

**User Acceptance of Prepaid Wireless Internet Technology
(Guthrie College in UUM) As Case Study**

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UNIVERSITI UTARA MALAYSIA

2008

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**User Acceptance of Prepaid Wireless Internet Technology
(Guthrie College in UUM) As Case Study**

**Thesis submitted to the Faculty of Information Technology in
partial fulfillment of the requirements for the degree Master of
Science (Information Technology),**

Universiti Utara Malaysia

By

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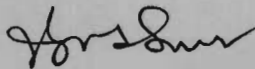
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ABSTRACT

Technology Acceptance Model (TAM) is capable of explaining user behavior across a broad range of end-user computing technologies and user populations. The prepaid wireless internet technology provide to the students great opportunities and challenges. This aims of this research is to measure “student’s acceptance of the wireless internet technology in the Guthrie College in UUM” by use Technology Acceptance Model (TAM) .This research investigates and discusses the TAM results involving use prepaid wireless internet technology. It will also attempt to understand students’ beliefs, perceptions, attitudes and intentions. Findings will also find out the impact of wireless internet on the teacher's job performance.

Acknowledgements

First of all, thank the almighty God, for generously supporting me through all my studies. I would like to express my sincere gratitude to my supervisors, Mr. Azmi Md Saman for his kind help, support and guidance and pieces of advice throughout the whole process of writing this thesis .I would like to express my gratitude to many staff at the University were a constant challenge and source of support. I owe to them a lot for what they taught me during these years.

I would like to show my sincere appreciation to Mr. Ahmad Hisham bin Zainal Abidin, for all of his kind supports.

Many thanks go to my relatives back home especially to my beloved father and mother, Mr. Abdulla Almahdi Alghali and Mrs. Amsad Ali Abdulla Sekah. I wish to take this opportunity to express my deepest thanks to my brothers, sisters, brother in law and for the love affection and support they have provided me with on every step of my life, specially this important part of my education.

Last but not least I want to extend my warmest thanks to those that have helped me, in any way, during my thesis work.

My Allah bless us

TABLE OF CONTENT

Permission of Use	i
Abstract	ii
Acknowledgment	iii
Table of Contents	iv
List of Figure	viii
List of Tables	ix

CHAPTER ONE: INTRODUCTION

1.0	Interdiction	1
1.0.1	Why prepaid services?	4
1.0.2	KrisNet and Guthrie college Wireless local Area Network	5
1.0.2.1	Main Objectives of Guthrie college Wireless local Area Network	6
1.0.2.2	Room Access and Power point	6
1.0.2.3	Guthrie college Wireless local Area Network structure	6
1.1	Problem Statement	7
1.2	Research Question	8
1.3	Objective of Research	8
1.4	Significant of the Research	9
1.5	Scope of the Research	10
1.6	Structure of Research	10

CHAPTER TWO: LITERATURE REVIEW

2.1	Internet History.....	11
2.2	Internet Access Methods	12
2.3	Reviews of Wireless Network Technology	13
2.4	Benefits of Increasing Internet Usage	14
2.5	Impact of the Internet on Education	15
2.6	The Future of the Internet	17
2.7	Prepaid Services Background	18
2.8	Customers Satisfaction	20
2.9	Service Quality	21
2.10	Internet Usage and the Population of the World	22
2.11	Theoretical of User Acceptance	24
2.11.1	Theory of Reasoned Action	24
2.11.2	Theory of Planned Behavior	27
2.11.3	Technology Acceptance Model	29
2.12	Previous studies used Technology Acceptance Model... ..	33
2.13	Conclusion	37

CHAPTER THREE: RESEARCH METHODOLOGY

3.0	Introduction	38
3.1	The Purpose of the Research	39
3.2	Research Approach	39
3.3	Research Strategy	40

3.4	Sample Selection	41
3.4.1	Population	41
3.4.2	Sample Size	42
3.5	Data Collection Method.....	44
3.5.1	Conducts Interview	44
3.5.2	Questionnaire	44
3.5.2.1	Pilot Study	47
3.6	Analysis the Data	48
3.7	Conclusion	49

CHAPTER FOUR: FINDING AND ANALYSIS

4.1	Finding of Research	50
4.1.1	Demographic Background	50
4.1.2	The perceived Usefulness of Prepaid Wireless Internet Access.....	52
4.1.3	The Perception for Ease of Use of prepaid wireless internet access	55
4.1.4	Attitude toward Using Prepaid Wireless Internet Access	58
4.1.5	Behavioral Intention	59
4.1.6	Actual Usage 1	63
4.1.7	Actual Usage 2.....	63
4.2	Analysis for Findings.....	64
4.2.1	The perceived Usefulness of Prepaid Wireless Internet Access.....	64
4.2.2	The Perception for Ease of Use of Prepaid Wireless Internet Access	65
4.2.3	Attitude toward Using Prepaid Wireless Internet Access.....	65

4.2.4 Behavioral Intention	66
4.2.5 Actual Usage	66
4.3. Conclusion.....	67

CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion	69
5.2 Recommendation and Future Work	70

REFERENCES	71
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APPENDIXES A	97
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LIST OF FIGURE

Figure 1.1 WLAN example	3
Figure 1.2 Logical Guthrie college Wireless local Area Network structure	7
Figure 2.1 Theory of Reasoned Action	25
Figure 2.2 Theory of Planned Behavior.....	27
Figure 2.3 Technology Acceptance Model.....	30
Figure 3. 1 The research methodology	49
Figure 4.1 Responders' Gender	51
Figure 4.2 Perceived Usefulness of Prepaid Wireless Internet Access....	52
Figure 4.3 Perceived Ease of Use of Prepaid Wireless Internet Access....	55
Figure 4.4 Attitude toward Using Prepaid Wireless Internet Access.....	58
Figure 4.5 Behavioral Intention of Using Prepaid Wireless Internet Access	60
Figure 4.6 Actual Usage 1.... ..	63
Figure 4.7 Actual Usage 2.	64

LIST OF TABLES

Table 2.1	World Internet Usage and Population Statistics	23
Table 4.1	Responders' Gender	51
Table 4.2	Perceived Usefulness of Prepaid Wireless Internet Access	53
Table 4.3	Perceived Ease of Use of Prepaid Wireless Internet Access.....	56
Table 4.4	Attitude toward Using Prepaid Wireless Internet Access.....	59
Table 4.5	Behavioral Intention of Using Prepaid Wireless Internet Access	61
Table 4.6	Actual Usage 1.....	63
Table 4.7	Actual Usage 2.....	64

CHAPTER ONE

INTRUDUCTION

1.0 Interdiction

The Internet plays a crucial role in the access of information resource. Source of information and other opportunities available via the internet are increasing exponentially. This comes with the steady increase in internet use for education (Edward and Bruce, 2002).

In a campus location, wireless technology allows users to achieve total computers and location independence. Computer resources can now be put wherever they are needed without wire connections for every computer. If any changing in educational environment, wireless technology can reduce the cost and complexity of facility configurations. Moreover with a WLAN, a single access point provides network access for multiple PCs with WLAN client adapters. Users can move among access points without connection interrupt. This means freedom to move in the area with

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REFERENCES

- Ahmad, S. (2005). "The Application of Information Systems in the Jordanian Banking Sector A study of the Acceptance of the Internet". Retrieve 2008 from <http://www.libraryuow.edu.au/adt-NWU/uploads/approved/adt- NWU20051006.155558/public/01Front.pdf>
- Ajzen (1985). "From intentions to actions: a theory of planned behaviour", *Action Control: From Cognition to Behaviour*. pp. 11-39,
- Ajzen (1991). "The Theory of Planned Behaviour", *Organisational Behaviour and Human Decision Processes* Decision Processes, vol. 50, no.2, pp.179-211
- Ajzen (2002). "Behaviour intention based on the Theory of Planned Behaviour".
- Ayoku, A. (2001). "Internet Access". Retrieve 2008 from <http://www.emeraldinsight.com/Insight/viewContentItem.do?contentType=Article&contentId.pdf>
- Behrens, S., Jamieson, K., Jones, D., & Cranston, M. (2005). "Predicting system success using the technology acceptance model: A case study" Retrieve 2008 from http://cq-pan.cqu.edu.au/david-jones/Publications/Papers_and_Books /camera Ready_v3.pdf
- Brian, J. (2000). "Streaming media and the future of internet video:a market model and analysis". Retrieve 2008 from http://itc.mit.edu/rpcp/Pubs/Theses /Jackson_June00.pdf
- Cacioppo J. T., Petty R. E & Geen T. R., (1989). "Attitude structure and function".
- Charith, N. (2006) A Model of User Acceptance of Learning Management Systems: a study within Tertiary Institutions in Retrieve 2008 from http://www.caudit.edu.au/educa useaustralasia07/authors_ papers/Nanayakkara-361.pdf New Zealand".

- Chau, Hu, (2002). "Investigating healthcare professionals' decisions to accept telemedicine technology: an empirical test of competing theories", *Information & Management*. vol. 39, no. 4, pp. 297-311.
- Cisco System (2005). 2003 Wireless LAN Benefits Retrieved from http://www.cisco.com/en/US/prod/ollateral/wireless/ps5679/ps6548/prod_brochure0900aecd80366449.pdf
- ComControl (2006). "Why prepaid services". Retrieved 2008 from <http://www.cpdicom.com/pdf/whyprepaidserviceswp0407.pdf>
- Constance, P., Naveen, D. (2006). "Using the technology acceptance model to explain how attitudes determine Internet usage: The role of perceived access barriers and demographics". Retrieve 2008 from www.management.usm.my/ramayah/conf79.doc.
- Creswell, J.W. (2003). "Research Design: Qualitative, Quantitative, and Mixed Methods Approaches", Second Edition, Sage Publication, Inc Retrieved 2008 from <http://www.contemporarynurse.com/17.1/17-1p20a.php>
- Davis (1989). "Perceived usefulness, perceived ease of use and user acceptance of information technology". *MIS Quarterly*, vol. 13, no. 3, pp. 319-40.
- David, (2002). "Is the Internet a U.S. Invention? – An Economic and Technological History of Computer Networking". Retrieve 2008 from <http://www.druid.dk/conferences/nw/paper1/movery.pdf>
- Davis, FD, Bagozzi, RP & Warshaw, PR (1989), 'User acceptance of computer technology: a comparison of two theoretical models', *Management Science*, vol. 35, no. 8, pp. 982-1003.
- Edwards, S. L., Bruce, C. S (2002). "The Learning Organization" Retrieved 2008 from <http://www.developmentinpractice.org/readers/Learning%20Org/ntroesay.pdf>

- Fishbein, M., Ajzen, I. (1975). "Belief, attitude, intention, and behavior : an introduction to theory and research, Addison-Wesley series in social psychology". Retrieve 2008 from <http://home.com cast. net/~icek.aizen/book/ch2.pdf>
- Fox, S. (2004). "Older Americans and the internet. The pew internet and American life project". Retrieve 2008 from <http://www.pewInternet.org>
- Friday, S. Cotts, D.G. (1995) "Quality Facility Management: A Marketing and Customer Service Approach".
- Gefen, D., Karahanna, E., & Straub, D. W. (2003). "Inexperience and experience with online stores: The importance of TAM and trust". Retrieve 2008 from <http://ieeexplore.ieee.org.eserv.uum.edu.my/iel5/17/27714/01236006.pdf?tp=&arnumber=1236006&isnumber=27714>
- Gitomer, J.H. (1998) "Customer Satisfaction Is Worthless Customer Loyalty Is Priceless".
- Hassan, M., Selim (2003). "An empirical investigation of student acceptance of course Websites .
- Hussey, J & Hussey, R (1997). "Business research: a practical guide for undergraduate and postgraduate students".
- Hyosun, K , Laku, C (2002). "A Test of the Technology Acceptance Model the Case of Cellular Telephone Adoption" Retrieved 2008 from <http://csdl2.computer.org/comp/proceedings/hicss/2000/0493/01/04931023.pdf>
- Jagboro, K.O. (2003). "study of Internet usage in Nigerian universities: A case study of Obafemi Awolowo University, Ile-Ife, Nigeria". Retrieve 2008 from http://www.firstmonday.org/ISSUES/issue8_2/jagboro/#j1

- John, B. (2005). "Telecommunications policy research conference". Retrieve 2008 from http://www.pewinternet.org/pdfs/pip_broadband.tprc_sept05.pdf
- Julia, B. (2007). "The information needs of elderly, disabled elderly people, and their carers ". Retrieve 2008 from http://freespace.virgin.net/julie.barrett/WebPart5/WebPart5.htm#_Toc483215777
- Karami, M. (2006). "Factors Influencing Adoption of Online Ticketing" Retrieve 2008 from <http://epubl.ltu.se/1653-0187/2006/45/LTU-PB-EX-0645-SE.pdf>
- Keith, O. (2006). "The effect of collective efficacy on teachers technology". acceptance Retrieve 2008 from http://library2.usask.ca/theses/available/etd-04032006-172318/unrestricted/keith_owre.pdf
- Khalifa, M., V. Liu (2005) Determinants of Satisfaction at Different Adoption Stages of Internet-based Services. Retrieve 2008 from <http://ieeexplore.ieee.org.eserv.uum.edu.my /iel5/9518/30166/01385579.pdf?tp=&arnumber=1385579&isnumber=30166>
- Krejcie, R. V. (1970). "Determining sample size for research activities". Retrieve 2008 from <http://www.usd.edu/~mbaron/edad810/Krejcie.pdf>
- Kripanont, N. (2007). "Examining a Technology Acceptance Model of Internet Usage by Academics within Thai Business Schools". Retrieve 2008 from <http://wallaby.vu.edu.au /adt-VVUT/uploads/approved/adt-VVUT20070911.152902/public/01front.pdf>
- Leonard, K. (2004). "The Internet rules of engagement: then and now". Retrieve 2008 from <http://www.cs.ucla.edu/~lk/PS/paper224.pdf>

- Limayem, M., Khalifa, M., & A.Frini(2000) "What Makes Consumers buy from Internet? Retrieve 2008 from <http://ieeexplore.ieee.org.eserv.uum.edu.my/iel5/3468/18525/00852436.pdf?tp=&arnumber=852436&isnumber=18525>
- Maguire, G. Q. (2001). "2G1330 Mobile and Wireless Network Architectures". Retrive from <http://www.imit.kth.se/courses/2G1330/Lectures-2003/P4-2003.pdf>
- Mario, C., Jean, P. H. & Imad, A. (2004). "Hands-on exercises: IEEE 802.11b Standard". Retrieve 2008 from <http://icapeople.epfl.ch/iaad/teaching/HoE/HoE.pdf>
- Maroki, N (2002). "The impact of the Internet on the educational systems in the new millennium". Retrieve from http://findarticles.com/p/articles/mi_qa3673/is_200%20110/ai_n9003116
- Money, W. (2004). "Application of the technology acceptance model to a knowledge management system". Retrieve 2008 from <http://csdl2.computer.org/comp/proceedings/hicss/2004/2056/08/205680237b.pdf>
- Morris, M., Dillon, A. (1997). From "Can They?" to "Will They?" Extending Usability to Accommodate Acceptance Predictions. Retrieve 2008 from <http://www.ischool.utexas.edu/~adillon/ConferenceProceedings/AIS98%20paper/AIS98%20paper.htm>
- Morteza, A. (2007). "Predicting Important Factors of Customer Behaviour on Online Shopping in Iran". Retrieve 2008 from <http://epubl.ltu.se/1653-0187/2007/004/LTU-PB-EX-07004-SE.pdf>

- Moschis, G., Curasi, C. & Bellenger, D. (2003). "Housing preferences of older consumers" Retrieve 2008 from http://www.prres.net/Papers/Moschis_Housing_Preferen ces_Of_Older_Consumers.pdf
- National Research Council (1999). "Funding a Revolution: Government Support for Computing Research". Retrieve 2008 from <http://www.nap.edu/readingroom/books/far/ch1.html>
- Nurul, J. (2007). "Relational contract in construction industry in Malaysia" Retrieve 2008 from <http://www.efka.utm.my/thesis/IMAGES/4MASTER/2007/2JSB-P2/nurulalifahma061063d07http.pdf>
- Pather, S., Remenyi, D. & Erwin, G.J. (2003). "e-Commerce Success: The Quest for IS Effectiveness Measurement: A Conceptual Framework for the e-Commerce environment". Retrieve 2008 from http://search.sabinet.co.za/images/ejour/comp/comp_n32_a5.pdf
- Patterson, P.G., Spreng, R.A. (1997) "Modeling the relationship between perceived value, satisfaction and repurchase intentions in a business-to-business, services context: an empirical examination"; International Journal of Service Industry Management.
- Pavlou, P.A. (2001), "Consumer Intentions to adopt Electronic Commerce Incorporating Trust and Risk in the Technology Acceptance Model".
- Pew Internet, American Life Project (2006) Retrieve 2008 from http://www.pewintern et.org/PPF/r/184/report_display.asp
- Pitt, L.F., Watson, R.T & Kavan, C.B. (1995). "Service quality: A measure of information systems effectiveness."
- Rana, M. (2006). Customer Satisfaction Service Quality in Online Purchasing in Iran. Retrieve 2008 from <http://epubl.ltu.se/1653-0187/2006/58/LTU-PB-EX-0658-SE.pdf>

- Raveendranathan, P. (2003). "Identifying Sets of Related Words from the World Wide Web" Retrieve 2008 from http://www.d.umn.edu/~rave0029/research/thesis_proposal_final.pdf
- Razvan, B. (2006). "VoIP over Wireless LAN Survey". Retrieve 2008 from http://www.jaist.ac.jp/~razvan/publications/voip_survey_final.pdf
- Roshdan b. Idrus (2006) . Teachers acceptance of wireless internet technology: a descriptive study in perlis Universiti Utara Malaysia
- Samuel,O. 2008. "Demographic & Psychological Factors Predicting Organizational Commitment among Industrial Workers" retrieves 2008 from <http://www.krepublishers.com/02-Journals/T-Anth/Anth-10-0-000-08-Web/Anth-10-1-000-08-Abst-PDF/Anth-10-1-031-08-418-Salami-S-O/Anth-10-1-031-08-418-Salami-S-O-Tt.pdf>
- Saunders, M., Lewis, P., Thornhill, A., (2003.) "Research Methods for Business Students".second edition, UK, Finance Times,
- Sekaran (2003). "Research methods for business: a skill-building approach" Retrieve 2008 from <http://bcs.wiley.com/he-bcs/Books?action=contents&itemId=0471203661&bcsId=1671>
- Setayesh, S.(2007). "Application of Disconfirmation Theory on Customer Satisfaction Determination Model in Mobile Telecommunication Case of prepaid mobiles in Iran". Retrieve 2008 from <http://epubl.ltu.se/1653-0187/2007/051/LTU-PB-EX-07051-SE.pdf>
- Slingshot Communications, Inc.(2005). "The Prepaid Internet Industry". Retrieve 2008 From http://www.slingshot.com/downloads/prepaid_internet_wp.pdf
- Smith, V. (2002). "Method in Experiment: Rhetoric and Reality". Experimental Economics, 5:91–110 (2002) Economic Science Association Retrieve 2008 from

Business http://home.cerge-ei.cz/ortmann/trentocourse/smith_method_in_experiment_ee_2002.pdf

Sylnovie, M. (2007). "Exploring the Influence of Cultural Values on the Acceptance of Information Technology: An Application of the Technology Acceptance Model, Retrieve 2008 from <http://proceedings.informingscience.org/InSITE2007/IISITv4p431-443Merch303.pdf>

Taylor, D. (2006). "The literature review: a few tips on conducting it". Retrieve 2008 from <http://www.utoronto.ca/writing/pdf/litrev.pdf>

Taylor, S. and. Todd, P.A. (1995) 'Understanding information technology usage: A test of competing models'. Retrieve 2008 from http://ebiz.bm.nsysu.edu.tw/seminar/po_m/phd/UTAUT-Intranet/TPB-Taylor%20&%20Todd-1995b.pdf

Thompson, R.L, Higgins, C.A & Howell, J.M 1991, 'Personal computing: toward a conceptual model of utilization', *MIS Quarterly*, vol. 15, no. 1, pp. 124-143.

Ureigho, R., Oroke G. & Ekruyota, G.O. (2006). "The Impact of Internet Usage: A case study of Delta State (Nigeria) tertiary institutions". Retrieve 2008 from <http://www.deltastate.gov.ng/Ureigho%20et%20al.pdf>

Vincent, G. (1990). "public information campaigns an application of the theory of reasoned action". Retrieve 2008 from <http://www.udel.edu/communication/web/thesisfiles/gambalthesis.pdf>

Yap, S. F., Kew M (2005) service quality and customer satisfaction: antecedents of customer's re-patronage intentions. Retrieve 2008 from http://www.sunway.edu.my/others/vol4/service_quality.pdf