



## **Modeling the Acceptance of Next Generation ICTs: A Critical Approach**

Bhavik U. Swadia

S.M.Patel Institute of Commerce

Ahmedabad



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**Abstract**

This PhD research will attempt to model how emerging ICTs may be accepted by the new consumer in today's social settings. This paper focuses on assessing specific models identified in the literature that could be used to analyse potential consumer behaviour in relation to the adoption or acceptance of emerging ICTs.

The consumer decision models and theories developed in the 1960s are still being used to structure research in the field of consumer behaviour. This is despite decision-making today being a more complex phenomenon due to factors such as the digital media revolution and globalisation. Moreover, previous research efforts have concentrated on assessing user acceptance of particular pre-existing technologies rather than investigating the adoption and acceptance process of emerging ICTs. It would seem imperative that marketers embrace the new consumer and gain a deeper insight into the psychological traits and cognitive behavioural antecedents that drive the uptake of emerging Information and Communication Technologies (ICTs).

From a theoretical perspective, the study highlights the need for marketing academics to consider more fully the importance of understanding the adoption and acceptance process of next generation ICTs in the current environment. Moreover, the research will seek to make a necessary and timely empirical contribution by examining the current academic research and practice relating to the adoption of ICTs outside the work environment which has been identified as a key area that must be addressed.

The research will also seek to make a practical contribution by deriving the relevant implications for marketing managers.

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### Introduction

As a result of seismic change in the macro environment, a 'new' consumer and a 'new' marketplace is emerging (Assael, 2004). Companies are confronted with a consumer that has variously been described as 'active' (Hawkins et al., 2004), 'knowledgeable' (Lawson, 2000) and 'post-modern' (Assael, 2004). This new consumer would seem to inhabit an interactive marketplace characterised by high levels of heterogeneity, and be IT-enabled (Baker, 2003).

New ICTs are constantly emerging, altering the relationship an organisation establishes with its customers (Lindroos and Pinkhasov, 2003). Therefore, it is essential to analyse the impact of these technologies on consumer behaviour, particularly in today's dynamic environment (Schewe and Meredith, 2004).. Bruneau and Lacroix (2001) define ICT as all activities which contribute to the display, processing, storing and transmission of information through electronic means. There is a belief amongst researchers, involved with emerging ICTs, that in order to increase adoption potential, next generation products and services must exhibit enhanced attributes such as ubiquity, personalisation, mobility, context awareness and security (Doolin et al., 2008; Mahon et al, 2006). It would seem evident that emerging ICTs may exhibit one or more of these attributes thereby providing an interesting focus for consumer behaviour research.

The seminal work of many theorists has led to a burgeoning amount of literature in the area of adoption and diffusion of new ICTs. However, it is evident from the literature that previous research efforts have focused on particular pre-existing technologies or products (see Appendix A, table 1) at a post-development stage ) and little focus has been placed on researching the behavioural antecedents that drive the modern consumer towards accepting new or emerging ICTs. Moreover, much of this activity to date has focused upon conducting investigations from an organisational and employee perspective. In addition, many of these studies have been based on consumer decision-models developed in the 1960s and 1970s despite the evolving nature of consumer decision-making in response to the changing decision environment.



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**Overview of literature on consumer decision-making models and applicable models relating to the acceptance of ICTs**

Consumer behaviour is defined as the dynamic interaction of affect and cognition behaviour and the environment in which human beings conduct the exchange aspects of their lives (Peter and Olson, 2005). Consumer decision-making is defined as “the behaviour patterns of consumers that precede, determine and follow on the decision process for the acquisition of need satisfying products, ideas or services” (Du Plessis et al. 1991:11). The marketing literature has suggested different methods of understanding this decision-making process (Plummer, 1974; Lawson, 2000; Kim et al., 2002; Hawkins et al., 2005). Lye et al. (2005) argue that the foundations of current consumer decision theory were laid in the 1960s with Howard’s consumer decision-model developed in 1963 (Du Plessis et al., 1991), the Nico-sia-model (1966), Engel, Kollat & Blackwell’s model (1968) and the Howard and Sheth model (1969) (Hunt and Pappas, 1972; Howard and Sheth, 1968). Other significant consumer decision-making models include Andreason (1965), Robinson (1971), Hansen (1972) and Markin-models (1968/1974) (Erasmus et al., 2001).

Consumer decision-making models are widely used to structure theory and research (Erasmus et al., 2001). These models are described by Erasmus et al. as offering the possibility to grasp visually what happens as variables and circumstances change and they provide conceptual frames of reference that logically indicate the interrelationship of variables for research purposes. Consumer decision-making models also provide the possibility to understand different consumer decision processes and marketing strategies and therefore form an important part in the establishment of marketing theory (Engel et al., 1995; Walters, 1978). Engel, Blackwell and Minard’s model (1990), for example, provides a comprehensive illustration of the variables influencing consumers and an appreciation of the dynamic nature of the consumer decision process (Lawson, 2000).

Research into the acceptance of ICT has produced a number of competing models, each with a different set of determinants of acceptance (Davis, 2003). There has been a number of research themes, each tackling the problem from a different perspective (Venkatesh et al., 2003). For example, one theme uses intention or usage as a dependent variable to determine user acceptance (Compeau and Higgins 1995; Davis et al. 1989), while other themes have focused on organisation-level implementation or assimilation success (Leonard-Barton and Deschamps, 1988; Brady, 2003) or the relationship of task to technology (Goodhue 1995; Goodhue and Thompson 1995). Erasmus et al. (2001) accentuate that using models to understand consumer decision-making behaviour not only has to focus on what products do but also has to consider what the



products mean to the consumer.

Roger's work on the diffusion of innovations (1959, 1962) has been noted by many as having a profound effect on research into consumer behaviour and marketing (Fichman, 1992; Lawson, 2000; Baskerville et al., 2007). Roger's conceptual model has been frequently used to analyse potential consumer behaviour relating to the introduction of new ICTs. This model has led to a number of varied research foci for innovation diffusion. Rogers differentiates the adoption process from the diffusion process in that the diffusion process occurs within society, as a group process; whereas, the adoption process pertains to an individual. His characterisation of the adoption process has had a significant impact on the development of consumer research and has been the groundwork for many models of consumer decision-making (Fichman, 1992; Lawson, 2000).

Other acknowledged models include the Theory of Reasoned Action (TRA), proposed by Fishbein and Ajzen (1975), which represents a comprehensive theory of the interrelationship among attitudes, intentions and behaviour (Howard, 1989), the Theory of Planned Behaviour (TPB) (Ajzen, 1985), an extension from the Theory of Reasoned Action which includes an additional concept, a perceived behavioral control (Schifter and Ajzen, 1985) and the Theory of Trying to Consume (Bagozzi and Warshaw, 1990), which recasts the TRA by replacing behaviour with trying to behave as the variable to be explained or predicted.

Another important contribution is the Technology Acceptance Model (TAM) (Davis, 1989) which focuses on explaining attitudes impacting on decisions to use specific technologies (Shih and Fang, 2004). Key difference between the TAM and TRA is that the TAM replaces the attitude measures included in the TRA with two technology acceptance measures, i.e. 'ease of use', and 'usefulness' (Bagozzi et al., 1992; Davis et al., 1989). TAM2 builds on the TAM designed to explain perceived usefulness and usage intentions in terms of social influence and cognitive instrumental processes (Venkatesh and Davis, 2000).

Venkatesh et al. (2003), in an attempt to integrate the main competing user acceptance models, formulated the Unified Theory of the Acceptance and Usage of Technology (UTAUT). This model aims to explain a user's intention to use an information system and to define the user's subsequent usage behaviour. Nysveen et al. (2005) argue that this model, in particular, seems to be more suited to predicting and understanding consumer behaviour in relation to new technology developments. Venkatesh et al. (2003:426) posit that UTAUT provides a useful tool for managers needing to assess the likelihood of success for new technology introductions and helps them understand the drivers of acceptance. However, they argue that a



deeper understanding of the dynamic behavioural influences is needed and future research should focus on identifying constructs that can add to “the prediction of intention and behavior *over and above* what is already known and understood”.

However, these decision-making models are not without their critics. Rau and Samiee (1981) argue that many of these models have never been tested as a whole in their original form because they lack specificity and thus are difficult, if not impossible, to operationalise. Despite increasing purchase complexity since the majority of these models have been developed, many have remained as the basis for current marketing research and marketing education (Sheth and Krishnan, 2005). The evolving nature of consumer decision-making in response to the changing decision environment makes it increasingly more difficult to “fit” current decision reality to these models (Erasmus et al., 2001). Lawson (2000) argues that an important challenge for marketers will be to account for major forces, such as technology and globalisation, in the decision-making process.

Differences between models lie primarily in their emphasis on particular variables and the manner of presentation (Erasmus et al., 2001; Kollat et al., 1970). The Engel et al. model, for example, has been criticised for being difficult to use when formulating strategy due to its vagueness when explaining the role of some of the variables it uses (Howard, 1989). Zajonc and Markus (1982) emphasised the role of affective, as opposed to cognitive factors, when forming consumer preferences. Findings from their research indicated the importance of repeated exposure when forming preferences which reiterated Krugman’s findings in 1965. Krugman posited that an alternative model of consumer behavior takes place when the consumer is not involved in the message (Swinyard and Coney, 1978). Holbrook and Hirschman (1982) emphasised the importance of pleasure and emotional factors in the decision process rather than analytical and logical problem solving.

Du Plessis et al. (1991) argue that although consumer behaviour has grown considerably since the 1960s, the popularity of model building has decreased since 1978 possibly due to these models being accepted as flawless. Therefore, continued research would seem necessary to address concerns noted in the literature regarding the applicability of consumer behaviour models and to gain an improved understanding of the consumer decision-making process in today’s marketplace.

## Methodology





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Among the methodologies considered for this study, the survey research methodology (which is a positivistic perspective), was considered most appropriate for this research. It is concerned with drawing a sample of subjects from a population and studying this in order to make inferences about the population (Hussey and Hussey, 1997). Objectivists believe they are “independent of and neither affects nor is affected by the subject of the research” (Remenyi et al., 1998:33).

The research methodology will follow a three-phased approach. The first phase of this research involves an in-depth analysis of the relevant literature.

In order to be able to generalise about regularities in human and social behaviour it is necessary to select samples of sufficient size (Remenyi et al., 1998). The aim of generalisations is to lead to prediction, explanation and understanding (Easterby-Smith et al., 1991; Creswell, 1994).

Phase two of the research will involve the researcher conducting an empirical study with a selected sample of consumers to gather relevant data to test the hypotheses, using the chosen emerging technology. Example emerging technologies identified include Radio Frequency Identification (RFID) (Ferguson, 2002; Angeles, 2005) pervasive communications services<sup>1</sup> (Vrechopoulos et al., 2003; European Commission, 2005; Doolin et. al., 2008) and neuromarketing (Lee et. al., 2006).

Data gathered from questionnaire surveys will enable the researcher to use a hypothetico-deductive methodology. This will involve the researcher arriving at conclusions by interpreting the meaning of the results of the data analysis.

The final phase of the research, therefore, will involve the researcher reflecting, concluding and making recommendations from the findings.

### Conclusion

It has become apparent that emerging ICTs are potentially going to change the way consumers accept and adopt new technologies thereby affecting their buying behaviour. While explaining user behaviour and acceptance of new technology is often described as one of the most mature research areas in the contemporary information systems literature (Hu et al., 1999, Venkatesh et al., 2003), little focus has been

<sup>1</sup> At a simplistic level the term ‘pervasive service’ refers to the provision of mobile services to multiple users on multiple devices using enhanced technical techniques to make the underlying technology transparent to the users (European Commission, 2005).



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placed on researching the behavioural antecedents that drive the modern consumer towards accepting new or emerging ICTs. This research gap has led to a void in marketers' ability to understand and predict the behaviour of the new consumer.

It is the purpose of this body of research to determine if a model can be applied to allow marketers and product or service developers to determine the features, characteristics or attributes of next generation ICTs that are likely to be adopted by consumers. This research should provide a new, more inclusive, contemporary model that will help analysis and predict consumer behaviour, therefore making a necessary and timely empirical contribution to the current literature.



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### References

- Ainsworth, M.D.S., Blehar, M.C., Waters, E., Wall, S. (1978) *Patterns of attachment: A psychological study of the strange situation*. New Jersey: Lawrence Erlbaum Assoc. Inc.
- Ajzen I. (1985), From intention to actions: a theory of planned behaviour. In *Action-Control: From Cognition to Behaviour* (Kuh] J. & Beckham J. eds), Springer, Heidelberg, pp. 11-39.
- Ajzen, I. (1991), The theory of planned behaviour, *Organizational Behaviour and Human Decision Processes*, Vol. 50, pp. 179-211.
- Ajzen, I. and Fishbein, M. (1980), *Understanding attitudes and predicting social behavior*. London: Prentice Hall, pp 21.
- Ajzen, I., & Madden, T. J. (1986), Prediction of goal-directed behaviour: Attitudes, intentions, and perceived behavioural control, *Journal of Experimental Social Psychology*
- Arnett, J.J. (2000), 'Emerging adulthood: A theory of development from the late teens through the twenties', *American Psychologist*, Vol. 55, No.5, pp. 469-480.
- Assael, H. (2004), *Consumer Behaviour, A Strategic Approach*, Houghton Mifflin Company, New York, pp.11- 25.
- Assael, H. (1992) *Consumer Behaviour and Marketing Action*, 4th Ed, Boston, MA: PWS- Kent, pp.26-45.
- Bagozzi, R. P. and Warshaw, P.R. (1990), Trying to Consumer, *Journal of Consumer Research*, 17, pp. 127-140.
- Bagozzi, R. P., Davis, F. D., & Warshaw, P. R. (1992), Development and test of a theory of technological learning and usage. *Human Relations*, 45(7), 660-686.
- Baker, S. (2003), *New Consumer Marketing, Managing a Living Demand System*, Wiley and Sons, England, pp. 10-18
- Bakewell C. and Mitchell, V.W. (2003), 'Generation Y female consumer decision- making styles', *International Journal of Retail and Distribution Management*, Vol. 13, No. 2, pp. 95-106.
- Bandura, A. (1986), *Social Foundations of Thought and Action: A Social Cognitive Theory*, Prentice-Hall,



VIDHYAYANA

**An International Multidisciplinary Research e-Journal**

ISSN 2454-8596

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Englewood Cliff, New Jersey.

Baskerville et al. (2007), The enduring contradictions of new software development approaches: a response to 'Persistent Problems and Practices in ISD' *Information Systems Journal* 17 (3), 241–245.

Benbasat, I. and Barki, H, "Quo Vadis TAM" *Journal of the Association for Information Systems*, April 2007, Volume 8, Issue 4, Article 4, pp 211-218.

Brady, M. (2003), Managing information technology assimilation: a marketing perspective, *Irish Journal of Management*, 2003, pp 125-138.

Compeau, D. R., and Higgins, C. A. (1995), Computer Self-Efficacy: Development of a Measure and Initial Test, *MIS Quarterly* (19:2), 1995, pp. 189-211.

Davis, F. D. (1993), User Acceptance of Information Technology: System Characteristics, User Perceptions and Behavioral Impacts, *International Journal of Man-Machine Studies*, 38(3), 475-487.

Davis, F. D. (1989), Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319-340.

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989), User acceptance of computer technology: A comparison of two theoretical models. *Management Science*, 35, 982-1003.

Davis, F. (2003), User acceptance of information technology: toward a unified view, *MIS Quarterly*, 9/1/2003.

Doolin, K., Mullins, R., Abad, R.M., Moreno, M.G., Mota, T., Farshchian, B.A., Gómez, M. (2008), "Supporting ubiquitous IMS-based teleconferencing through discovery and composition of IMS and web components" *Journal of Network and Systems Management (JNSM, Springer)*, Special Issue on Management of the IP Multimedia Subsystem, March.

Dubois, B. (2000), *Understanding the Consumer, A European Perspective*, Prentice Hall, UK, pp.340.

Du Plessis, P.J., Rousseau, G.G., Blem, N.H. (1991) *Consumer Behaviour, A South African perspective*, Pretoria, Sigma.

Engel, J. F., Blackwell, R.D. and Miniard, P.W. (1993), *Consumer Behaviour*, Dryden Press, Fort Worth,



VIDHYAYANA

ISSN 2454-8596

www.vidhyayanaejournal.org

## An International Multidisciplinary Research e-Journal

TX, P.79.

Erasmus et al. (2001), Consumer decision-making models within the discipline of consumer science, *Journal of Family Ecology and Consumer Sciences*, Vol 29.

Fannin, R. (1984), "Marketing to teens: all talk and no action", *Marketing and Media Decisions*, Vol. 19, No.9, pp.42-47.

Farley, J.U., Ring, L.W. (1970), "An empirical test of the Howard-Sheth model of buyer behaviour", *Journal of Marketing Research*, Vol. 7 No. November, pp. 427-38.

Fichman, R. (1992), *Information Technology Diffusion: A Review of Empirical Research*, MIT Sloan School of Management, Cambridge, MA.

Fishbein, M. (1967) *Readings in Attitude Theory and Measurement*, NY: Wiley.

Fishbein, M., I., Ajzen (1975), *Belief, Attitude, Intention and Behaviour: An Introduction to Theory and Research*. Addison-Wesley, Reading, MA.

Foxall, G.R. (1990), *Consumer Psychology in Behavioural Perspective*, London: Routledge.

Goodhue, D. L. (1995), Understanding User Evaluations of Information Systems, *Management Science* (41:12), pp. 1827-1844.

Goodhue, D. L., and Thompson, R. L. (1995), Task Technology Fit and Individual Performance, *MIS Quarterly* (19:2), pp. 213-236.

Hawkins, D. I., Best, R. J. and Coney, K. A (2005), *Consumer Behaviour, Building Marketing Strategy*, McGraw-Hill, New York.

Herbig, P., Koehler, W. and Day, K. (1993), 'Marketing to the baby bust generation', *Journal of Consumer Marketing*, Vol. 10, No.1, pp.4-9.

Holbrook, M. and Hirschman, E. (1982), The Experiential Aspects of Consumption: Consumer Fantasies, Feelings, and Fun, *The Journal of Consumer Research*, Vol. 9, September, pp.132.

Holbrook, M. and Schlinder, R.M. (1989), 'Some exploratory findings of the development of musical tastes', *Journal of Consumer Research*, Vol. 16, No.1, pp.119-24.



VIDHYAYANA

ISSN 2454-8596

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## An International Multidisciplinary Research e-Journal

Howard, J.A. (1989). *Consumer Behavior in Marketing Strategy*. Englewood Cliffs, NJ: Prentice Hall, Inc.

Howard, J., Sheth, J.N. (1968), *Theory of Buyer Behaviour*, J. Wiley & Sons, New York, NY.

Hunt, S. and Pappas, L. (1972), A Crucial Test for the Howard-Sheth Model of Buyer Behavior, *Journal of Marketing Research*, Vol. 9, No. 3 (Aug., 1972), pp. 346-34.

Rogers, E.M. (1995), *Diffusion of Innovations*, 4th edition, The Free Press, New York.

Keillor, B. D., Parker, S.R, and Schaefer, A. (1996), 'Influences on adolescent brand preferences in the United States and Mexico', *Journal of Advertising Research*, Vol. 36, No. 3, pp. 47-56.

King, M.M. and Multon, K.D. (1996), 'The effects of television role models on the career aspirations of African-American junior high school students', *Journal of Career Development*, Vol.23, No.2, pp.111-25.

Lawson R. (2000), "Consumer Behaviour", In *Marketing Theory*, (Ed.)

Baker, Michael J. (Kent), Business Press, Thomson Learning. pp.133–147.

Leonard-Barton, D., and Deschamps, I. (1988), *Managerial Influence in the Implementation of New Technology*, *Management Science* (34:10), pp. 1252-1265.

Lindroos, P. and Pinkhasov, M. (2003), 'Information society: The ICT challenge', *Organisation for Economic Cooperation and Development, The OECD Observer*, Iss. 240/241, pp. 27.

Loudon, D.L. and Della Bitta, A.J (1993), *Consumer Behaviour: Concepts and Applications*, New York: McGrath Hill.

Lye, A., Shao, W., Rundle-Thiele, S., Fausnaugh, C. (2005), Decision waves: consumer decisions in today's complex world, *European Journal of Marketing*, Vol. 39, Issue 1/2, pp. 216 – 230

Mahon, F., Mitic, J., Crotty, M., Doolin, K., Kuhmuench, C. (2006), "Pervasive Service Platform (PSP): Facilitating Pervasive Services", ICNS 06 (NGNUS 2006: Next Generation Networks and Ubiquitous Services) / IEEE Sponsored International Conference on Networking and Services, Silicon Valley, USA,

July Nysveen, H., Pedersen, P.E., Thorbjørnsen, H. (2005), Explaining intention to use mobile chat services: moderating effects of gender, *Journal of Consumer Marketing*, Vol. 22, No. 5, pp 247-256.



VIDHYAYANA

ISSN 2454-8596

www.vidhyayanaejournal.org

## An International Multidisciplinary Research e-Journal

Peter, J.P. and Olson, J. C. (2005), *Consumer Behaviour and Marketing Strategy*, 7th Edition, McGraw-Hill, New York, pp. 20-35.

Rau, P., Samiee, S. (1981), "Models of consumer behavior: the state-of-the-art", *Journal of the Academy of Marketing Science*, Vol. 9 No.3, pp.300-16.

Rosenberg, M.J. and Hovland, C.I. (1960) Cognitive, affective and behavioral components of attitudes, in Hovland, C.I. and Rosenberg, M.J., *Attitude organization and change* (pp.1-14),

New Haven, CT: Yale University Press, in Pratkanis, A.R., Breckler, S.J. and Greenwald,

A.G. (Eds.), *Attitude Structure and Function*, Hillsdale New Jersey, Lawrence Erlbaum Associates

Publishers Schewe, C. D. and Meredith, G. (2004), 'Segmenting global markets by generational cohorts: Determining motivations by age', *Journal of Consumer Behaviour*, Vol.4, 1, pp.51- 63.

Schifter, D. E., & Ajzen, I. (1985). Intention, perceived control, and weight loss: An application of the theory of planned behavior. *Journal of Personality & Social Psychology*, 49(3), 843-851.

Schiffman, L. G. and Kanuk, L.L. (2000), *Consumer Behaviour*, 7th edition, Prentice- Hall, New Jersey, pp.106.

Schiffman, L. G. and Kanuk, L.L. (2005), *Consumer Behaviour*, International edition, Prentice-Hall, New Jersey.

Sheth, J.N., Krishnan, B.C. (2005), "Consumer behaviour", in Hoffman, K.D., Czinkota, M.R., Dickson, P.R., Dunne, P., Griffin, A., Hutt, M.D., Krishnan, B.C., Lusch, R.F., Ronkainen, I.A., Rosenbloom, B., Sheth, J.N., Shimp, T.A., Sigauw, J.A., Simpson, P.M.,

Shih, Y. and Fang, K. (2004), The use of a decomposed theory of planned behaviour to study internet banking in Taiwan, *Internet Research*, Vol. 14, No. 3, pp. 213-223.

Spero, I. and Stone, M. (2004), Agents of change: how young consumers are changing the world of marketing, *Qualitative Market Research: An International Journal*, Vol.7, No.2, pp.153-159.

Swinyard, K. and Coney A.(1978), *Promotional Effects on a High-versus Low-Involvement Electorate*, The



VIDHYAYANA

## An International Multidisciplinary Research e-Journal

ISSN 2454-8596

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Journal of Consumer Research, Vol. 5, No. 1, pp. 41-48.

Tapscott, D. (1998), *Growing Up Digital*, 1st edition, McGraw-Hill, New York, pp. 16-40.

Taylor, S. and Todd, P.A. (2001), *Understanding Information Technology Usage: A Test of Competing Models*, *Information Systems Research* (6:2), 2001, pp 144-176.

Thompson, K., and Panayiotopolous, P. (1999), *predicting behavioural intention in a small business context*, *Journal of Marketing Practice: Applied Marketing Science* Vol. 5 No. 3, pp. 89-96

Venkatesh, V., Morris, M.G., Davis, G.B.; Davis, F.D. (2003), *User acceptance of information technology: Toward a unified view*, *MIS Quarterly*, 27, 3, 425-478. Waters,

C.G. (1978), *Consumer Behaviour, Theory and Practice*, Ontario, Irwin. Waters, C.G. (1978), *Consumer Behaviour, Theory and Practice*, Ontario, Irwin.



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## Appendix A

**Table 1: Examples of Studies of using TAM and TRA (adapted from Lu et al. (2003), p209-211 (marked with \*) and Legris et al. (2003) p194, (marked with \*\*))**

References	TAM Applied to ...	Methodology for testing the TAM	Discussion / Conclusions
Su-Houn Liu et al. (2005)	User acceptance of eLearning Technology	Surveyed 121 students by providing an eLearning course, followed by a questionnaire (which was completed twice by each student taking the course, once at the beginning of the course, and once at the end).	Main conclusion was that media richness increased levels of perceived usefulness.
Lu et al. (2003)	Usage of Wireless Internet	Model not tested in this paper. However, Lu et al. have produced a comprehensive list of previous TAM tests.	Not applicable. The conclusion was a newly developed version of the model, which needs to be properly tested.



Gao (2005)	User acceptance of web-based course companion systems	56 surveys were completed by University students, average age 21.	Finding revealed that TAM can serve the purpose of evaluating competing products and predicting system acceptability.
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Legris et.	Why people use	This paper provides a	Main conclusion was that the
al. (2003)	information technology	synopsis of the TAM, and the various empirical studies it was subjected to (as listed later in this table)	TAM can be used to predict IT usage, but interestingly the study noted the following TAM limitations:  <ol style="list-style-type: none"><li data-bbox="1118 745 1513 920">1. Usage of students in case studies. Recommendation is to involve working/business users in more studies.</li><li data-bbox="1118 931 1513 1182">2. Most studies examined the introduction of office automation software. Recommendation is to study introduction of business process applications</li><li data-bbox="1118 1193 1513 1729">3. TAM actually measures the variance in “self- reported use” rather than system recorded usage. This can often provide a skewed result. (e.g., Legris cites a study conducted in a public toilet. Observers recorded that 67% of people washed their hands, whereas 95% of the people studied indicated that they washed their hands.</li></ol>



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Yu et al. (2005)	Interactive television / commerce (t-commerce)	947 experienced and 115 inexperienced users of the technology under examination. Questionnaires surveys were used.	TAM was successfully applied in the context of tCommerce. The study was limited to potential users, and would have more value if applied when the technology was commercially deployed.
Vijayasarat hy, (2004)	Consumer intentions to use online shopping	800 people were sent questionnaires as part of a study in the US regarding consumer perceptions of internet shopping. 281 usable responses were received.	The TAM was successfully applied to demonstrate intentions to shop online, however, the researchers indicated a number of limitations due to the nature of the questionnaire research (by regular mail).
Dadayan and Ferro (2005)	Comparison of private and public sector technology acceptance.	Study not completed – reference to be removed.	An adapted TAM is developed in this paper, however empirical testing was not carried out, and so the results are inconclusive.



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Roca et al. (2006)	eLearning continuance intention	172 usable questionnaire responses (online survey).	The TAM was extended with additional constructs: information quality, service quality and system quality. Results showed that perceived usefulness and information quality were the strongest influences on user's intention to continue using the service.
Horton et al. (2001)	*Application of TAM in explaining intranet usage	466 employees from two UK companies 	Findings revealed TAM was more suitable for modelling intranets in organisations with constrained information requirements and a structured work organisation. Perceived usefulness, perceived ease of use and intention to use were implicated as being predictive of intranet use.



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Chau and Hu (2001)	*, ** Compare TAM, TPB, and a decomposed TPB model in relation to telemedicine software	400 physicians in hospitals in Hong Kong	TAM and TPB have limitations in explaining technology acceptance by individual professionals. Instruments tested with business users may not be equally valid for medical professionals.
Venkatesh and Morris (2000)	** TAM with subjective norms, gender and experience, in relation to date and information retrieval	342 workers  VIDHYAYANA	Men's technology use was more strongly influenced by their perceptions of usefulness.  Women were more strongly influenced by perceptions of ease of use and subjective norms, although the effect of subjective norms diminished over time.





Venkatesh and Davis (2000)	* Develops and tests the TAM2 model to explain perceived usefulness and usage intentions in terms of social influence and cognitive instrumental processes	156 employees, in four systems in four organisations.	User acceptance can be seen to be influenced by social influence processes, and cognitive instrumental processes.
Venkatesh (2000)	* Presents and tests an anchoring and adjustment-based theoretical model of the determinants of system-specific perceived ease of use	246 employees, using three measurements taken over a three month period	The anchors (computer self-efficacy, perceptions of external control, computer anxiety, computer playfulness) and adjustments (perceived enjoyment, objective usability) are determinants of system-specific perceived ease of use.
Jiang et al (2000)	* Utilisation of the Internet, using a modified TAM	335 Students from US, Hong Kong and France	Utilisation of the internet was positively related to perceived near and long-term usefulness, prior experience and facilitating conditions.




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Dishaw and Strong (1999)	** TAM and task-technology fit, in relation to software maintenance tools	60 maintenance projects in three Fortune50 firms, no indications of the number of subjects.	Findings suggest that an integration of TAM with Task-technology Fit constructs leads to a better understanding about IT acceptance.
Straub et al (1999)	** Adaptation of TAM plus subjective norms, in relation to Microsoft Windows 3.1	77 potential adopters, 153 users in a corporation 	Pre-adoption attitude is based on perception of usefulness, ease of use, demonstrability, visibility and trialability.  Post-adoption attitude is only based on instrumental beliefs of usefulness and perceptions of image enhancements.
Lucas and Spitler (1999)	** Testing TAM with social norms and perceived system quality, in relation to multifunctional workstations	54 brokers, 81 sales assistants in a financial company	Variables in the organisation such as social norms and the nature of the job are more important in predicting use of technology than are users' perceptions of the technology.



<p>Hu et al. (1999)</p>	<p>*, ** Applicability of TAM in explaining physicians decisions to accept telemedicine technology</p>	<p>421 physicians from Hong Kong hospitals</p>	<p>Findings highlighted a need to incorporate additional factors or integrating other IT acceptance models to improve TAMs specificity and explanatory utility.</p>
<p>Al-gahtani and King (1999)</p>	<p>* Factors contributing to acceptance of IT</p>	<p>329 final year university students in the UK</p>	<p>TAM is valuable for predicting attitudes, satisfaction, and usage from beliefs and external variables.</p>
<p>Agarwal and Prasad (1999)</p>	<p>*, ** Examines TAM for individual differences and IT acceptance in relation to word processing, spreadsheets and graphics</p>	<p>230 users of an IT innovation</p>	<p>TAM proved quite useful, with individual level of education, prior similar experience, training and role with technology having significant on TAMs beliefs</p>





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Gefen and Keil (1998)	** TAM testing for effect of perceived developers responsiveness, in relation to configuration software	307 sales people	The conclusion of this study proposes that IS managers can influence both the perceived usefulness and perceived ease of use of an IS through constructive social exchange with the user.
Argawal and Prasad (1998)	* Proposes a new construct, Personal Innovativeness	175 business professionals in a part-time MBA programme	Personal innovativeness was tested as an additional construct, and was validated to identify early adopters of IT/IS when resources are limited
Bajaj et al. (1998)	** TAM with loop back adjustments, in relation to debugging tool	25 students	Past use influences the ease of use of use of the system and is a key factor in determining future use.
Igbaria et al. (1997)	** TAM in small firms in relation to personal computers	596 PC users	Perceived ease of use is a dominant factor in explaining perceived usefulness and system usage.




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Argawal and Prasad (1997)	* Examines the relationship between innovation characteristics, perceived voluntariness and acceptance behaviour	73 MBA students with web access	Innovation characteristics are related to adoption behaviour.
Jackson et al. (1997)	** TAM validation of perceived usefulness and ease of use instruments, in relation to spreadsheets, databases, word processors and graphics	244, 156, 292, 210 students  VIDHYAYANA	Intrinsic involvement plays a significant role in shaping perceptions. Attitude seems to play a mediating role.
Davis and Venkatesh (1996)	** TAM model of antecedents of perceived ease of use, in relation to 3 software applications	108 students	Objective usability has an impact on ease of use perception about a specific system only after direct experience with the user.




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Szajna (1996)	** Testing TAM with electronic email	61 graduate students	The experience component may be important in TAM
Chau (1996)	* Assessment of a modified TAM to include the two types of perceived usefulness (near-term, and long-term, usefulness)	285 administrative/clerical staff.	Perceived near-term usefulness had the most significant influence on behavioural intention. This study found no significant direct relationship between ease of use and behavioural intention.
Igbaria et al. (1995)	* Develop and test an integrated conceptual model for computer usage	214 MBA students 	The tested model confirms the effects of individual, organisational, and system characteristics on perceived ease of use and perceived usefulness, confirms the influence of perceived ease of use on perceived usefulness, and the effects of perceived usefulness on perceived usage and variety of use.





Keil et al. (1995)	** Test of TAM for configuration software	118 salespeople	Usefulness is more important than ease of use in determining system use.
Taylor and Todd (1995)	*, ** Test of TAM, TPB and decomposed TPB models in relation to university computing/resource centre	786 business school students	TAM, TPB and the decomposed TPB performed well in terms of fit and were roughly equivalent in terms of their ability to explain behaviour.
Subramanian (1994)	** Testing TAM predictive qualities in relation to voicemail and customer dial up systems. Verifying previous findings in relation to perceived usefulness and perceived ease of use	180 customers/subjects	Verifies previous studies and indicates that perceived usefulness, and not ease of use, is a determinant of predicted future usage.





<p>Davis (1993)</p>	<p>*, ** System characteristics, user perceptions and behavioural impacts in relation to email/text editor software</p>	<p>112 professionals and managerial employees</p>	<p>Perceived usefulness was 50% more influential than ease of use in determining usage. Design choices influence user acceptance.</p>
<p>Adams et al. (1992)</p>	<p>* To replicate Davis study on the relationship between ease of use, usefulness and system usage</p>	<p>118 respondents from 10 organisations</p>	<p>Results of Davis' study (1989) were confirmed.</p>
<p>Mathieson (1991)</p>	<p>*, ** Comparing TAM with TPB, related to spreadsheet usage.</p>	<p>163 senior and junior students</p>	<p>Both TAM and TPB predicted intention to use an information system well. TAM is easier to apply, but only provides very general information.</p>



Davis et al. (1989)	*, ** Predicting peoples computer acceptance of text editor software from a measure of their intentions, and explains intentions	107 full-time MBA students	Perceived usefulness strongly influenced intentions; perceived ease of use had a small but significant effect on intentions; attitudes only partially mediated the effects of these beliefs on intentions
Davis (1989)	* Develops and validates perceived usefulness and perceived ease of use	152 industrial users of four application programs	Both usefulness and ease of use were significantly correlated with usage.
<b>References</b>	<b>TRA Applied to ...</b>	<b>Methodology for testing the TAM</b>	<b>Discussion / Conclusions</b>
Nysveen et. al., 2005	Intention to use mobile chat services	Surveyed 684 users of mobile chat services. This was a web-based survey accessed through an advertisement. Interestingly all respondents clicked through the ad, however, only 43.6% took the survey.	Findings from this study suggest that social norms and intrinsic motives such as enjoyment are important determinants of intention to use among female users, whereas extrinsic motives such as usefulness and expressiveness are key drivers among men.



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