

**REFORMING WEB-BASED ENTREPRENEUR APPLICATION  
INTERFACE: A CASE STUDY OF DEWAN PERNIAGAAN  
MELAYU MALAYSIA KEDAH (DPMMK).**

A Master project submitted to the Graduate School in partial fulfillment of  
the requirement for the degree of Master Science (Information and  
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## **Abstrak**

Dalam membangunkan antara muka yang “user-friendly” untuk penggunaan DPMMK, banyak penambahbaikan telah dibuat. Penambahbaikan ini dapat menyumbang kepada peningkatan penggunaan “graphical user interface (GUI)”. Projek ini telah mengenalpasti sembilan elemen yang telah diimplementkan dalam penggunaan DPMMK.

Elemen yang dapat mencapai antara muka yang “user-friendly” bagi sistem dalam DPMMK adalah keselamatan, antaramuka yang dinamik, kuasa dalam sistem, pemberian kuasa, sumber terbuka, kemudahan system, laporan, prestasi rangkaian dan fungsi analisis. Elemen ini boleh dibahagikan dua kategori iaitu elemen langsung dan tidak langsung.

Elemen langsung memberikan kesan langsung terhadap GUI. Bagi element tidak langsung akan menyumbang kepada kebolehan system dalam pensajian GUI. Contoh elemen tidak langsung adalah prestasi dan perlaksanaan.

Secara ringkasnya sistem DPMMK merupakan satu aplikasi yang dalam pelbagai perkara. Untuk mencapai antara muka yang ‘user-friendly’ sistem ini perlulah memenuhi keperluan pengguna.

## **Abstract**

In developing a user-friendly interface for DPMMK application many new enhancement has been made. These enhancements contributed the improvement of DPMMK application graphical user interface (GUI). This project has discovered nine elements that has been implement in DPMMK application.

The element in achieving a user-friendly interface for DPMMK system is security, dynamic interface, system authority, empowerment, open source, accessibility, reporting, network performance, and analyze feature. This element could be described into two categories that are indirect and direct element.

The direct element has a direct impact on the graphical user interface such as dynamic interface, reporting and analyze feature (graphic and animation). While the indirect element for examples is performance and deployment would contribute to the system ability in displaying the GUI. The indirect elements would include security, open source, accessibility and network performance.

In short DPMMK system is a dynamic system in many aspects. In achieving a user-friendly interface the system must satisfy the user need. The issue in user-friendly interface is so wide that in order to achieve it, a system must be reformed in many aspects and not just the graphical user interface.

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# **CHAPTER 1**

## **INTRODUCTION**

Entrepreneur application is an information system where data of member of an entrepreneur organization such as Dewan Perniagaan Melayu Malaysia Kedah(DPMMK) or Malay Chamber Of Commerce Malaysia Kedah are kept and manage. This could include member directory, management and analysis. As a non-profit organization where its aim is to benefit its member, analysis is important ability for this organization. This data could be used in training needs analysis, for the purpose of funding suitability creating networking among member.

The process of reforming entrepreneur application interface involve many technologies used in developing, designing and maintaining the user-friendly desired interface. An interface is what can be seen when an individual looks at a computer screen monitor. But achieving it involves many technical and non-technical aspects. It is not just the graphical or physical display on the screen monitor.

### **1.1 DPMMK Background**

DPMMK is a non-government organization (NGO) that champions the interest of Malay business community in Kedah. It is a meeting place for Kedah entrepreneurs. DPMMK has lot of role in many aspect of entrepreneur development. Its existence is a catalyst to entrepreneur improvement.

Among solution provide by Information Technology (IT) such as a web based information system that could automate manually DPMMK's member management and business process thus increasing its effectiveness and contribution to its members. Apart from providing automation, information management such as member directory, business document or online application will upgrade DPMMK level of services to its members. This is crucial especially in today's competitive business environment.

The contents of  
the thesis is for  
internal user  
only

## REFERENCES

Beaudouin-Lafon, M. (2004), *Designing Interaction, not Interfaces*, AVI '04, May 25-28, 2004.

Beier, B. & Vaughan, M. W. (2003), *Web usability: The bull's-eye: a framework for web application user interface design guidelines*, Proceedings of the conference on Human factors in computing systems, April 2003

Gonzalez, C. (1996) *Does animation in user interfaces improve decision making?* Proceedings of the SIGCHI conference on Human factors in computing systems: common ground.

Huang, Y. W., Yu, F., Hang C., Tsai, C. H., Lee, D. T. & Kuo, S. Y. (2004), *Security and privacy: Securing web application code by static analysis and runtime protection*, Proceedings of the 13th international conference on World Wide Web, May 2004

Jansen, B. J. (1998), *The Graphical User Interface: An Introduction*, Seminal works in computer human interaction. SIGCHI Bulletin. 30(3), 24-28.

Kothari, B. & Claypool, M. (2001) *Dynamic Web pages: performance impact on Web server*, Internet Research: Electronic networking, Applications and Policy; Volume 11 No. 1; 2001

Labrinidis, A. & Roussopoulos, N. (2000) *Generating dynamic content at database-backed web servers: cgi-bin vs. mod\_perl*, ACM SIGMOD Record, Volume 29 Issue 1 March 2000

Mandel, T. (2002), *Commentaries: Quality technical information: paving the way for usable print and web interface design*, ACM Journal of Computer Documentation (JCD) , August 2002, Volume 26 Issue 3

Marcus, A. & Gould, E. W. (2002), *Crosscurrents: cultural dimensions and global Web user-interface design*, Interactions, July 2000, Volume 7 Issue 4

Morrison, M., Morrison, J. & Keys, A.(2002) *Integrating web sites and databases*, Communications of the ACM,September 2002, Volume 45 Issue 9

Mull, M. (1997) *Perl and Sockets*, Linux Journal, March 1997

Nielsen, J. (1999), *User interface directions for the Web*, Communications of the ACM, January 1999, Volume 42 Issue 1

Nguyen, T. & Srinivasan. V. (1996), *Accessing relational databases from the World Wide Web*, ACM SIGMOD Record , Proceedings of the 1996 ACM SIGMOD international conference on Management of data, June 1996, Volume 25 Issue 2

Phillips, C. & Kemp, E. (2002), *In Support of User Interface Design in the Rational Unified Process*, Third Australasian User Interface Conference (AUIC 2002),

Rees, M. J. (2002), *Evolving the browser towards a standard user interface architecture*, Australian Computer Science Communications, Third Australasian conference on User interfaces, January 2002- Volume 7, Volume 24 Issue 4

Ricca, F. & Tonella, P. (2001), *Analysis and Testing of Web Applications*, ITC-irst, Centro per la Ricerca Scientifica e Tecnologica, Italy.

Richardson, M. (1999) *Larry Wall, The Guru of Perl*, Linux Journal, May 1999

Schmuller, J. (2002) *SAMS Teach Yourself UML*, Sams Publishing

See, E. J. & Douglas Woestendiek, C. (1986) *Effective user interfaces: some common sense guidelines*, Proceedings of the 5th annual international conference on Systems documentation.

Wade, J. (1984), *Practical Guidelines For A User-Friendly Interface*, ACM SIGAPL APL Quote Quad, Proceedings of the international conference on APL, Volume 14 Issue.