

**ACADEMICIAN PROFILE SYSTEM  
FOR DEVELOPING AN ICT ACADEMIC COMMUNITY**

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For my beloved family who gave me endless love and support...

Hajah Khatijah Abdul Hamid

Zaidah Mohamad

Aziah Mohamad

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## ABSTRACT

This project tackles the following problems: first, there is no clear identification on profile features and type of search that support retrieval of profile to provide information that help manage academic activities in ICT Academic Community; secondly there is no apparent identification on communication tools that allow interaction and information exchange to encourage affiliation among Community of Practice (CoP) in ICT Academic Community and thirdly, there is no particular profile system that been developed (based on the proposed profile features, type of search and communication tools) that enables retrieval of profile together with interaction and information exchange towards ICT Academic Community development. The main findings of the study are the sixteen main academician profile features (Personal Data, Education/Qualification, Expertise/Specialization, Work Experience, Administrative Experience, Teaching Experience, Thesis/Dissertation/Report Examiner Experience, Supervision Experience, Research Experience, Consultancy Experience, Committee Experience, Compile Editorial Experience, Publication/Writing Experience, Academic Voluntary Service, Membership in Association, and Awards/ Recognition) and type of search (the category searches and free text searches). The proposed communication tools, consists of Community Membership, Information Resources, Interaction Facilities and Additional components contributed by the community members. These findings were incorporated in the form of a prototype web-based Academician Profile System. The system was developed using PHP, Macromedia Dreamweaver MX, Apache, MySQL and Rational Rose. The prototype was tested using the User Acceptance Test with ten ICT academician that shows it supports retrieval of profile that provide information to help manage academic activities as well as allows interaction and information exchange for ICT Academic Community development.

## ABSTRAK

Masalah yang ingin diselesaikan melalui projek ini adalah: pertama, tiada satu bentuk pengenalpastian yang jelas terhadap ciri-ciri profil dan jenis enjin pencarian yang membenarkan pencarian profil bagi membekalkan maklumat untuk membantu menguruskan pelbagai aktiviti akademik; kedua, tiada satu bentuk pengenalpastian yang jelas terhadap alat komunikasi yang membenarkan interaksi dan pertukaran maklumat bagi mengalakkan perhubungan di antara *Community of Practice (CoP)* dalam Komuniti Akademik ICT dan ketiga, tiada pembinaan sebuah sistem profil (berdasarkan ciri-ciri profil, jenis enjin pencarian dan alat komunikasi yang dikenalpasti) yang membenarkan pencarian profil sekaligus mengalakkan interaksi dan pertukaran maklumat untuk membangunkan Komuniti Akademik ICT. Kajian projek ini mengenalpasti enambelas ciri-ciri utama profil (Maklumat Peribadi, Pendidikan/Kelayakan, Kepakaran/Pengkhususan, Pengalaman Kerja, Pengalaman Pengurusan, Pengalaman Mengajar, Pengalaman Menilai Tesis/Laporan, Pengalaman Menyelia, Pengalaman Kajian, Pengalaman Konsultasi, Pengalaman Menganggotai Jawatankuasa, Pengalaman Mengedit, Pengalaman Penulisan/Penerbitan, Servis Sukarelawan, Keahlian dalam Persatuan dan Anugerah/Penghargaan) serta jenis enjin pencarian (jenis pencarian berdasarkan kategori dan jenis pencarian yang membenarkan sebarang perkataan dimasukkan). Alat komunikasi yang dicadangkan terdiri daripada komponen Keahlian Komuniti, Sumber Maklumat, Kemudahan Berinteraksi dan komponen tambahan sumbangan pengguna. Kesemua ini digabungkan dalam Sistem Profil Akademik bercorak prototaip berasaskan Web. Pembangunan sistem ini melibatkan perisian PHP, Macromedia Dreamweaver MX, Apache, MySQL dan Rational Rose. Sistem prototaip ini diuji oleh sepuluh orang pendidik melalui *User Acceptance Test* dan terbukti ia mampu mencari maklumat profil dan membenarkan komunikasi untuk pembangunan Komuniti Akademik ICT.

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## **CHAPTER I**

### **PROJECT OVERVIEW**

#### **1.1 Introduction**

The information revolution has not only changed the world as we know it, but also its future potential. Information and Communication Technologies, with their major technological leaps, have affected the lives and lifestyles of people across the globe, as well as the way institutions and organizations do operations. Central to all of these issues are knowledge and information, their capacities, both inherent and catalytic to other capacities, and their extensive scope and versatility. Knowledge and information hold incredible potential for propelling the development process with reasonable promise of quantum achievement. The engine that drives the deployment of knowledge and information is what we collectively call Information and Communications Technologies, or ICTs. They are the pipes and mechanisms through which knowledge and information are packaged and transmitted, to be unbundled for deployment at the receiving end. By virtue of the vast technologies and applications which have come to be (and are continuously being) developed through innovation, ICTs have become so important to virtually all aspects of life, activities and

operations, from research and development to industrialization, from health services to entertainment, from education to systems of governance, that they have become fundamental to basic life.

Therefore, the Malaysian educational institutions implement ICT in education to achieve the challenge of Vision 2020 on establishing a scientific and progressive society; a society that is innovative and forward-looking, one that is not only a consumer of technology but also a contributor to the scientific and technological civilization of the future. Nowadays, the Malaysian educational institutions offer ICT related subjects and fields, from the beginning of primary schools until higher learning institutions. Higher learning institutions also take initiatives in offering variety of courses related to ICT at the level of certificates, diplomas, degrees, Masters and PhDs. ICT diffusion in education, particularly in higher learning institutions lead to the establishment of an ICT Academic Community that own broad perspective on the nature of technology, how to use and apply a variety of technologies.

The ICT Academic Community that consists of academician, play big roles in determining the quality of ICT in higher learning institutions. A glance at knowledge held by academician in higher learning institutions reveals something else of considerable importance, namely that no higher learning institutions today can afford not to look for ways to make the best use of its information. According to Bill Gates,

*“Virtually everything in business today is an undifferentiated commodity, except how a company manages its information. How you manage information determines whether you win or lose. How you use information may be the one factor that determines its failure or success-or runaway success”*

Thus, it is important to manage information about knowledge held by academician comprehensively in a profile. A profile is a character description of an individual that contains the vital properties of the individual, possibly in a machine-readable format so that the computer programs can use it (Yap, 2002). The vital



properties can be name, age, address, e-mail address, position, academic qualification, knowledge, expertise, experience, achievements, etc.

Therefore, it is important to identify profile features and type of search that support retrieval of profile. According to Conway & Sligar (2002), supporting knowledge management users' ability to find the information they need and connect with expertise is the essence of a knowledge management system. For that reason, the communication tools that allow interaction and information exchange has to be recognized. Basically, the development of a profile system based on identified profile features, type of search and communication tools that enables retrieval of profile together with interaction and information exchange is important for ICT Academic Community.

## **1.2 Problem Background**

Tremendous evolution of ICT in Malaysian Public Higher Learning Institutions leads to the formation of Majlis Dekan ICT (MADICT). The council board members are the Deans of ICT Faculties from 17 Malaysian Public Higher Learning Institutions (refer to Appendix A). The formation of MADICT in 2004 is a significant step to catalyze the growth of ICT in Malaysian Public Higher Learning Institutions. As council was formed for the importance of ICT in Malaysian Public Higher Learning Institutions, the nature of responsibilities encompass to become a council that promotes and increase the affiliation among Malaysian Public Higher Learning Institutions in ICT fields that cover:

- ~~///~~ Curriculum development, execution and assessment.
- ~~///~~ Academic development and stabilization.
- ~~///~~ Involvement in graduate thesis and projects assessment.
- ~~///~~ Graduates and staff exchange program execution.
- ~~///~~ Resource sharing in teaching and research.
- ~~///~~ Research, development, publications and consultations.

The ICT Academic Community consists of academician from 17 ICT Faculties in Malaysian Public Higher Learning Institutions under MADICT. This academician has basic roles that include teaching, learning, research, writing and publication whereby these basic roles will expand into various academic activities in ICT Academic Community. These various academic activities require academician profile such as panel or examiners profile for graduate's thesis and projects assessment or candidate profile for academician exchange program execution. It also require academician profile for their related teaching resource, research, publications or consultations and even profile of academician as presenter/participants for conferences, seminars and workshops.

In brief, these various academic activities importantly engage with academician profile and type of search that support retrieval of profile to provide information that help manage academic activities in ICT Academic Community. This profile can be practical if there is an effort on identification of profile features and certain type of search that support retrieval of profile. With no clear identification on profile features, there exist many diverse profile features without standardization and the possibility on fail to notice important profile features is high.

Accordingly, with no clear identification on type of search, it is difficult to search desired profile as 'looking one needle in the haystack' (Conway & Sligar, 2002). Effectively reside in the profile system is the communication tools that allow interaction and information exchange to encourage affiliation among Community of Practice (CoP) in ICT Academic Community. It is important to have an effort to identify the communication tools that allow interaction and information exchange. With no apparent identification on communication tools, the connection of academician and information throughout the Community of Practice (CoP) will be less effective.

At the moment, there is no particular profile system that been developed (based on the identified profiled features, type of search and communication tools) that enables retrieval of profile together with interaction and information exchange for ICT Academic Community. All academician profile are in variety features without standardization and in manual form, whether in a paper filing or office automation software such as Microsoft Word and Microsoft Excel files, or in a stand alone university web site which is not interrelated and integrated with the other ICT members from other universities in one central database with certain type of search. Therefore, more time, costs and efforts were spent since no central information resources are available that support retrieval of profile to provide information that help manage academic activities in ICT Academic Community.

To make matters worse, regardless of occasional face to face meetings, phone, fax or e-mail, there is no particular profile system can serves communication tools that allow interaction and information exchange to encourage affiliation among Community of Practice (CoP) in ICT Academic Community. By then, Community of Practice (CoP) cannot interact and exchange information together with the retrieval of profile. Without the communication tools, interaction and information exchange among Community of Practice (CoP) who are linked together by a common ability or a shared interest, and consequently possess common practical experience, specialist information and intuitive knowledge are not fully interact and exchange (Enkel *et al.*, 2002). Therefore, the affiliation among ICT Academic Community is not continuously growing since information is hardly interacted and exchanged among them.

### **1.3 Problem Statement**

At present, there is no effort to identify the profile features and type of search that support retrieval of profile to provide information that help manage academic activities in ICT Academic Community. There is also no effort to identify the communication tools that allow interaction and information exchange to encourage affiliation among Community of Practice (CoP) in ICT Academic Community. Furthermore, there is no particular profile system that been developed (based on the identified profiled features, type of search and communication tools) that enables retrieval of profile together with interaction and information exchange for ICT Academic Community.

The problems to be tackled by this project are: first, there is no clear identification on profile features and type of search that support retrieval of profile to provide information that help manage academic activities in ICT Academic Community; secondly there is no apparent identification on communication tools that allow interaction and information exchange to encourage affiliation among Community of Practice (CoP) in ICT Academic Community and thirdly, there is no particular profile system that been developed (based on the proposed profile features, type of search and communication tools) that enables retrieval of profile together with interaction and information exchange towards ICT Academic Community development.

## 1.4 Research Questions

Concluding from the problem statement, the whole problem scenario can be presented by the following research questions:

- i. What are the profile features and type of search that support retrieval of profile to provide information that help manage academic activities in ICT Academic Community?
- ii. What are the communication tools that allow interaction and information exchange to encourage affiliation among Community of Practice (CoP) in ICT Academic Community?
- iii. How can technology assist in developing an Academician Profile System (based on the proposed profile features, type of search and communication tools) that enables retrieval of profile together with interaction and information exchange towards ICT Academic Community development?

## 1.5 Objectives

This study is based on several identified objectives. The objectives of the study are:

- i. To propose the profile features and type of search that support retrieval of profile to provide information that help manage academic activities in ICT Academic Community.
- ii. To propose the communication tools that allow interaction and information exchange to encourage affiliation among Community of Practice (CoP) in ICT Academic Community.
- iii. To develop a prototype web-based Academician Profile System (based on the proposed profile features, type of search and communication tools) that enables retrieval of profile together with interaction and information exchange towards ICT Academic Community development.

## 1.6 Scope

The development of this study based on certain scope. The scopes of the study are:

- i. This study is related specifically in profile features, type of search and communication tools for retrieval of profile together with interaction and information exchange through a prototype web-based Academician Profile System that intended to be used by academician.
- ii. The subject domain is restricted to academician (include tutors, assistant lecturers, lecturers, associate professors and professors) from 15 ICT-Specific Disciplines and 16 ICT-Intensive Disciplines as recommended by Denning (1998) that make up the Community of Practice (CoP) in ICT Academic Community.
- iii. The project domain is limited to ICT Academic Community that consists of academician from 17 ICT Faculties in Malaysian Public Higher Learning Institutions under MADICT.
- iv. The project User Acceptance Test will only be conducted on academician from two universities due to time constraint.

## 1.7 Significance of the Project

The project is important to the ICT Academic Community in Malaysia. The importances of the project are:

- i. This project is an early effort and contribution that brings together ICT Academic Community which consists of academician from 17 ICT Faculties in Malaysian Public Higher Learning Institutions under MADICT into single web-based prototype Academician Profile System.
- ii. This project propose the profile features and type of search that support retrieval of profile to provide information that help manage academic activities in ICT Academic Community so that time, costs and efforts were save to gather profiles from one central information resources that available.
- iii. This project propose the communication tools that allow interaction and information exchange to encourage affiliation among Community of Practice (CoP) in ICT Academic Community so that the affiliation among them is continuously growing since information is easily interacted and exchanged among them.
- iv. This project contributes to the development of a web-based prototype Academician Profile System (based on the proposed profile features, type of search and communication tools) that enables retrieval of profile together with interaction and information exchange towards ICT Academic Community success.



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