

**EVALUATING THE WEB CONFERENCE PROTOTYPE  
AT FTM BUILDING**

**CHAROENSRI SRISUWAN**

**UNIVERSITI UTARA MALAYSIA  
2004**

**EVALUATING THE WEB CONFERENCE PROTOTYPE  
AT FTM BUILDING**

A Master project submitted to the Graduate School in partial  
Fulfillment of the requirements for the degree of  
Masters of Science (Information and Communication Technology)  
University Utara Malaysia

By  
Charoensri Srisuwan



**JABATAN HAL EHWAL AKADEMIK**  
**(Department of Academic Affairs)**  
**Universiti Utara Malaysia**

**PERAKUAN KERJA KERTAS PROJEK**  
**(Certificate of Project Paper)**

Saya, yang bertandatangan, memperakukan bahawa  
(I, the undersigned, certify that)

**CHAROENSRI SRIUWAN**

calon untuk Ijazah  
(candidate for the degree of) **MSc. (ICT)**

telah mengemukakan kertas projek yang bertajuk  
(has presented his/her project paper of the following title)

**EVALUATING THE WEB CONFERENCE PROTOTYPE**  
**AT FTM BUILDING**

seperti yang tercatat di muka surat tajuk dan kulit kertas projek  
(as it appears on the title page and front cover of project paper)

bahawa kertas projek tersebut boleh diterima dari segi bentuk serta kandungan  
dan meliputi bidang ilmu dengan memuaskan.  
(that the project paper acceptable in form and content, and that a satisfactory  
knowledge of the filed is covered by the project paper).

Nama Penyelia Utama  
(Name of Main Supervisor): **MR. AZIZI ABAS**

Tandatangan  
(Signature)

:

Tarikh  
(Date)

:

7-4-2015

## **PERMISSION TO USE**

In presenting this thesis in partial fulfillment of the requirements for a postgraduate degree from Universiti Utara Malaysia, I agree that the University Library may make it freely available for inspection. I further agree that permission for copying of this thesis in any manner, in whole or in part, for scholarly purpose may be granted by my supervisor(s) or, in their absence by the Dean of the Graduate School. It is understood that any copying or publication or use of this thesis or parts thereof for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall be given to me and to Universiti Utara Malaysia for any scholarly use which may be made of any material from my thesis.

Requests for permission to copy or to make other use of materials in this thesis, in whole or in part, should be addressed to

Dean of Graduate School  
Universiti Utara Malaysia  
06010 UUM Sintok  
Kedah Darul Aman.

## ABSTRAK

Konferen berasaskan web merupakan satu aplikasi multimedia yang membenarkan satu kumpulan rakan sekerja mengadakan pertemuan secara 'online' walaupun mereka terpisah jauh dari lokasi tempat kerja. Menggunakan web konferen membenarkan mereka berinteraksi secara lisan, teks atau teks sembang yang membolehkan mereka berkongsi maklumat samada untuk tujuan perniagaan, pendidikan mahu pun untuk tujuan peribadi. Walaubagaimanapun, penggunaan teknologi web konferen masih lagi kurang dalam konteks Malaysia. Oleh itu, projek ini memfokuskan dalam pembangunan satu aplikasi web konferen yang membenarkan pengguna berkomunikasi sesama mereka menerusi rangkaian. Projek ini juga mengukur penggunaan jalur lebar untuk menilai prestasi aplikasi ini di dalam rangkaian memandangkan kebanyakan aplikasi yang dibina tidak diberi penekanan terhadap proses pemantauan.

Hasil dari kajian ini menunjukkan bahawa aplikasi web konferen ini berupaya untuk mengatasi masalah konferen secara tradisional dan ia juga menyediakan satu sistem aplikasi multimedia yang berkualiti tinggi. Prestasi aplikasi ini juga memberi petunjuk yang positif dalam penggunaan jalur lebar ia melibatkan 'Quality of Service' yang tinggi.

## **ABSTRACT**

Web Conferencing is a multimedia application which allows a group of people to meet online and allow collaboration between dispersed teams. Using web conferencing, groups are able to see, hear, text chat, present and share information in a collaborative manner. This application is widely used in business and education environment as well as for personal communication. However, in Malaysia context, there still lack of web conference application developed. Therefore, the purpose of this project is to develop web conference prototype that allows user communicate among themselves via the network. Then, this project attempts to measure the bandwidth usage in order to analyze its performance on the network since there is lack of monitoring process done after completion of an application.

Hence, the results shows that the web conference application intends to overcome the traditional meeting and provide high quality of multimedia application system. The application performance in terms of bandwidth usage show positive indicative for further enhancement of the project as it involves high quality of QoS.

## ACKNOWLEDGEMENTS

These acknowledgements go to several dedicated persons who have along the way provided support and advice during my progress in finishing this project. It is extremely impossible to mention all the names of these good people.

First, I would like to express my most sincere appreciation to my supervisor, Mr. Azizi Bin Abas, who has constantly provided guidance, comments as well as valuable ideas along the way.

I also would like to offer my sincere gratitude to my friends Mrs. Kasmawati Mat Japar, Mrs. Amani A. Mubarak, Miss Ilyana Ismail, Miss Nor Asikin Ismail and Miss Noor Hazlin Abd Rahman for polishing my English and for their gracious help and support. Without you all it would be impossible for me to complete this project.

Next, I would like to thank to both of the evaluators; Mr. Ahmad Hanis Mohd Shabli and Mr. Ali Yusny for their good suggestions.

Furthermore, I would like to thank you the lecturers; Abdul Razak Rahmat, Azmi Md. Saman, and Baharudin Osman for their effort and willingness of testing the application during evaluation phase.

## TABLE OF CONTENTS

	<b>Page</b>
PERMISSION TO USE	i
ABSTRAK	ii
ABSTRACT	iii
ACKNOWLEDGEMENTS	iv
TABLE OF CONTENTS	v
LIST OF TABLES	viii
LIST OF FIGURES	ix
<b>CHAPTER 1: INTRODUCTION</b>	
1.1 Background of Study	1
1.2 UUM Environment	3
1.3 Problem Statement	4
1.4 Project's Objective	5
1.5 Research Question	5
1.6 Project Scope	6
1.7 Significance of Study	6
1.8 Conclusion	7
<b>CHAPTER 2: LITERATURE REVIEW</b>	
2.1 Introduction	8
2.2 Web Conference Functionality	8
2.3 Example of Web Conference Application	10
2.3.1 NetMeeting	10
2.3.2 Yahoo Messenger	12
2.4 Quality of Service	13
2.5 Bandwidth	15
2.6 UUM Case Study	19
2.7 Conclusion	20



## **CHAPTER 3: METHODOLOGY**

3.1	Introduction	21
3.2	Analysis Phase	21
3.2.1	System Architecture	22
3.2.2	System Requirement	22
3.3	Design Phase	24
3.3.1	Navigation Diagram	25
3.3.2	Interface Layout	26
3.4	Development Phase	27
3.4.1	Macromedia Flash Communication Server MX	27
3.4.2	Macromedia Flash MX	27
3.4.3	ColdFusion Server 4.5	28
3.4.4	ColdFusion Studio 4.5	28
3.4.5	Microsoft Access	29
3.4.6	Ultra Network Sniffer	29
3.5	Implementation Phase	33
3.6	Conclusion	33

## **CHAPTER 4: RESULTS AND FINDINGS**

4.1	Introduction	34
4.2	Web Conference Application	35
4.2.1	Interfaces	35
4.2.2	Features	45
4.3	Packet Size	46
4.4	Transfer Rate	48
4.4.1	Packet Per Second	48
4.4.2	Byte Per Second	50
4.5	Bandwidth Performance	51
4.6	Conclusion	52

<b>CHAPTER 5: CONCLUSION</b>	
5.1	Introduction 53
5.2	Limitation 53
5.2.1	Number Of Participant 54
5.2.2	Time Constraint 54
5.2.3	Monitoring Tool 54
5.2.4	Lack Of Research 54
5.2.5	Computer Hardware 55
5.2.6	Scope Of The Study 55
5.3	Future Work 55
5.3.1	Publish The Web Conference Application On The Internet. 56
5.3.2	Quality of Service(QoS) 56
5.4	Conclusion 56
<b>REFERENCE</b>	58
<b>APPENDIX A: DATA COLLECTION</b>	60
<b>APPENDIX B: SYSTEM SOURCE CODE</b>	65

## LIST OF TABLES

	<b>Page</b>
Table 2.1: Yahoo messenger feature	13
Table 3.1: Table member information	29
Table 4.1: Packet size (Byte)	47
Table 4.2: Transfer rate (Packet/sec)	49
Table 4.3: Transfer rate (Byte/sec)	50
Table 4.4: Parameter of bandwidth requirement	52

## LIST OF FIGURES

	Page
Figure 2.1: The example of web conference from NetMeeting application	11
Figure 2.2: The example of web conference from Yahoo Messenger	12
Figure 3.1: Server Architecture	22
Figure 3.2: The navigation diagram	25
Figure 3.3: Interface layout for the web conference application	26
Figure 3.4: Interface for select network adapter.	30
Figure 3.5: Interface of Ultra Network Sniffer	31
Figure 3.6: Interface of Network Analyst Options	31
Figure 4.1: Interface for login	36
Figure 4.2: Interface for registration	37
Figure 4.3: Interface for allow server to access user's webcam	38
Figure 4.4: Interface of web conference application	40
Figure 4.5: View speed of connection	42
Figure 4.6: Setting connection speed	44
Figure 4.7: Setting font color	45
Figure 4.8: Graph of packet size	48
Figure 4.9: Graph of transfer rate (Packet/sec)	49
Figure 4.10: Graph of transfer Rate (byte/sec)	51

# **CHAPTER 1**

## **INTRODUCTION**

### **1.1 Background of Study**

Traditionally, people need to meet each other in order to communicate and share information among them. In this regard, they have to set for the specific of time and place. As the world emerged, telephone is used by people to communicate with each other. This can reduce time as well as save cost.

In this information era, high technology of telecommunication tools is provided such as internet. Through the internet, people can access information as well as sharing idea. With this technology, a web conference application is introduced to allow people communicating with other person via the net or intranet.

A web conference or video conference is a live connection between people in difference location for purpose of communication, usually involving audio, text, and video. It provides transmission of static images and text

The contents of  
the thesis is for  
internal user  
only

## REFERENCE

- Anonymous (2004). *Definition*. Retrieved on November 26, 2004 from <http://searchnetworking.techtarget.com>
- Bradley Mitchell (2004). *Wireless/ Networking*. Retrieved on November 27, 2004 from <http://compnetworking.about.com/>
- Cox, J. R., & Turner J. S. (1995). *Project Zeus: Design of a Broadband Network and its Application on a University Campus*. Retrieved on February 1, 2005 from <http://citeseer.ist.psu.edu/cache/papers/cs/365/http:zSzzSzwww.cs.wustl.edu/zSzczSztechreportszSz1991zSzwuCs-91-45.pdf/coX95project.pdf>
- Edoardo Biagioni, & Peter Hinely, Chun Lin, Xinmin Wang (2000), *Internet Size Measurements*. Retrieved on November 27, 2004 from <http://citeseer.ist.psu.edu/biagioni00internet.html>.
- Eric D. Siegel (1999). *Designing Quality of Service*. Canada: John Wiley & Sons, Inc.
- Francois Fluckiger (1995). *Understanding Networked Multimedia Application and Technology*. Great Britain: Prentice Hall.
- Franklin F. Kuo, Wolfgang Effelsberg, & J.J. Garcia-Luna-Aceves (1998). *Multimedia Communications Protocols and Application*. The United States: Prentice-Hall, Inc.
- Kevin Lai, & Marry Barker. (1999) *Measuring Bandwidth*. Retrieved on November 25, 2004 from <http://citeseer.ist.psu.edu/13922.html>

Mark Claypool, & John Riedl(1998). *Quality Planning for Distributed Collaborative Multimedia Applications*. Retrieved on November 27, 2004 from

Qingming Ma (1997). *On Path Selection for Traffic with Bandwidth Guarantees*. Retrieved on November 26, 2004 from <http://citeseer.ist.psu.edu/ma97path.html>

Steve Heath (1999). *Multimedia Communication Technology*. Great Britain: The Bath Press

Wei Zhao, & Satish K. Tripathi (1999), *Bandwidth-Efficient Continuous Media Streaming Through Optimal Multiplexing*. Retrieved on November 27, 2004 from <http://citeseer.ist.psu.edu/zhao99bandwidthefficient.html>

Wenyu Jiang, & Henning Schulzrinne (1999). *QoS Measurement of Internet Real-Time Multimedia Services*. Retrieved on November 26, 2004 from <http://citeseer.ist.psu.edu/jiang99qos.html>

Whitten, J., Bentley, L., & Dittman, K. (2001). *Systems Analysis and Design Methods*. USA: McGraw-Hill.