

# JITTA

JOURNAL OF INFORMATION TECHNOLOGY THEORY AND APPLICATION

## APPLYING TAM TO A PARALLEL SYSTEMS CONVERSION STRATEGY

**CATHERINE M. RIDINGS**, Lehigh University

Email: [ridings@lehigh.edu](mailto:ridings@lehigh.edu)

**DAVID GEFEN**, Drexel University

Email: [gefend@drexel.edu](mailto:gefend@drexel.edu)

### ABSTRACT

*According to the Technology Acceptance Model (TAM) user perceptions of usefulness and ease of use are major determinants of IT adoption. Extensive research dealing with direct cut over implementation of new IT in field settings support this assertion. In today's market, however, new IT are often deployed using a parallel systems strategy: new IT are implemented while existing IT are retained so that both IT work in parallel for some time. This study suggests and supports a model showing that user preference for using the new IT depends on user assessment of the usefulness of both the old IT and the new IT. Survey data from a large telecommunications organization that was in the process of adopting a new customer service system while continuing to run the older system in parallel, shows that the respondents' overall preference to use the new IT was, as hypothesized, affected by user perceptions of both IT: perceived usefulness of the new IT increased user preference to adopt the new IT, while perceived usefulness of the old IT decreased it. The perceived usefulness of each system was, as suggested by TAM, increased by the perception of its ease of use. Implications are discussed.*

### INTRODUCTION

Information Technology (IT), no matter how technically sound or exceedingly fast, will be of little value unless they are used. Hence,

the ongoing need to understand the antecedents of successful IT adoption. One of the most widely used models of Information Technology (IT) adoption is the Technology Acceptance Model (TAM) proposed by Davis (1989; Davis et al. 1989). TAM proposes two

major determinants of IT adoption: user assessment of the perceived usefulness (PU) of the IT, and, indirectly, user assessment of the perceived ease of use (PEOU) of the IT.

Previous TAM studies dealing with real world settings have dealt mostly with a new IT that was implemented in a direct cut over conversion strategy, occasionally combined with a pilot or with a phase-in strategy. [1] In such an implementation strategy, on a given date, the old IT is replaced by a new IT and then ceases to exist. In essence, this approach leaves users, when they are given a choice, with the decision of whether to use the new IT or not. In recent years, the increasing dependence on new IT and the risk involved in their potential failure has led to a preference for a different approach: parallel systems conversion strategy. In a parallel systems conversion strategy, new IT are implemented while the existing IT are retained and completely operational so that, in effect, both the old and the new IT work in parallel until the glitches in the new IT have been ironed out. [2] A direct consequence of the difference between the direct cut over strategy and the parallel systems strategy is that in the latter users can choose between alternative computerized IT to assist them in their work. This changes the basic IT adoption question facing users from “to use or not to use the IT” to a more complex one of “which IT to prefer.”

This study proposes and examines a variation of TAM that deals with parallel systems implementation strategy and the increased complexity posed by this new adoption question. The proposed model suggests that user preference for a new IT implemented in a parallel systems strategy is increased by the PU of the new IT and decreased by the PU of the old IT.

The model was examined using a survey in a large telecommunications organization in the Mid-Atlantic. The survey was given to employees of the organization’s customer service centers. This organization maintained two concurrent operational IT to provide customer service: an old mainframe system that had been in service for over 15 years, and a new replacement system that had been in the process of deployment for some time. Although the department was in the

process of switching to the new IT, using a combined phased-in and parallel implementation strategies, the sensitivity of the service being provided was such that the customer service employees had a choice when taking customer orders: either to use the new IT or to use the old IT. All the users had used both computerized IT extensively and were asked to evaluate the two systems side by side using the same TAM scales for both systems. The data support the proposed model.

The remainder of the paper is organized into the following sections. The first section provides a brief review of the literature on TAM and argues for the need to examine also user perceptions of the old IT when a parallel systems conversion strategy is employed. Next, we discuss the research model and hypotheses, based on applying TAM to a parallel systems conversion strategy, and present the research methodology used to test the proposed model. Finally, we present the analysis and results of our study, followed by a discussion of its implications for both practitioners and researchers.

## LITERATURE REVIEW

### The Technology Acceptance Model (TAM)

One of the most widely used models of IT adoption is TAM. TAM proposes that user perceptions of the usefulness (PU) and the ease of use (PEOU) of a new IT are antecedents of its adoption (Davis, 1989). PU deals with “the degree to which a person believes that using a particular system would enhance his or her job performance?” and PEOU deals with “the degree to which a person believes that using a particular system would be free of effort?” (Davis, 1989, p. 320). In the original TAM study, Davis (1989) showed that PU had a very significant effect on self-reported IT use and on user intentions to use the IT. PEOU, on the other hand, while significantly correlated with self-reported use, showed mostly insignificant correlations with self-reported use or with intention to use in regressions that included PU. Thus, Davis surmised that PEOU influences IT adoption primarily through PU. This conclusion has been supported and validated by subsequent research in a variety of settings and across a broad range of IT applications (e.g., Venkatesh and Davis, 1994;

Mathieson, 1991; Adams, Nelson and Todd, 1992; Szajna, 1994; Igarria, et al., 1996; Igarria, et al., 1997; Straub, 1994; Chin and Gopal, 1995; Keil, Beranek Konsynski, 1995) and across cultures (e.g., Straub, 1994; Gefen and Straub, 1997).

It is important to note in the context of the current study that most of the PU items (but not the PEOU items) *implicitly* compare the IT to an unspecified existing system (using the keywords: "easier" "improves" "increases" "faster" and "enhances". No previous TAM study in field settings has actually examined PU and PEOU for the separate IT that exist in a parallel systems strategy. For example, Agarwal and Prasad (1999) extended TAM by examining individual differences and their influence on PU and PEOU in a field study of an organization implementing the parallel conversion of a microcomputer user interface. However, their measurement of PU and PEOU only examined beliefs about the new system, not the old. Lucas and Spitler (1999) also extended TAM, including social norms and user performance, and tested their model in a field study. Their PU and PEOU items specifically included the phrase "Compared to my prior system" (Lucas and Spitler, 1999: p. 311), but again, they only measured the constructs for the new system and not explicitly for the old. In addition, like many TAM field studies, the use of the new technology in their study was a mixture of mandatory and voluntary, unlike the totally voluntary nature of the parallel conversion approach. Often it is not evident in report of the results of field studies whether an old IT was still accessible during the study period, such as the study of Venkatesh and Morris (2000), or the TAM study examines an implementation where a prior IT did not exist (Hu, Chau, Liu Sheng, and Tam 1999). Typical of TAM studies, the scales used by Venkatesh and Morris (2000) have no reference to an old system. Accordingly, no previous TAM related field study has explicitly examined user assessments of alternative IT and how such assessments affect the adoption of new IT. In today's market, however, many new IT are often deployed while retaining the existing and proven IT for some time until the glitches in the new IT are ironed out and the new IT proves its usefulness.

The advantage of such a parallel systems approach is that it reduces the risk associated with a direct cut over by enabling users to rely on an available and proven contingency IT should the new IT fail. Arguably, the decision facing users of whether to adopt new IT in a parallel systems strategy is more complex than that described by TAM because of the availability of viable alternative options. In essence, the decision facing these users does not depend only on the perceived outcomes of using the new IT but also on the perceived outcomes of the continuing to use the existing alternative options presented by the existing IT. One way of accounting for this increased complexity is to apply a Social Exchange Theory (described next) aspect to expand TAM. Specifically, such an extension would compare the expected outcomes, i.e. PU and PEOU, of the old and the new IT side by side. A comparison in this manner can also be easily expanded to include several alternative IT or other viable options.

### **A Social Exchange Theory Perspective of TAM**

According to Social Exchange Theory (SET) behavioral intentions are the product of an economic-like analysis of the expected outcomes (utility) and costs of the available options (Thibaut and Kelley, 1959; Kelley and Thibaut, 1978). Specifically, SET suggests that when deciding whether to undertake a certain behavior, people examine whether the expected outcomes justify the expected costs, and whether the certain behavior provides better expected outcomes given its costs ("return on investment? than alternative viable behaviors do. In this regard, SET, like TAM, stresses that behavioral intentions are based on a rational assessment of the expected outcomes of a behavior. Unlike TAM, though, in the case of SET, these behavioral intentions are based on the expectation of benefits that would outweigh the costs associated with a given behavior, rather than just on expected beneficial outcomes, as done by TAM. Another difference between SET and TAM, and the focus of this study, is that according to SET behavioral intentions are affected also by cost/benefit analyses of alternative viable behaviors. Consequently, according to SET, it is not enough that the expected benefits from a

behavior outweigh its costs, these benefits must also outweigh the costs more than those of alternative viable behaviors. In settings where there is negligible cost (such as with IT users in organizational settings), this means that preference to adopt a certain behavior depends on the expected benefits from it and how much these benefits out-weigh the benefits associated with alternative behaviors.

Applying this concept to IT adoption theory suggests that users adopt a new IT not only because of its expected beneficial outcomes (such as PU and PEOU), but also because these expected beneficial outcomes out-weight those of alternative IT. Consequently, when applying a parallel systems conversion strategy, the perceived beneficial outcomes of both the existing and the new IT should influence the adoption of the new IT. On the one hand, the more beneficial a new IT is perceived to be, the more inclined users will be to adopt a new IT. On the other hand, the more beneficial an existing IT is perceived to be, the less inclined users will be to adopt the new IT, because the new IT will out-perform the existing one to a lesser degree. Applying this idea to using the established verified scales of TAM suggests that the PU and PEOU of both the new and the existing IT should affect user preference to adopt the new IT. The detailed hypotheses are described next, beginning with the TAM based hypotheses.

## RESEARCH QUESTIONS AND HYPOTHESES

TAM (Davis, 1989) hypothesizes, and extensive research discussed above supports, that when the adoption of a new IT is not mandated, user assessment of its PU, and indirectly its PEOU, affect user choice to adopt it. The first three hypotheses suggests that these relationships apply also to the customer support system examined in this study, because all the users had a choice to either adopt the new IT or to continue with the old one. Specifically, it is hypothesized that PU and PEOU will influence user preference to use the new IT, and that PEOU will influence PU, as in the original TAM study. Unlike the original

TAM study, however, IT adoption in this study was measured as preference to use the new, rather than the old, IT. This change was done because in a parallel systems conversion strategy the decision facing the users is not whether and how often to use the new IT, but, rather, which IT to prefer. Moreover, the number of actual transactions submitted altogether to both IT depended not upon user discretion but upon customer calls:

H1.1: The greater the PU of the new IT the more users will prefer to adopt it

H1.2: The greater the PEOU of the new IT the more users will prefer to adopt it

H1.3: The PEOU of the new IT will positively influence users' PU of it

The unique nature of a parallel systems conversion strategy in comparison with a direct cut over strategy is that (whether or not either strategy is implemented with or without a pilot or a phased-in strategy) the old IT remains operational. As such, and in accordance with SET, the more attractive the outcomes of the old IT are, the less inclined users should be to adopt the new IT, because the benefits from the new IT will out-weigh the benefits from the existing IT to a lesser degree. Accordingly, the next hypotheses propose that users should be less inclined to adopt a new IT the more useful and the more easy to use the alternative existing system is.

H2.1: The greater the PU of the old IT the less users will prefer to adopt the new IT

H2.2: The greater the PEOU of the old IT the less users will prefer to adopt the new IT

Lastly, in accordance with TAM, PEOU is hypothesized to influence PU. This should apply to the original IT being replaced just as it does to any other IT, and so:

H2.3: The PEOU of the old IT will influence users' PU of it

The original TAM model and the extensions proposed are presented in Figures 1 A and B. The broken line arrows represent hypothesized negative effect.

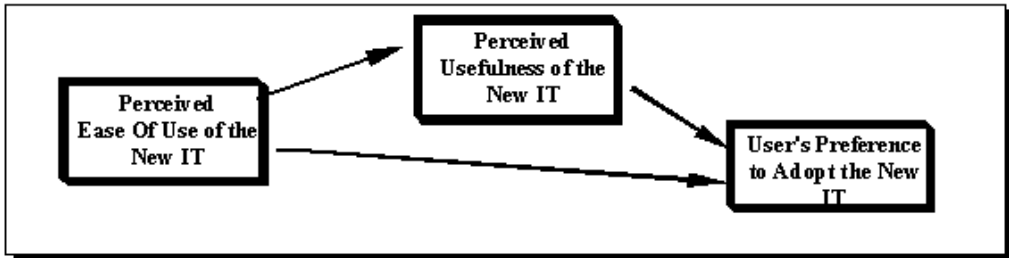


Figure 1 A: Original TAM Model

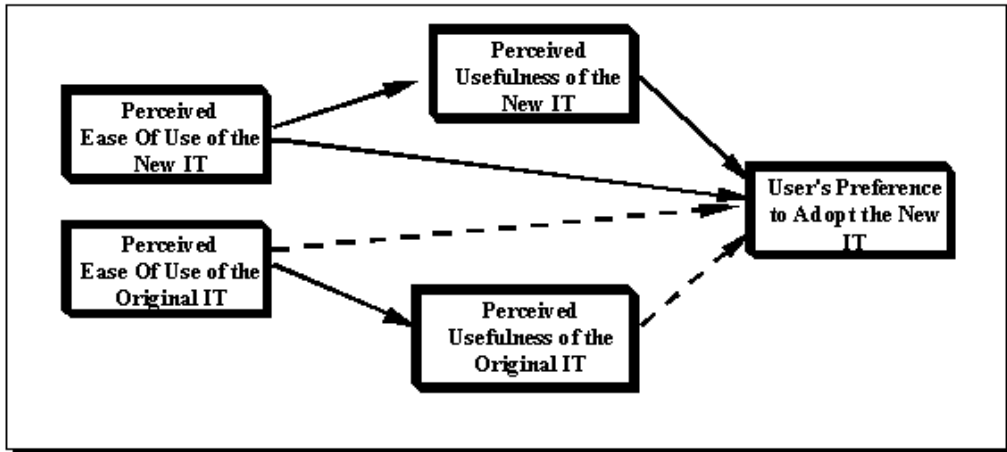


Figure 1 B: Extended TAM Model

**RESEARCH METHOD**

To test our hypotheses, we surveyed the employees of a customer support department of a large telecommunications company in the Mid-Atlantic region of the United States. The department was in the process of replacing an existing mainframe IT with a new and more advanced one. The old IT was a mainframe system with a character-based user interface that required users to enter customer orders with complicated shorthand coding of customer information and products. This system had been in place for over 15 years. The new IT had a graphical user interface with customer and product information in plain English. The new system also incorporated many items that had to be looked up in paper references when using the old IT.

The functionality handled by the customer support department was extremely complex but crucial to the company. In the case of the old IT this involved taking orders for many different types of products, each with

varying options and pricing depending upon the geographic location of the customer. To simplify this process, the organization decided to implement a new replacement system. The risk involved, however, dictated that this should be done in parallel with the old system and in phases. Throughout this implementation process, the old system was retained in operation in its entirety. Though, the organization strongly encouraged employees to use the new system, users could choose which IT to use for the sub-systems examined in this study. The data were collected using a questionnaire that was distributed to the users by their supervisors during work hours. Management encouraged the users to participate in the survey to get an independent third party assessment of the how the users felt about the new IT. All the users who were asked completed the survey did. Of the 157 surveys that were returned, 9 were dropped because of missing data, resulting in 148 usable surveys and an effective response rate of 94%. The users were mostly women (88

women, 28 men, 32 undeclared), had experience with the new IT, and had worked with the old IT between 6 months and 15 years (mean = 2.4, standard deviation 2.9). Age and education characteristics are given in Table 1.

The questionnaire examined the PU and PEOU of equivalent sub-systems in both IT side by side. The questionnaire explicitly stated the system name in the column headings of the questionnaire, in order to assure that the respondents were explicitly comparing the old and new IT. The PU and PEOU scales were adapted from the established and verified scales used in TAM (Davis, 1989). These PU and PEOU scales have been shown to have good construct validity and reliability (Doll, Hendrickson, and Deng, 1998). The

questionnaire also measured system preference with three new items. The items of the questionnaire were examined before the administration of the questionnaire by the field manager in charge of system implementation to verify their content validity and accuracy. All the items were measured with a 5 point Likert scale. The questionnaire is presented in the Appendix. The descriptive statistics, shown below in Table 2, show that the users overall thought the new IT was more useful ( $T=3.07$ ,  $p\text{-value} = .03$ ) though not significantly more easy to use than the original one ( $T=1.38$ ,  $p\text{-value} = .169$ ), and preferred it. All the Cronbach's  $\alpha$  are above the thresholds suggested by Nunnally (1967).

**Table 1: Sample Characteristics**

	Group	Frequency	Percent
Age group	20s	55	37.2
	30s	39	26.4
	40s	33	22.3
	50s	9	6.1
	Missing	12	8.1
Education level	High School	50	33.8
	Tech School	21	14.2
	Undergrad	52	35.1
	Grad	3	2.0
	Missing	22	14.9

**Table 2: Descriptive Statistics**

Construct	Mean (standard deviation)	Cronbach's $\alpha$
PU of the new IT	2.36 (1.03)	0.94
PU of the old IT	2.74 (.96)	0.92
PEOU of the new IT	2.33 (.90)	0.89
PEOU of the old IT	2.48 (.99)	0.83
Preference to adopt new IT	2.84 (.60)	0.83

Scales range from 1=strongly agree to 5=strongly disagree

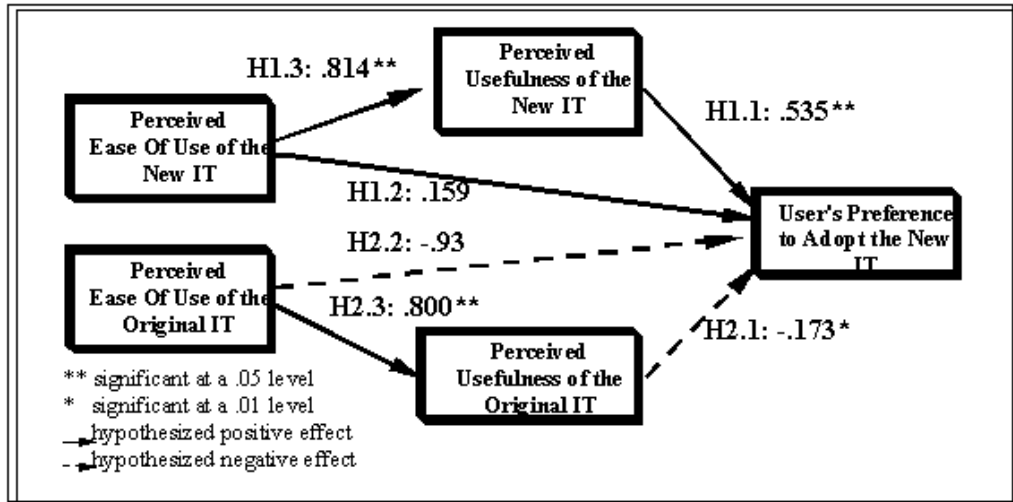


Figure 2: Research Model and Hypotheses with PLS Coefficients

## ANALYSIS AND RESULTS

The hypotheses were examined using PLS. PLS examines the entire set of hypotheses at once by using a set of linear regression analyses. The analyses show that preference for the new IT was increased by the perceived usefulness of the new IT (supporting H1.1) and decreased by the perceived usefulness of the old IT (supporting H2.1), but was not affected by the PEOU of the new IT (not supporting H1.2) or of the old IT (not supporting H2.2). The data also show that PU of the new IT was influenced by the its PEOU (supporting H1.3), and that that PU of the old IT was influenced by the its PEOU (supporting H2.3). The R-square of system choice is .51, of PU of the new IT .66, and the PU of the old IT .64. Path coefficients are shown in Figure 2. Significant paths at the .01 level are presented with double asterisks. The data also show that the PU of the new IT and the old IT are not significantly related ( $r = -.0494$ ,  $p\text{-value} = .589$ ).

## DISCUSSION AND IMPLICATIONS

Deploying new IT with a parallel systems conversion strategy changes the basic adoption question facing users from one of "to use or not to use the new IT?" to a more complex decision of "which IT to prefer?" The data show that also in the latter case, the predictions of TAM hold: the PU and the

PEOU of the new IT influence its adoption. The main contribution of the study, however, is that the data support the hypothesized influence of the PU and PEOU of the old IT too on the adoption of the new IT. This new perspective is especially important given the growing tendency to deploy new IT in a parallel systems conversion strategy, where the old IT is kept operational over extensive periods of time while the new IT is being deployed. The high R-square show the predictive validity of this model.

The PLS regression coefficients add detail to this story. The coefficients show that user preference toward the new IT is more strongly influenced by the perceived usefulness of the new IT than by that of the old IT. This implies that users prefer new IT more because of the perceived outcomes associated with them, than because of the lesser perceived usefulness of older IT. Nonetheless, the perceived usefulness of the old IT has a significant effect that should not be overlooked.

As in many other TAM studies, PEOU appears to exert an indirect, rather than a direct, influence on IT adoption through PU. In this study, the PEOU of each system explained a sizable portion of the variance in PU of its respective IT (.66 for the new IT and .64 for the old IT), but neither PEOU had a significant effect on IT adoption. This finding is

reminiscent of three of the four original TAM studies (Davis 1989) and many other TAM studies in field settings (e.g. Gefen and Keil, 1998). Indeed, although the hypothesized effect of PEOU on IT adoption is consistent with the original TAM model, Davis (1989) too suggested that PEOU affects adoption through PU.

### **Limitations and Directions for Future Research**

Before discussing the implications of this study its limitations need to be addressed. This study performed a linear correlation-based analysis of survey data. Thus, it cannot show actual causation, but rather corroborate causation implied through the theory on which the research model is based (Hair et al., 1992; Bollen, 1989). In the same category, the analysis method we employed assumed a *linear* regression. It is quite possible that PEOU may bear direct, albeit not linear, effects that were not identified in this study.

A second limitation is that only one organization and only one set of parallel IT were studied, as in many other TAM related studies field settings. It is quite possible that the results from this study may not generalize to other types of IT or to other organizations. Having said that, the high response rate and the significant support for the hypothesized effects lead us to believe that the model is robust and justifies further testing. Such testing might examine other types of replacement information systems, other organizations, and other cultures.

### **Implications**

TAM has been the subject of extensive research, yet not in the context of parallel system conversion strategies. In such cases, the study shows that IT adoption does not occur in a vacuum: the PEOU and PU of both the old and new IT affect user preference to adopt the new IT. Most importantly, the PU of the old IT *negatively* affects adoption of the new IT. Tentatively, this suggests that managers and researchers should consider the context in which new IT are adopted and the alternative IT options the users have.

The validation of TAM and its application to the context of a parallel systems

conversion strategy can provide managers with a new perspective not previously examined by TAM-related studies. As TAM implies, IT managers should work to insure that the IT is useful and easy to use. No less important, though, this study shows that managers in charge of implementing new IT in a parallel systems conversion strategy should also consider the perceived ease of use and usefulness of the IT that is being replaced, and accordingly realize that the topic that needs to be addressed is not only the perceived outcomes (such as PU and PEOU) of the new IT, but also how these compare with the existing IT. It is much easier for users in a parallel conversion context to stick with the old system if they prefer it, thus undermining the time and effort put into system development, implementation and training. It is also easier for users to compare the systems since they are available side by side on their desktop. Thus parallel implementation, while reducing the risk of lost revenue and increased costs due to new system failure, puts at risk the organization's investment in system development and training by allowing the users to have access to the old system. Parallel implementation is expensive for an organization, especially given the large investments companies are making in replacing legacy systems, and the interactions of PEOU and PU in the context of TAM should be understood in order for these replacements to be successful.

This study has shown the importance of the context in which TAM is examined. Scholarly researchers should consider the context of IT adoption when applying TAM theory, and should recognize the importance and relevance of the PU and PEOU of the old IT in a parallel implementation.

### **REFERENCES**

- Adams, D. A, Nelson R. R, and Todd P. A., "Perceived Usefulness, Ease of Use and Usage of Information Technology: A Replication," *MIS Quarterly* (16:2), June 1992, pp. 227-247.
- Agarwal, R. and Prasad, J. "Are individual differences germane to the acceptance of new information technologies?," *Decision Sciences* (30:2), Spring 1999, pp. 361-391.
- Bollen, K.A. *Structural Equations with Latent Variables*, John Wiley and Sons, NY, 1989.



- Chin, W.W. and Gopal, A. "Adoption Intention in GSS: Relative Importance of Beliefs," *DataBase* (26: 2&3), May/ August 1995, pp. 42-63.
- Davis, F.D. "Perceived Usefulness, Perceived Ease of Use and User Acceptance of Information Technology," *MIS Quarterly* (13:3), September 1989, pp. 319-339.
- Doll, W. J., Hendrickson, A., and Deng, X. "Using Davis's Perceived Usefulness and Ease-of-use Instruments for Decision Making: A Confirmatory and Multigroup Invariance Analysis," *Decision Sciences* (29:4), Fall 1998, pp. 839-869.
- Gefen, D. and Straub, D.W. "Gender Differences in Perception and Adoption of E-mail: A Cross-Cultural Perspective," *MIS Quarterly* (21:4), December 1997, pp. 389-400.
- Gefen, D. and Keil, M., "Developer Trust-Building Behavior and User Perceptions of Perceived Usefulness: A Social-Exchange Perspective," *DATA BASE for Advances in Information Systems* (29:2), Spring 1998, pp. 35-49.
- Hair, J.F. Jr., Anderson, R.E., Tatham, R.L. and Black, W. C. *Multivariate Data Analysis with Readings*, Third Edition, Macmillan Publishing Company, NY, 1992.
- Hu, P.J., Chau, P.Y.K., Lui Sheng, O.R., and Tam, K.Y. "Examining the Technoogy Acceptance Model Using Physician Acceptance of Telemedicine Technology," *Journal of Management Information Systems* (16:2), Fall 1999, pp. 91-112.
- Igbaria, M, Parasuraman, S., and Baroudi, J. J. "Microcomputer Usage," *Journal of Management Information Systems* (13:1), Summer 1996, pp. 127-143.
- Igbaria, M., Zinatelli, N., Cragg, P. and Cavaye, A. L. M. "Personal Computing Acceptance Factors in Small Firms: A Structural Equation Model," *MIS Quarterly* (21:3), September 1997, pp. 279-305.
- Keil, M., Beranek, P.M. and Konsynski, B.R. "Usefulness and Ease of Use: Field Study Evidence Regarding Task Considerations," *Decision Support Systems* (13:1), 1995, pp. 75-91.
- Kelley, H.H. and Thibaut, J.W. *Interpersonal Relations A theory of Interdependence*, John Wiley and Sons, NY 1978.
- Lucas, H. C. and Spitler, V.K. "Technology use and performance: A field study of broker workstations," *Decision Sciences* (30:2), Spring 1999, pp. 291-311.
- Mathieson K. "Predicting User Intentions: Comparing the Technology Acceptance Model with the Theory of Planned Behavior," *Information Systems Research* (2:3), September 1991, pp. 173-191.
- Nunnally, J.C. *Psychometric Theory*, McGraw-Hill, NY, 1967.
- Straub, D.W., "The Effect of Culture on IT diffusion: E-mail and FAX in Japan and the U.S.," *Information Systems Research* (5:1), March 1994, pp. 23-47.
- Szajna, B. "Software Evaluation and Choice: Predictive Validation of the Technology Acceptance Instrument," *MIS Quarterly* (18:3), September 1994, pp. 319-324.
- Thibaut, J.W. and Kelley, H.H. *The Social Psychology of Groups*, John Wiley and Sons, Inc. NY, 1959.
- Venkatesh, V. and Davis, F.D. "Modeling the Determinants of Perceived Ease of Use," *Proceedings of the fourteenth International Conference on Information Systems*, 1994, pp. 213-225.
- Venkatesh, V. and Morris, M. G. "Why Don't Men Ever Stop to Ask for Directions? Gender, Social Influence, and Their Role in Technology Acceptance and Usage Behavior," *MIS Quarterly*, forthcoming (March 2000), available at <http://www.mbs.umd.edu/is/vvenkate/myhomepage/misq2000/misq4.doc>.

### APPENDIX: QUESTIONNAIRE USED:

In the items below the name of the software and its predecessor was replaced with New IT and Old IT, respectively, in accordance with our agreement to respect the company's anonymity.

#### SOFTWARE ASSESSMENT

Please indicate the extent of your agreement or disagreement with each of the statements in the three boxes using this scale:

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Strongly agree	Agree	Neutral	Disagree	Strongly disagree

#### CHARACTERISTICS BY FUNCTIONALITY

	Old IT (legacy system)					New IT				
	agree	disagree	agree	disagree	agree	disagree	agree	disagree	agree	disagree
Learning to operate the software was easy	1	2	3	4	5	1	2	3	4	5
The software is flexible to interact with	1	2	3	4	5	1	2	3	4	5
The software makes it easier to do my job	1	2	3	4	5	1	2	3	4	5
The software improves my job performance	1	2	3	4	5	1	2	3	4	5
The software increases my productivity	1	2	3	4	5	1	2	3	4	5
The software enables me to accomplish tasks faster	1	2	3	4	5	1	2	3	4	5
The software enhances my effectiveness on the job	1	2	3	4	5	1	2	3	4	5
I find it easy to get the software to do what I want it to do	1	2	3	4	5	1	2	3	4	5
I find the software easy to use	1	2	3	4	5	1	2	3	4	5
My interaction with the software is clear and understandable	1	2	3	4	5	1	2	3	4	5
I find the software useful in my work	1	2	3	4	5	1	2	3	4	5
It was easy to become skillful at using the software	1	2	3	4	5	1	2	3	4	5

#### ASSESSMENT REGARDING THE SCOPE OF FUNCTIONALITY OF CURRENT SERVES

	Strongly agree	Strongly disagree
Even if I had the option not to, I would use New IT very often	1 2 3 4 5	1 2 3 4 5
Even if I had the option not to, I would use New IT on a daily basis	1 2 3 4 5	1 2 3 4 5
If I could choose, I would go back to Old IT all the time	1 2 3 4 5	1 2 3 4 5
Even if it were not company policy I would still use New IT	1 2 3 4 5	1 2 3 4 5

## AUTHORS



**Catherine M. Ridings** is an Assistant Professor at Lehigh University's College of Business and Economics teaching in the Information Systems program. She received her Ph.D. from Drexel

University. Her research interests include the management of technical personnel and associated issues, such as dual career paths and career management. She is also conducting research on virtual communities in the context of trust and social exchange, as well as research on IS adoption. Her teaching interests include E-Business, E-Commerce, Systems Analysis and Design, Database Design, and Visual Basic. Catherine has industry experience developing large-scale customer contact systems on distributed platforms.



**David Gefen** is an assistant professor of MIS in the Management Department at Drexel University, where he teaches Database Systems, Visual Basic, and Strategic Management of IT. David Gefen holds a

doctorate from Georgia State University and a Master of Sciences from Tel-Aviv University. Before entering academia, he spent 12 years developing and managing large information systems, including the ongoing management of a large state-of-the-art logistics system. His research specialization is in IS adoption, the Internet, culture and gender effects, software maintenance and trust. David has published in the *MIS Quarterly* and in the *DATA BASE for Advances in Information Systems*, and has forthcoming articles in *Omega*, *The International Journal of Management Science*, *Journal of the Association for Information Systems*, *Journal of Information Technology Theory & Application*. Dr. Gefen is also the author of several encyclopedia articles on IT adoption and IT security, and a book chapter

on trust and ERP adoption. Dr. Gefen is also a Special Departmental Editor for the *DATA BASE for Advances in Information Systems*. He won the second best conference place award for the 1996 *Academy of Management Printed Papers? Proceeding*, and has published in the *IEEE Conference on Software Maintenance* and *The Thirteenth Annual Pacific Northwest Software Quality Conference*.