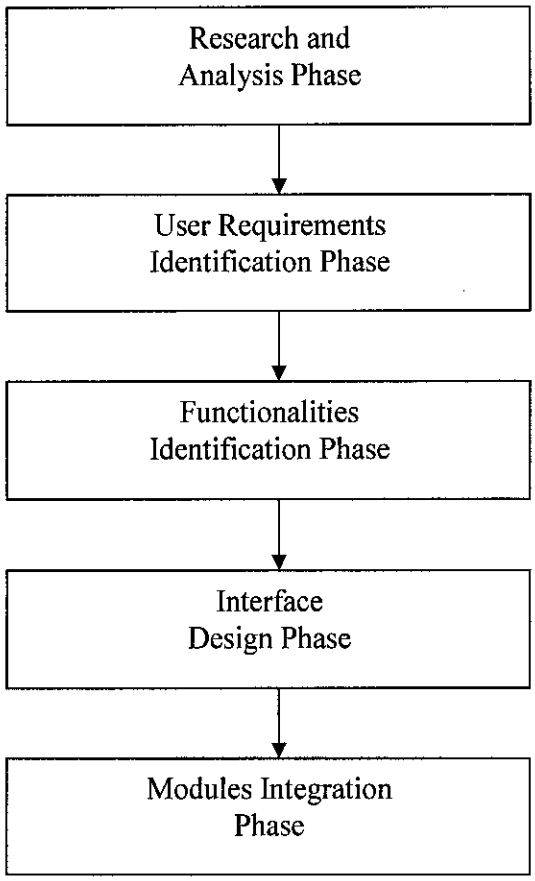

Figure 3: System Development Life Cycle
(The five development phases used in this project)

Figure 3 shows the system development life cycle diagram. During research and analysis phase, study on productive collaboration and corporate portal has been conducted using articles from the internet as the main source. From there on, common problems that occur in traditional or conventional organization has been identified and stated under problem identification. Analysis on how productive collaboration can be achieved through corporate portal was also conducted.

Then user requirements identification was carried out. User requirements were identified by reading an article which stated how a typical corporate portal should look like and what service or function should be provided for users in order to collaborate and work together with other colleagues through a web-like portal. User requirements are important so that the system to be developed will satisfy users' needs.

After that, functionalities of the system were identified by reading corporate portal product descriptions and comparing the user requirements with functionalities included in a typical corporate portal system available in the market. Two corporate portal systems which are HotOffice developed by Thruport Technologies Inc. and Plumtree Corporate Portal developed by Plumtree Software were used in identifying the system functionalities.

Next, interface designing took place based on functionalities identified earlier. In designing the interface, storyboard for the system was firstly prepared according to the functionalities. Interface designing focused on the layout of the portal and how the user will interact with the system. This includes the placement of icons and links on every page in the portal. It stressed on consistency and simplicity to minimize time needed for new user to learn how to use the portal. PHP-Nuke 7.1 was used to design the user interface.

By using PHP-Nuke 7.1, I selected the modules needed to fulfill the system functionalities and meet the user requirements. All the modules are then integrated into the main interface. Database for each module was created after been integrated and configured successfully to work with the main interface. Finally the system will be implemented and set up and running in a workstation or a PC.

3.2 TOOLS REQUIRED

Beside articles from the internet, other materials that will be needed to develop the system are the hardware and software. By standard, the hardware needed to develop the system is just a normal mid-range PC. It was decided for the development phase to use software such as Macromedia Dreamweaver MX for coding editing tools, PHP-Nuke 7.1 for interface design and modules integration, MySQL database, PHP programming and Apache web server.

CHAPTER 4

RESULT AND DISCUSSION

From the user requirements identification phase, user requirements have been identified. User requirements for the project listed such as:

- User can share and access documents stored in the database
- User can communicate through public and private messaging system with other online user
- User can remind themselves and inform their colleagues on any upcoming events or appointments
- New user can register as member of the system enabling them to use the service provided by the system
- User can view list of current running project along with the project status, tasks to be done and personnel designated for the project

System functionalities for the system were derived from the system requirements stated above and also functionalities included in corporate portals currently available on the market. There are five main functionalities defined for the system. These functionalities were made up to meet the user requirements and based on the common functionalities of a typical corporate portal. The functionalities are:

- Login – user can log into the system using valid username and password. New user can create new account through this function
- Upload – user can share documents to be stored in the database and enabling other user to have access to the documents stored in the database
- Messages – user can send private or public messages to other users
- Calendar – user can post upcoming events in the calendar to inform other user
- Workboard - user can view list of projects along with the current status, task to be performed and personnel assigned to the project

After defining the functionalities for the system, a storyboard showing how the pages will be linked together was drawn up. The storyboard for the portal is shown as below:

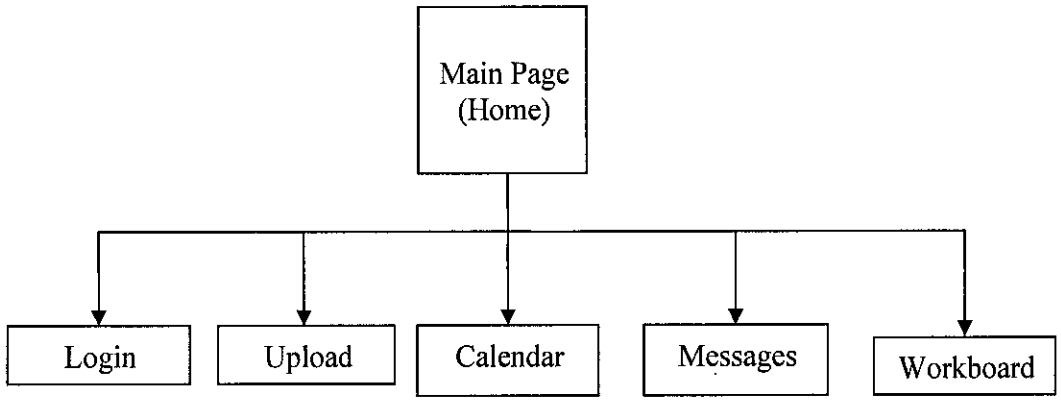

Figure 4: Storyboard for the system

(All the functionalities are linked directly to the main page)

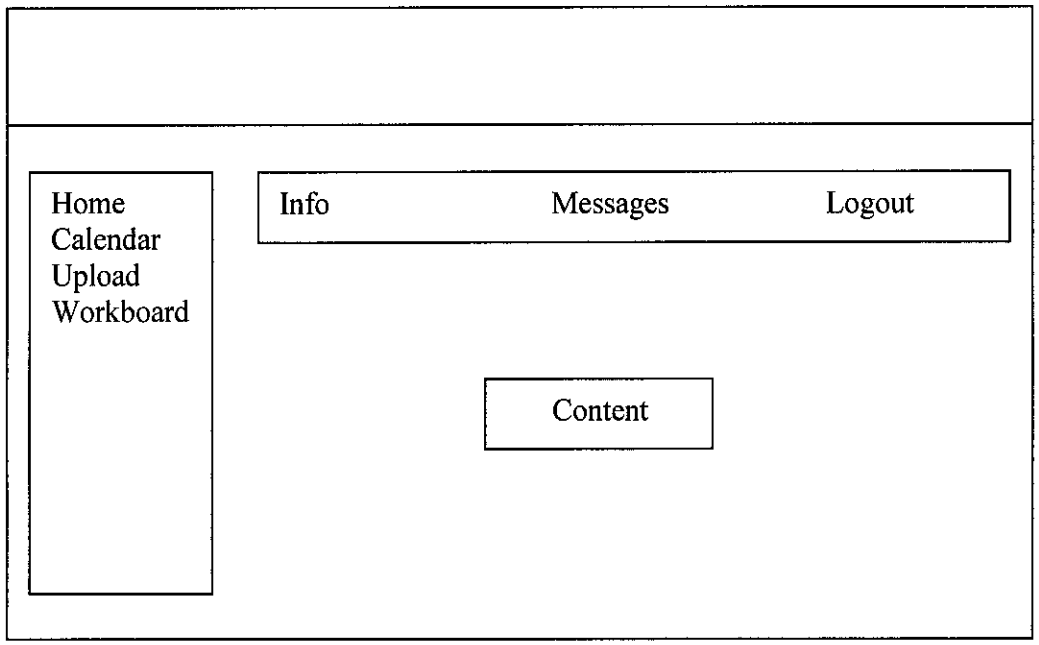

Figure 5: System interface page layout

(Links from the main menus will be shown in the content area with Home as the default page)

Figure 4 shows the storyboard for the system. From the storyboard drawn, the main page was designed to link all the functionalities of the portal as depicted in Figure 5 that shows the system interface page layout. Comparison and reviews on corporate portals that are available in the market during research phase has helped to determine the appropriate concept and design of the interface. Below is the interface designed showing links to all the functionalities defined in the system user requirements.

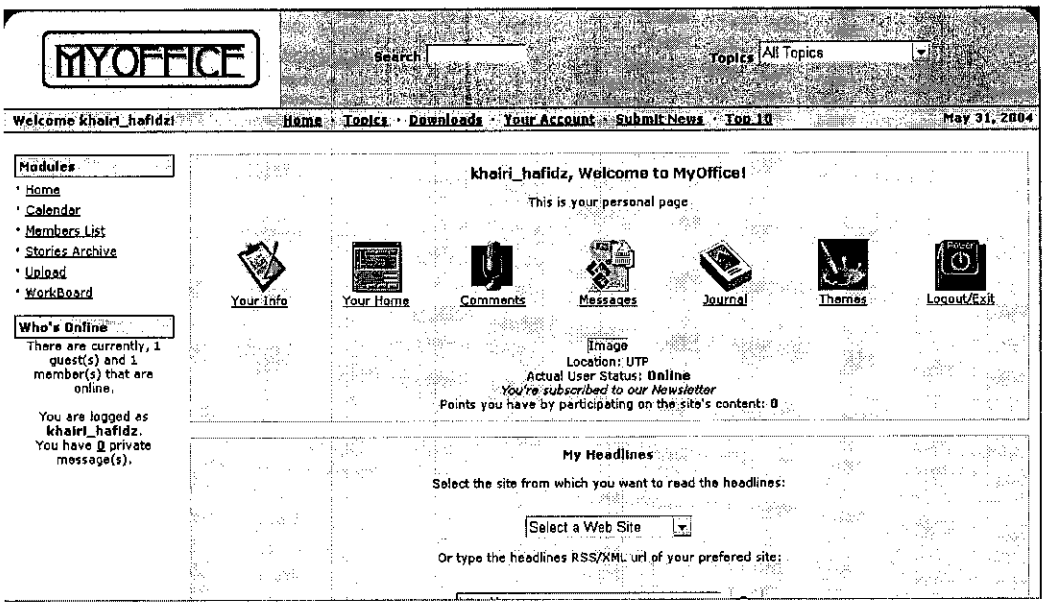

Figure 6: System interface

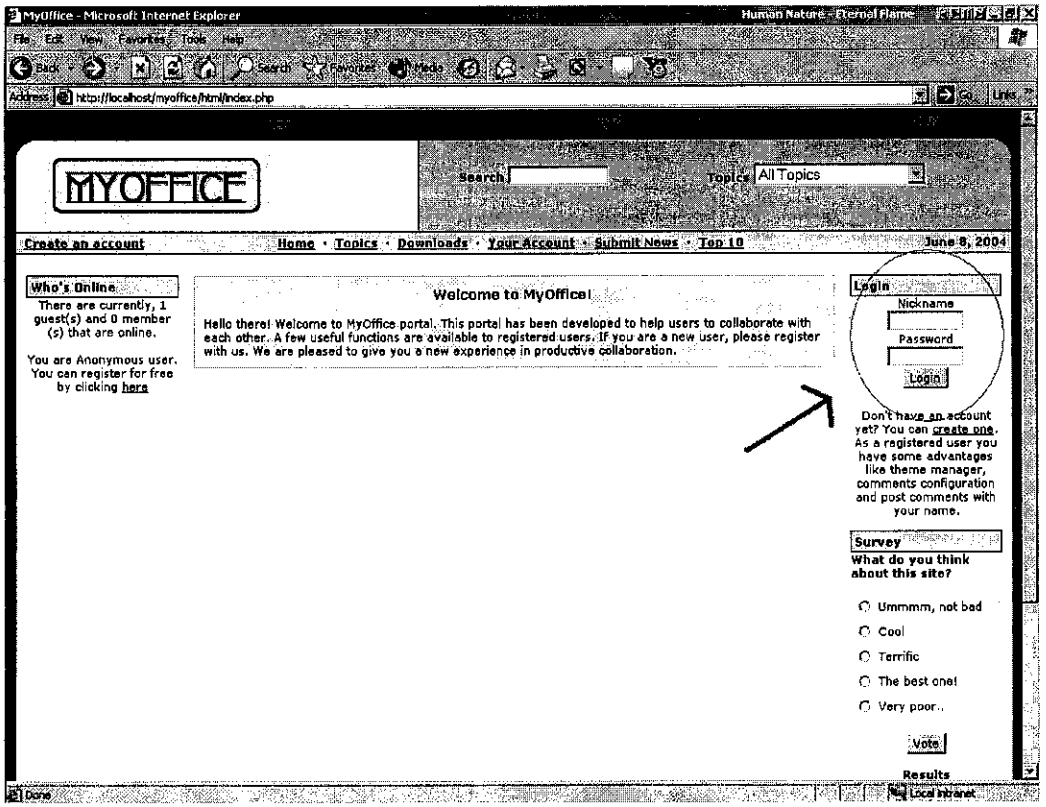

Figure 7: Home page

Figure 7 shows the Home page – index, the first page each user will see before browsing through the portal. The red arrow shows where the user will key-in their valid username and password to log into the portal. All the links visible are disabled so that only validated user can use the services provided and protect from sabotage done by anonymous user.

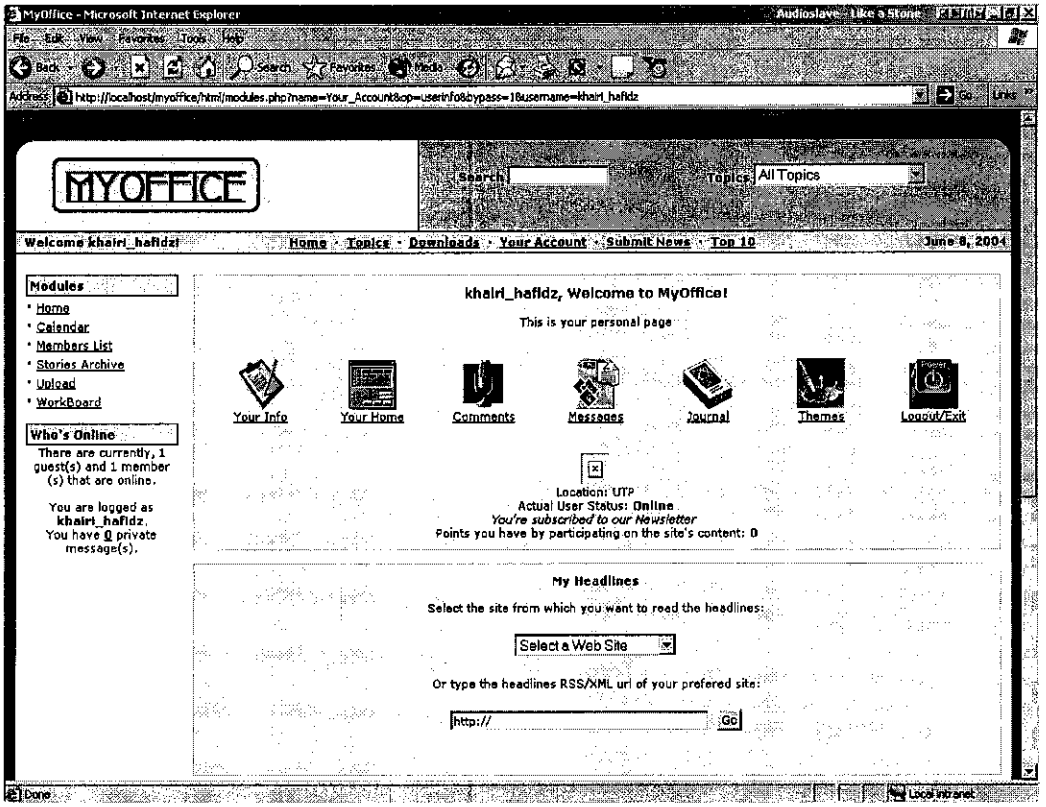

Figure 8: Your Account page

Figure 8 shows Your Account Page. This page has the all the links to the system functionalities. From this page, user can browse to Calendar page, Upload page, Workboard page and Messages page. User will see this page after successful login.

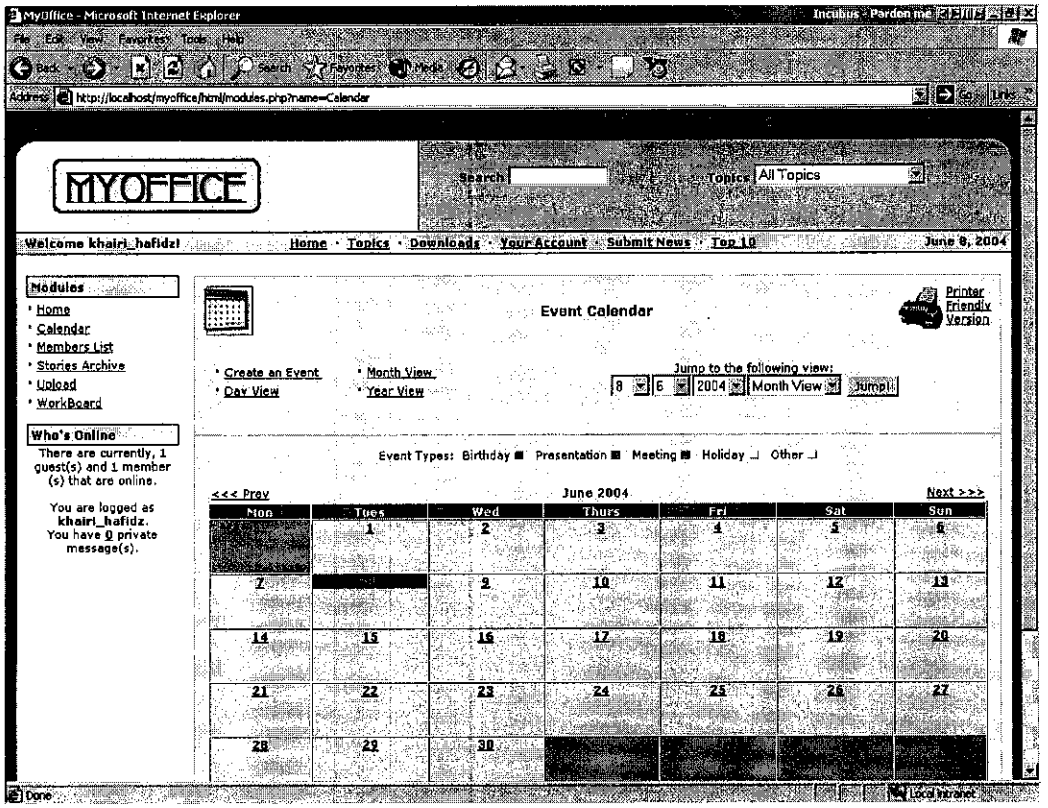

Figure 9: Calendar page

Figure 9 shows the Calendar page. Clicking on the Calendar link will bring the user to this page. Here, user can create events and view other events created by other users on any date shown in the calendar. Events created will need Admin approval before being shown in the Calendar to avoid misuse.

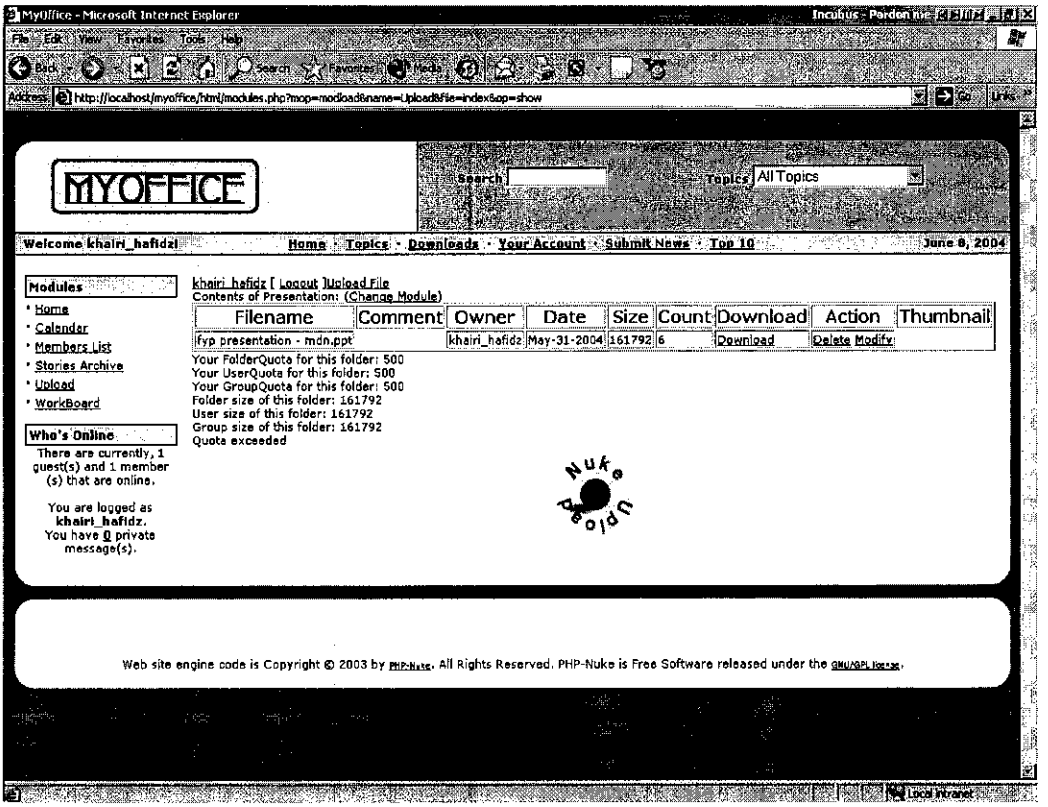

Figure 10: Upload page

Figure 10 depicts the Upload page. Clicking on the Upload link will bring the user this page. Here, user can upload documents into the database or download documents stored in the database. Admin will assign certain user, for example, a project manager, to have control over a folder. The project manager will then can set the privilege for the folder so that only certain authorized user can read, write or modify documents in the folder.

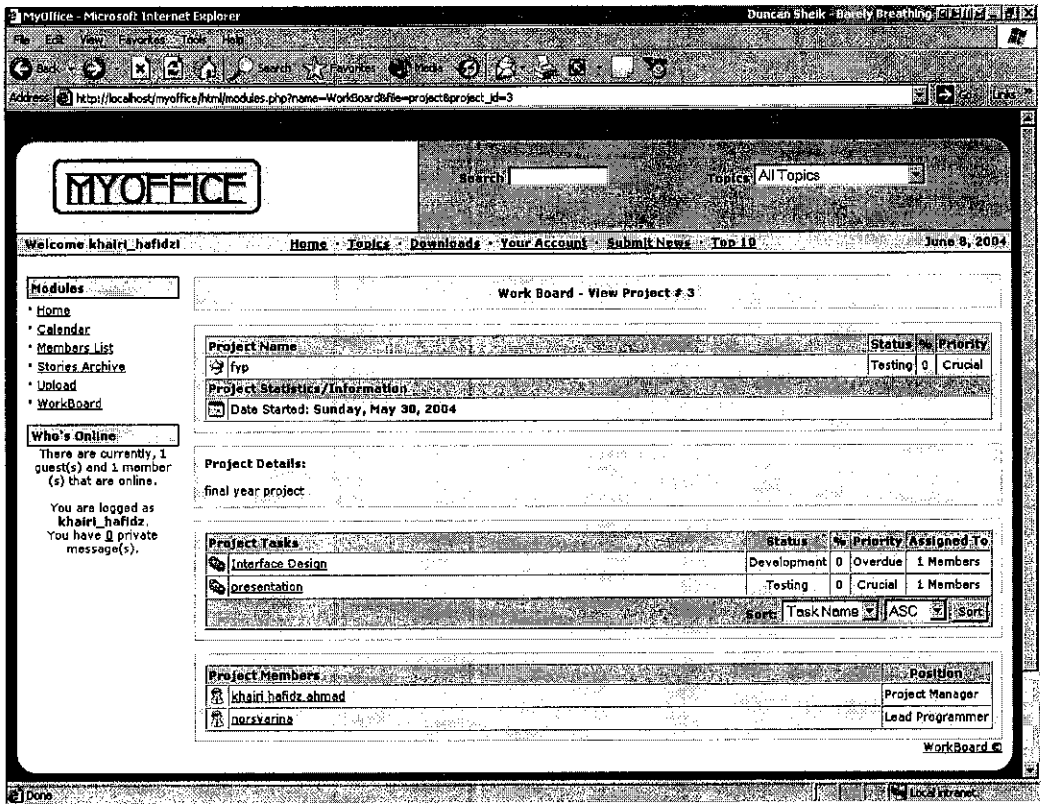

Figure 11: Workboard page

Figure 11 shows the Workboard page. Clicking on the Workboard link will bring the user to this page. Here, user can view list of project along with its current status, tasks to be done and personnel assigned to the project.

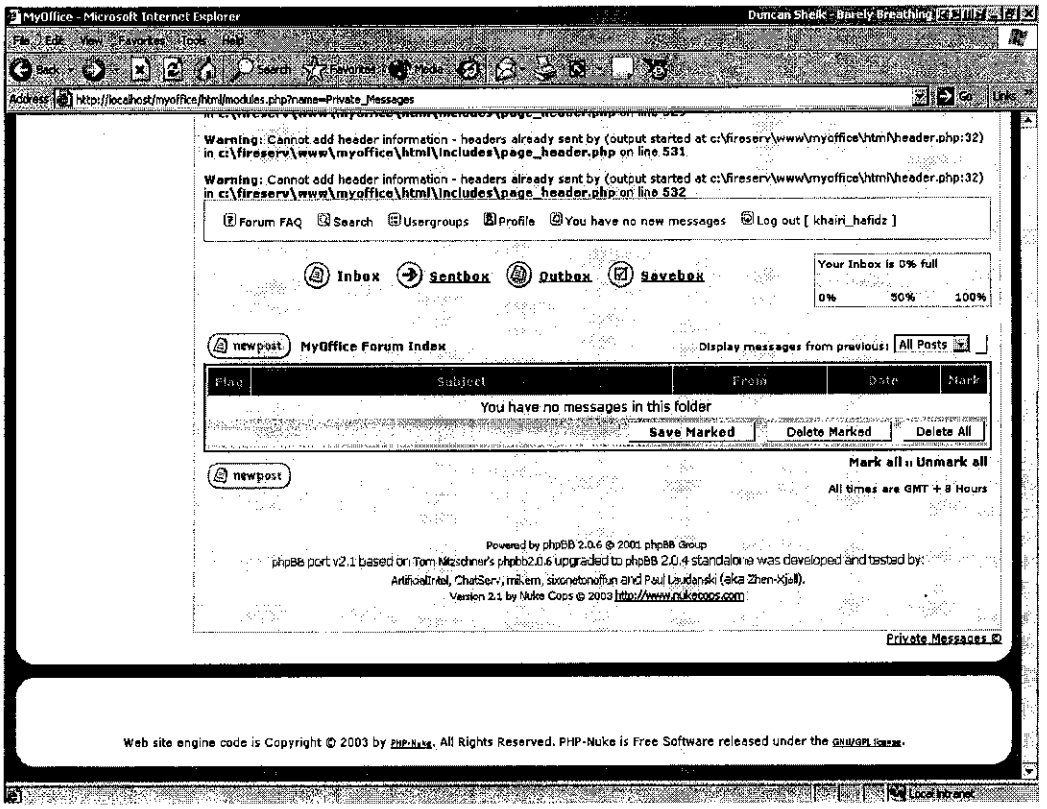

Figure 12: Messages page

Figure 12 depicts the Messages page. Clicking on the Messages link will bring the user to this page. Here, user can post messages to other user and view messages received from other users. Messages sent and received can be saved in a Savebox folder with limited size for future reference.

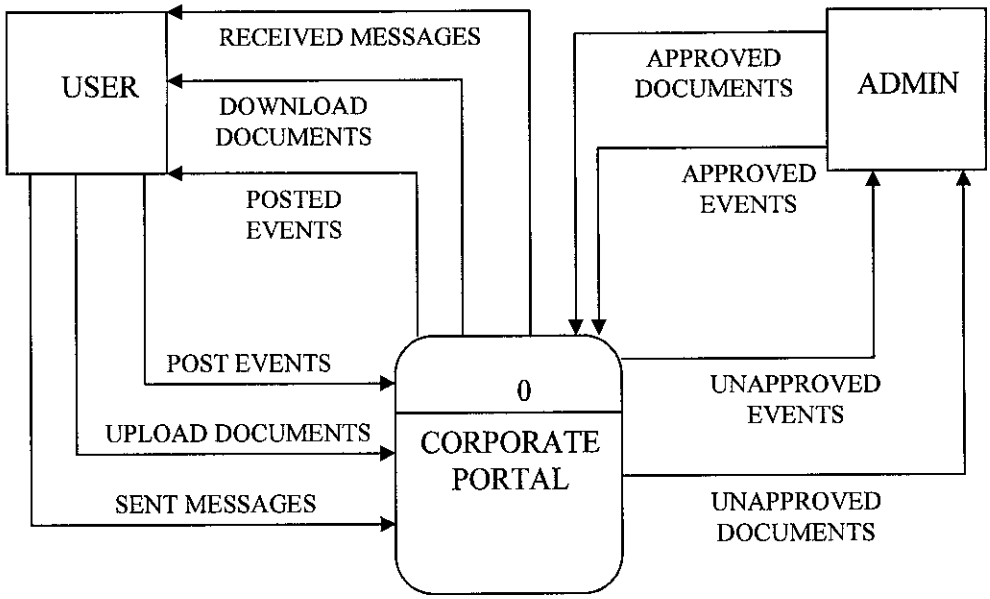

Figure 13: Context Diagram of the system

Figure 13 shows the context diagram of the system. This diagram shows the flow of data from each entity connected to the system. Users are able to post and view events, upload and download documents and also send and receive messages through the system. Events posted and documents uploaded must be approved by the system Admin before users can view the events or download the documents.

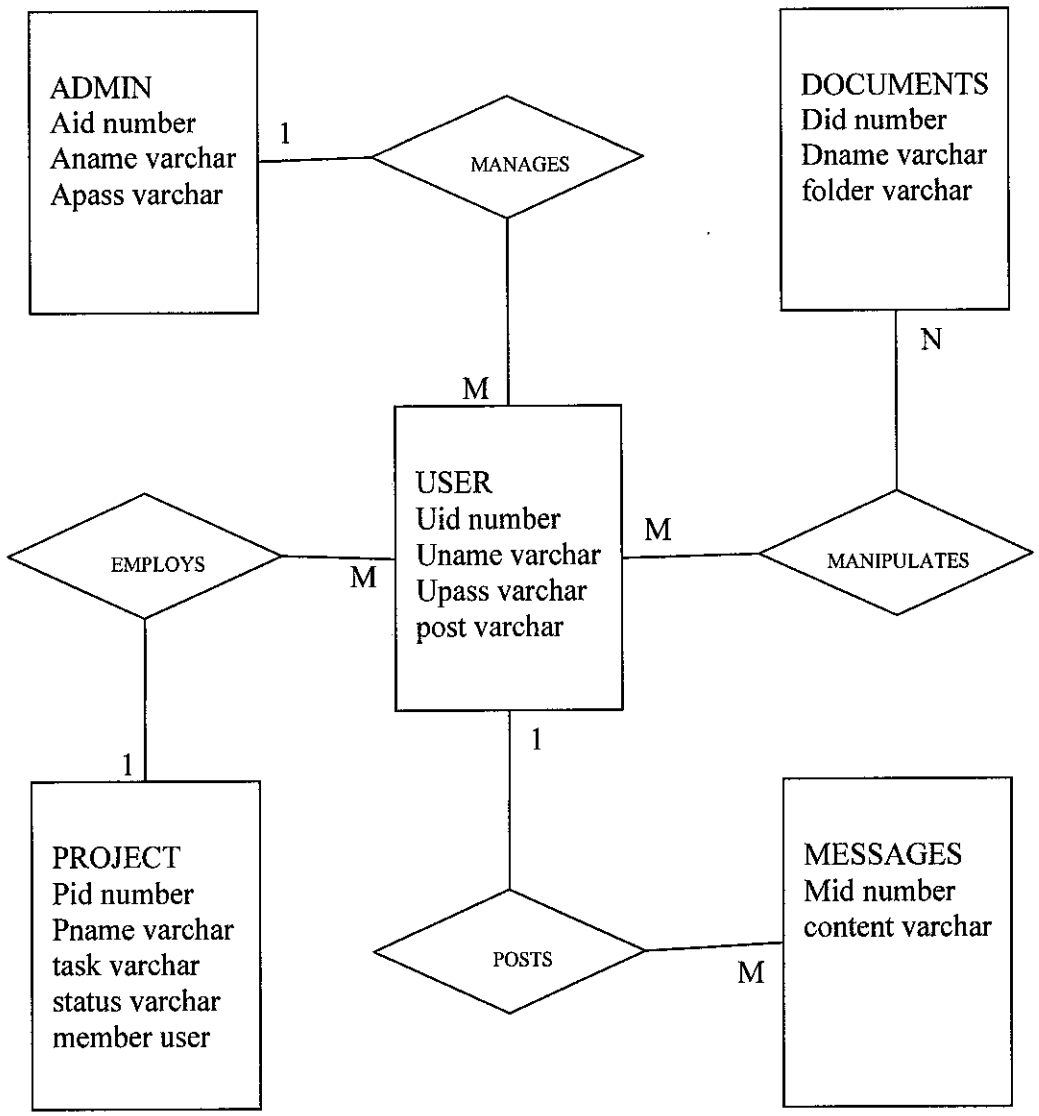

Figure 14: Entity-Relationship Diagram of the system

Figure 14 depicts the entity-relationship of the system. This diagram shows the relationships between each entity in the system. Admin will manage the users account. User can manipulate by reading, writing or modifying documents stored in the database. User also can post messages to other users. Every user will be employed by or assigned to a project. Each user can be employed to one project only.

CHAPTER 5

CONCLUSION AND RECOMMENDATION

5.1 CONCLUSION

Collaboration is a new way for people to work and it often requires people to adapt to the culture of their organization. Change managers need an accurate diagnosis of the organization's culture before they create the plans and interventions needed to make the collaboration successful. The art of successful change management is to understand how to apply actions to change or flex a culture and to measure change and benefits to track the organization's progress towards the goal of a productive collaboration.

As an opinion, the emerging of internet technology has spur on much interest globally. There are also pros and cons of the internet that develops indefinitely. The most prominent and historical moment people have seen is the "e-business boom" or better known as "dot com" mania. In an instant, thousands or maybe millions of company were set up in the hope that they will catch on the hype brought by the internet. Since then, people around the world quickly learned the importance and benefits of the internet. Even though the dot com fever has slowed a little bit, e-business evolution still takes place from time to time. Today, the word e-business has been redefined by IT and IS specialists to have a scope so big that no one could have ever imagined in the first place. Conventional approach in doing business with tons of papers has been replaced with new paperless technology. Finally, the idea of having a corporate portal in a company or any organization has been materialized when giant corporations around the globe realized that they could benefit a lot from e-business, especially from productive collaboration through corporate portal.

5.2 RECOMMENDATION

For recommendation, there are a few suggestions for future expansion of the system. Firstly, the system can have live video streaming function implemented in it. Users not only can communicate through text messaging, but also conducted meetings through video conferencing. Besides that, the system can also implement voice chat function. This can help users to communicate better with other colleagues. Finally, the system can also integrate software, applications and tools so that each user can personalize their own page and have all the necessary information and tools needed to do their job while not having to install every software available in each PC or workstation.

5.3 DISADVANTAGE OF A COPORATE PORTAL

Although a corporate portal brings a lot of benefits to any organization, it also has the negative side of it. User may misuse the functionalities of the portal for other purpose. For example, user uses the messaging system to chat with other user which doesn't bring productivity to the organization. User also may manipulate the documents stored in the database by modifying its content to sabotage other users' work. Users that are not interested in using the portal also can limit the potential that the portal can bring to the organization.

All the problems addressed above can be solved with sound preparation and planning adopted by the organization. Change managers should be responsible in planning the cultural change in the organization from paper-based environment to paper-less environment. The system implementation should be done step-by-step so that employees will accept the change in their working method. Employees should be motivated to use the portal and ensured that everyone can use the system and will increase the productivity of the organization. Supervisors also should be responsible to facilitate the usage of the portal for each user. User should be reminded of what should with the system. The system administrator can also have the privilege to filter out explicit or inappropriate content and ban user which misuse the system.

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