

May 2006

## Mobile Business Research Published in 2000-2004: Emergence, Current Status, and Future Opportunities

Eusebio Scornavacca  
*Victoria University of Wellington*

Stuart J. Barnes  
*University of East Anglia*

Sid L. Huff  
*Victoria University of Wellington, Sid.Huff@vuw.ac.nz*

Follow this and additional works at: <https://aisel.aisnet.org/cais>

---

### Recommended Citation

Scornavacca, Eusebio; Barnes, Stuart J.; and Huff, Sid L. (2006) "Mobile Business Research Published in 2000-2004: Emergence, Current Status, and Future Opportunities," *Communications of the Association for Information Systems*: Vol. 17 , Article 28.  
DOI: 10.17705/1CAIS.01728  
Available at: <https://aisel.aisnet.org/cais/vol17/iss1/28>

This material is brought to you by the AIS Journals at AIS Electronic Library (AISeL). It has been accepted for inclusion in Communications of the Association for Information Systems by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact [elibrary@aisnet.org](mailto:elibrary@aisnet.org).



**C**ommunications of the **I**nsformation **S**ystems  
**A**ssociation for **I**nsformation **S**ystems

## **MOBILE BUSINESS RESEARCH PUBLISHED IN 2000-2004: EMERGENCE, CURRENT STATUS, AND FUTURE OPPORTUNITIES**

Eusebio Scornavacca  
School of Information Management  
Victoria University of Wellington

Stuart J. Barnes  
School of Management  
University of East Anglia

Sid L. Huff  
School of Information Management  
Victoria University of Wellington

### **ABSTRACT**

The convergence of mobile communications and distributed networked computing has provided the foundation for the development of a new channel of electronic business: mobile business. Research into mobile business has begun to grow significantly over the last five years to the point where we now see dedicated journals and conferences focusing on this topic. This paper provides an assessment of the state of mobile business research. Drawing on over 230 research papers from key research outlets, we describe the emergence of this research area and characterize its current status. We also provide a critique of current research and some recommendations for future research into mobile business.

**KEYWORDS:** mobile business, literature survey, longitudinal analysis, taxonomy

### **I. INTRODUCTION**

Distributed networked computing profoundly impacted the way we live, work, learn and communicate [e.g. Negroponete, 1995; Tapscott, 1997]. The Internet especially proved to be an easy and efficient way of delivering a wide variety of services to nearly a billion 'wired' users. In parallel with the Internet, another technology stream emerged to play an increasingly important role in business and society: mobile communications. Driven by the penetration of mobile phones and related devices, mobile applications became especially valued in an age where time is precious and the weight attached to convenience is high. In 1995, seven out of 10 people in Japan already owned cell-phone accounts, and in countries such as Italy, Norway, Sweden and the United Kingdom, the market penetration of mobile phones exceeded 100% [Sultan and Rohm, 2005]. Until recently, the PC and mobile technologies followed largely separate paths.

Mobile Business Research Published in 2000-2004: Emergence, Current Status, and Future Opportunities by E. Scornavacca, S.J. Barnes, and S.L. Huff

However, in the late 1990s, convergence between the two began accelerating, resulting in a variety of wireless data communication capabilities, in particular the wireless Internet [Clarke, 2001; Varshney and Vetter, 2002; Balasubramanian et al., 2002]. Convergence led to the development of sophisticated wireless data services, based on mobile data access and electronic messaging on mobile devices.

While the markets for these services are diverse, the most commonly cited applications are in the business-to-consumer (B2C) and business-to-employee (B2E) segments [AT Kearney, 2003]. Consumer-oriented wireless applications include person-to-person messaging, email, banking, games, music, shopping, ticketing, and news and other information feeds. Businesses apply wireless technologies to sales force automation, navigation, tracking, field force automation, wireless telemetry, the mobile office and more.

For purposes of this paper, m-business is defined as the use of the mobile information technologies, including the wireless Internet, for communication and coordination within an organization, between an organization and other organizations and/or customers, and for management of the firm [Scornavacca and Barnes, 2004].

Mobile business is leading to the emergence of a new research stream, building on research in areas such as electronic business, marketing, computer science, and business strategy. The last five years saw a steadily increasing number of papers in mobile business in existing journals and conferences. Furthermore, numerous special issues of journals appeared that focused on m-business, m-business conference tracks, as well as entire conferences, journals and books devoted to aspects of mobile business.

This paper assesses the state of mobile business research. Through a thorough examination of major publications outlets, we characterize the development of this research stream, where it is today, and, most importantly, where effort should be focused in the future in order to build a strong research tradition.

The paper is structured as follows. Section II describes the method used to gather and analyze the data. The results of the analysis are presented and discussed in Section III. The paper concludes with a summary and recommendations for future research into mobile business.

## **II. RESEARCH METHOD**

There is an established tradition in information systems research of examining the research literature itself to better understand the "state of play" of research in the field, and to discern patterns in the development of the field [Culnan and Swanson, 1986; Alavi and Carlson, 1992; Banker and Kauffman, 2004; Wareham et al., 2005]. In that tradition, the principal aim of this study is to understand the state of mobile business research, by examining the m-business research literature published to date.

First, it was necessary to locate conferences and journals that published relevant research on this topic. The search began with an examination of previously published lists of publications containing information systems research [e.g., Mylonopoulos and Theoharakis, 2001] and e-commerce research more specifically [e.g., Bharati and Tarasewich, 2002]. The selection was refined via discussions with senior academics actively researching in this domain.

Since research in this area is relatively recent, the scope of this investigation was limited to the time frame January 2000 to November 2004. Table 1 presents the initial list of journals and conferences examined.

The next step was to examine the abstracts of every paper published during the selected period in these research outlets. All abstracts were scrutinized and any articles considered pertinent to the topic were selected for analysis. The general guideline for article selection was as follows:

The central theme should be mobile or wireless applications; and

Articles should be in the information systems / e-business domain

Most papers from sources such as MONET and some technical tracks at the HICSS conferences focused on technical issues, not applied issues, and fell more properly in the domains of either computer science or electrical engineering. Such papers were therefore excluded from present consideration.

Table 1. Scope of the m-Business Literature Review

<b>M-business Conferences</b>
International Conference on Mobile Business (mBusiness)
Mobility Roundtable
<b>M-business Journals</b>
IJMC - International Journal of Mobile Communications
MONET - Mobile Networks and Applications
<b>IS and e-business Conferences</b>
ICIS - International Conference on Information Systems
HICSS – Hawaii International Conference On System Sciences
ECIS - European Conference on Information Systems
PACIS - Pacific-Asia Conference on Information Systems
ACIS - Australian Conference of Information Systems
ICEB - International Conference on Electronic Business
Bled eConference
AMCIS - Americas Conference on Information Systems
ICEC – International Conference on Electronic Commerce
<b>IS and e-business Journals</b>
IJEC - International Journal of Electronic Commerce
CACM - Communications of ACM
MISQ - MIS Quarterly
IJEB - International Journal of Electronic Business
JAIS - Journal of the Association of Information Systems
JMIS - Journal of Management Information Systems
E-services Journal
Electronic Markets
CAIS – Communications of AIS
ECRA -Electronic Commerce Research and Applications

A total of 533 papers were selected for further analysis. Table 2 details the source and year of publication of the articles selected for this analysis.

Table 2. Articles Selected by Year and Source of Publication

Source (total)	Number of Articles/year				
	2000	01	02	03	04
M-business Conferences (183)					
mBusiness (112)	-	-	62	50	NA
Mobility Roundtable (71)	-	-	22	22	27
M-business Journal (40)					
IJMC (37)	-	-	-	18	19
MONET* (3)	0	0	3	0	0
IS and e-business Conferences (247)					
ICIS (7)	0	1	3	3	NA
HICSS * (62)	1	8	15	16	22
ECIS (24)	0	2	7	6	9
PACIS (21)	0	0	4	7	10
ACIS (9)	1	2	5	1	NA
ICEB (9)	-	2	7	NA	NA
Bled eConference (30)	1	1	9	13	6
AMCIS (67)	1	10	13	14	29
ICEC (18)	0	2	8	8	NA
IS and e-business Journals (65)					
IJEC (6)	0	0	0	6	0
CACM (25)	0	2	4	15	4
MISQ (0)	0	0	0	0	0
IJEB (8)	-	-	-	1	7
JAIS (0)	0	0	0	0	0
JMIS (0)	0	0	0	0	0
E-service Journal (5)	-	0	0	5	0
Electronic Markets (8)	0	0	8	0	0
CAIS (9)	0	0	4	3	2
ECRA (2)	-	-	1	1	0
<b>Total (533)</b>	<b>4</b>	<b>30</b>	<b>175</b>	<b>189</b>	<b>135</b>

(Note: (-) it did not exist at that time; (NA) not accessible/available; (\*) papers with primarily a technical focus were excluded)

In addition to the 533 articles mentioned above, we also wanted to include key articles published in other available sources. To that end, a keyword search (using the keywords mobile, wireless, m-business, and m-commerce) was executed on three major bibliographic databases (Proquest, Emerald and Inderscience). The articles produced by these searches were scrutinized by

reviewing the papers' abstracts. Consequently an additional forty articles were selected for inclusion. The final database included 570 publications on mobile business. This database is currently available online at "M-lit" - the mobile business literature website (<http://www.m-lit.org>) – and currently contains more than 900 references.

### III. RESEARCH QUESTIONS

To focus the study, the following research questions were posed:

What is the principal concern of the research (e.g., consumers, business applications, telecommunications industry, wireless technologies, etc.)?

What research methods were used?

Was primary data collection carried out?

What were the key contributions of the study?

To answer these questions, the 570 candidate articles were carefully categorized and then analyzed in detail. One of the issues that arose concerned the quality of the research published. Examination of the articles suggested to us that the review and selection process of some of the conferences and journals from which articles were extracted did not appear rigorous.

We decided to focus our efforts on articles which met or exceeded a quality baseline typical of established journals and conferences. For this reason, a number of articles from the newer m-business conferences were eliminated from further consideration. (Many of the higher-quality papers published at these conferences also appeared in IJMC or in special issues of other journals, so were incorporated into the study via those routes). Papers from the AIS (Association for Information Systems) sponsored and affiliated conferences and forums (ICIS, AMCIS, ECIS, PACIS and CAIS), as well as those from HICSS, were included in the analysis on the assumption that appropriately rigorous reviewing would have occurred.

Table 3. Sources for the Detailed m-Business Literature Analysis

Sources	N	Percentage
AMCIS	67*	28.5%
HICSS	62*	26.4%
IJMC	37	15.7%
ECIS	24	10.2%
PACIS	21	8.9%
CAIS	9	3.8%
e-markets	8	3.4%
ICIS	7	3.0%
Total	235	100%

(Note: (\*) The difference from the reference distribution is highly significant. Chi-square = 136.51, df = 7, 1-p = >99.99%. Chi-square is calculated with equal expected frequencies for each modality).

After careful examination, 235 articles, from eight sources, were selected for detailed analysis: 181 (77%) from conferences and 54 (23%) from journals (see Table 3). These articles were read in their entirety, categorized and subsequently analyzed.

The absolute contribution from AMCIS and HICSS is notable. This contribution is mainly a reflection of the overall size of these conferences and the large number of papers presented there.

#### IV. RESULTS OF THE ANALYSIS

It is clear that mobile business research has expanded rapidly, more than doubling each year. More than half of the sample analyzed in this study was published within 12 months of its completion in early 2005 (Figure 1).

There is a general perception that most academics approached m-business research from a consumer point of view, as was the case with the early e-business literature [Wareham et al., 2005]. To identify the research focus in relation to the target group, each article was classified into one of the following five categories: (1) consumer, (2) business, (3) technology, (4) industry and (5) general. Table 4 presents a characterization of each category and the distribution of articles across the five categories. The hypothesis – that mobile business research in the 2000-2004 period is skewed towards a focus on consumer issues - was confirmed by our analysis ( $p < 0.01$ ). Overall, research focused on consumer applications corresponded to 55.7% of the total.

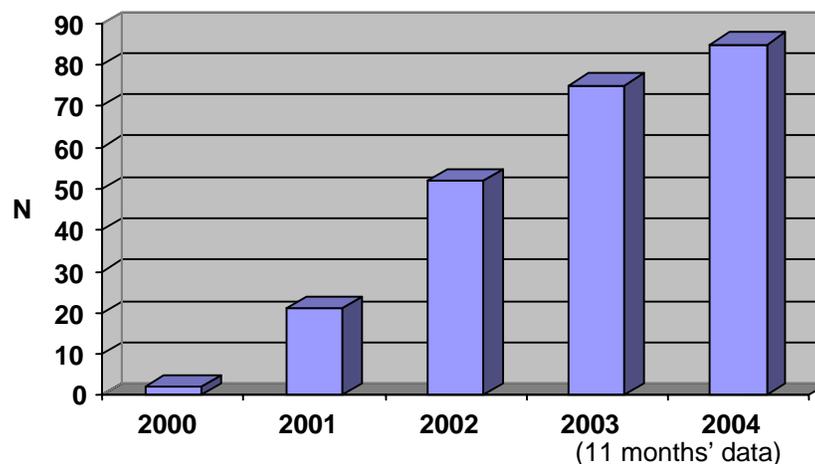


Figure 1. Number of Publications per Year

The implications of this result are important. Practitioner research published by Media Lab South Pacific [2003], AT Kearney [2003] and Forester Research [2004], point out that the international market for business applications of mobile technology - especially business-to-employee wireless applications – is expected to grow twice as rapidly as the market for consumer applications. Yet our analysis indicates that a large proportion of m-business research has been focused on consumer issues. The practitioner data suggests that business applications of mobile/wireless technology are in need of more thorough development in future research.

A wide range of research topics were evident in the 235 articles. Based on the purpose (variously described as goal, aim, objective) stated in each article, the classification presented in Table 5 was developed. This classification did not aim to interpret the research goal but rather to reflect the primary topic of research according to the authors. Therefore, an occasional overlap of semantics does occur (e.g. “technologies” and “3G”). As expected, the most frequent topic was

m-commerce (16.6%), usually investigated from a consumer perspective. Typically this topic was approached in a very broad manner without focusing on a specific type of m-business application. Strategic analysis (e.g., describing or conceptualizing business models and presenting intuition-based reasoning about the future of m-commerce) also emerged as a popular topic (7.2%).

Table 4. Focus of m-business Research

Category	Characterization	N	Percentage
Consumer	Consumer applications, consumer behaviour, implications of mobile/wireless technology for consumers	131*	55.7%
Business	Business applications, organizational impact, implications of mobile/wireless technology for businesses	41	17.4%
Technology	Mobile/wireless technology, networks, development of applications	38	16.2%
General	General issues about m-business, broad and unspecific focus	17	7.2%
Industry	Telecommunications industry and wireless service providers	8	3.4%
<b>Total</b>		<b>235</b>	<b>100%</b>

Note: (\*) The difference from reference distribution is highly significant. Chi-square = 204.13, df = 4, 1-p = >99.99%. Chi-square is calculated with equal expected frequencies for each modality.

Table 5: Research topic

Topic	N	Freq.	Topic (cont)	N	Freq.
M-commerce	39*	16.6%	Entertainment	4	1.7%
Strategy	17*	7.2%	3G	4	1.7%
Location	16	6.8%	Mobility	4	1.7%
Network	16	6.8%	Security	4	1.7%
Healthcare	13	5.5%	Context	4	1.7%
Internet (WAP, i-mode)	13	5.5%	Emergency Alerts	3	1.3%
Services	13	5.5%	Education	3	1.3%
Marketing	12	5.1%	Media	3	1.3%
Finance	10	4.3%	Social	2	0.9%
Enterprise	9	3.8%	Agriculture	2	0.9%
Mob. communications	9	3.8%	Government	1	0.4%
Devices	8	3.4%	Knowledge Mgt.	1	0.4%
Content	8	3.4%	Insurance	1	0.4%
Technologies	8	3.4%	Real estate	1	0.4%
Software development	7	3.0%	<b>Total.</b>	<b>235</b>	<b>100%</b>

Note: (\*) The difference from reference distribution is highly significant. Chi-square = 208.64, df = 28, 1-p = >99.99%. Chi-square is calculated with equal expected frequencies for each modality.

Among the 41 papers published about business applications, nine focused on enterprise applications such as field force automation and job dispatching, eight investigated wireless applications in healthcare, and only four explored the strategic implications of wireless and mobile technologies for businesses. It's also remarkable that among 235 papers only one article had as its main topic the use of wireless and mobile technologies in government agencies.

To investigate whether the m-business literature is dominated by intuition-based reasoning and conceptual analysis rather than empirical investigations, a categorization was needed to classify the selected articles [Hirschheim, 1991; Wareham et al., 2005]. In this case, "empirical research" was considered as all research originating in or based on observation or experience, independently of whether the researcher gathered data through primary or secondary data collection (e.g. case studies based on information collected from secondary sources such as websites and practitioner reports were considered empirical). Papers based on intuition-based reasoning and academic literature reviews were classified as "conceptual research."

Following classification, 153 articles (61.5%) were found to be empirical research and 82 (34.9%) conceptual (Figure 2). A substantial number of studies were not based on primary data collection. In most cases, these were case studies or simulations based on data gathered from external sources. In addition, 89.4 % (34) of the papers that focused on technology and 76.6% (13) of the papers focused on general issues were not based on primary data collection. On the other hand, among the 41 papers published about business applications, 28 (68.2%) were based on primary data collection.

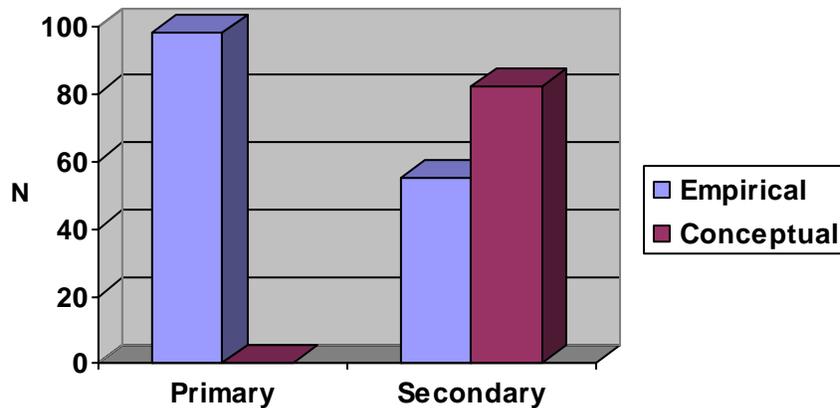


Figure 2. Nature of Research and Data Collection

Another positive finding is the increasing proportion of articles based on primary data collection published in 2004 (Table 6). As m-business gains credibility as a separate area of research worthy of study, it is likely that the growth of primary research will continue to increase.

To identify the research methods or research approaches used in the m-business literature, all articles were classified according to the method or approach stated in each article [Yin, 1984; Benbasat et al.,1987; Kaplan and Duchon, 1988]. Table 7 presents the distribution found in the sample. Due to the large number of papers based on conceptual analysis, literature review was the most common research approach used by the authors (31.9%). Case studies, usually focused on specific applications, were also commonly employed (23.8%). It should be noted that 44% of the case studies were based on secondary data collection. Surveys were also commonly used in the m-business literature. Most of the surveys were administered to large samples of consumers, and questionnaires were administered through the Internet. Surveys of university students were common.

Table 6. Year of Publication and Data Collection

Year	Data Collection		Total
	Freq. (%)	Freq. (%)	Freq. (%)
	Primary	Secondary	
2000	0 (0.0)	2 (0.9)	2 (0.9)
2001	8 (3.4)	13 (5.5)	21 (8.9)
2002	20 (8.5)	32 (13.6)	52 (22.1)
2003	26 (11.1)	49 (20.9)	75 (31.9)
2004	44 (18.7)	41 (17.4)	85 (36.2)
<b>Total</b>	<b>98 (41.7)</b>	<b>137 (58.3)</b>	<b>235 (100)</b>

Table 7. Research Methods Used

Method	N	Percentage
Literature review	75*	31.9%
Case study	56*	23.8%
Survey	40	17.0%
Simulation	32	13.6%
Experiment	13	5.5%
Interviews	6	2.6%
Focus Group	5	2.1%
Field study	3	1.3%
Delphi	3	1.3%
Not Stated	2	0.9%
<b>Total.</b>	<b>235</b>	<b>100%</b>

Note: (\*) The difference from reference distribution is highly significant. Chi-square = 260.19, df = 9, 1-p = >99.99%. Chi-square is calculated with equal expected frequencies for each modality.

Early research tends to be dominated by conceptual studies, later giving way to empirical work [Keen, 1980]. To determine whether a longitudinal variation exists in the research methods used in the m-business literature, an independence test between year of publication and research method was carried out. The test did not show a significant relationship between these two variables. Nonetheless, it seems likely that in the near future the proportion of conceptual analyses will decrease and the proportion of empirically-based analysis will increase.

We also conducted an analysis of each article's main contributions. Many authors clearly highlighted the main contributions of their articles; however, in a number of cases (86), due to the lack of information given by the authors, this classification required a reviewer judgment. Table 8 presents the findings. The fact that "literature review" was the most common research method undoubtedly resulted in "insights" and to a lesser extent "frameworks" emerging as the most common type of contribution of the articles reviewed. Only 30% (18) of the papers that offered a framework as their main contribution are based on primary data collection.

Finally, a longitudinal analysis of the articles found a significant reduction in 2004 in papers with future research directions as their main contribution. Also in 2004, the number of articles offering mobile business models grew significantly (Chi-square=25.94, df = 8, p<0.01).

Table 8. Primary contribution of articles

Contribution	N	Percentage
Insights	67*	28.5%
Framework	60*	25.5%
Model	58*	24.7%
Future research	30	12.8%
Application	15	6.4%
Algorithm	2	0.9%
Construct	2	0.9%
Policy	1* (-)	0.4%
Total	235	100%

Note: (\*) The difference from reference distribution is highly significant. Chi-square = 193.49, df = 7, 1-p = >99.99%. Chi-square is calculated with equal expected frequencies for each modality.

## V. CONCLUSIONS AND RECOMMENDATIONS FOR FUTURE M-BUSINESS RESEARCH

In this paper we provide a general picture of past and current research into mobile business through a categorization and statistical analysis of the research literature on mobile business. The initial motivation for this analysis was Anckar, Carlsson and Walden's [2003] statement that much of the m-business literature is descriptive, dominated by intuition-based reasoning and conceptual analysis rather than empirical investigations. The findings above provide evidence that their perception is quite accurate. However this situation is not likely to remain true much longer. The increasing interest of researchers and the rapid growth of the m-business body of knowledge will likely see a reduction in the proportion of conceptual/descriptive analyses in favour of empirically-based studies. Similar patterns of development were also found in the e-business literature, particularly when many researchers aimed to establish the value proposition of business-to-consumer applications.

### DIRECTIONS FOR FUTURE RESEARCH

As the body of research into mobile business grows, the area of research is likely to mature and develop a research tradition of its own. However, our analysis suggests that for this outcome to happen, mobile business researchers should begin to focus their efforts more carefully. In particular, the following areas are promising candidates for future m-business research:

- Research into business and organizational applications. Current research is heavily skewed toward consumer issues, despite evidence suggesting that business and enterprise applications are the biggest growth area. To bridge the gap between theory and practice better, more research into business, government, healthcare, and other industry areas is needed.
- Empirical research. The existing body of research on mobile business involves a disproportionately high level of secondary research studies. Although there is some evidence that the balance is being redressed, more effort should be focused on high-

quality research projects using first-hand, empirical data that lend themselves to the development of theory.

- Theory development. Mobile business is unlikely to become fully recognized as a research area in its own right until it gains a solid theoretical foundation. The IS discipline has a number of key theories, such as the technology acceptance model (TAM), that are cornerstones of IS research. While other theories have been applied to mobile business, it does not yet have theory to call its own.

*Editor's Note:* This article was received on September 7, 2005. It was with the author for four months for two revisions. The paper was published on April 24, 2006

## REFERENCES

- Alavi, M. and P. Carlson (1992). "A Review of MIS Research and Disciplinary Development". *Journal of Management Information Systems* 8: 45-62.
- Ankar, B., C. Carlsson and P. Walden (2003). "Factors affecting consumer adoption decisions and intents in mobile commerce: Empirical insights". *Proceedings of the 16th Bled eCommerce Conference*, Bled, Slovenia.
- AT Kearney (2003). The new mobile mindset. [http://www.atkearney.com/shared\\_res/pdf/Mobinet\\_Monograph\\_S.pdf](http://www.atkearney.com/shared_res/pdf/Mobinet_Monograph_S.pdf), (current 3 December 2004).
- Banker, R. D. and R. J. Kauffman (2004). "The Evolution of Research on Information Systems: A Fiftieth-Year Survey of the Literature in Management Science". *Management Science* 50(3): 281-298.
- Balasubramanian, S.; R. Peterson and S.L. Jarvenpaa (2002). "Exploring the implications of m-commerce for markets and marketing". *Academy of Marketing Science. Journal*, 30(4), 348-361.
- Benbasat, I., D. Goldstein and M. Mead (1997). The case research strategy in studies of information systems. *MIS Quarterly*, 11 (3), 369-386.
- Bharati, P. and P. Tarasewich (2002). "Global perceptions of journals publishing e-commerce research". *Communications of the ACM* Volume, 45 (5), 21-26.
- Clarke, I. (2001). "Emerging value propositions for m-commerce". *Journal of Business Strategies*, 18(2), 133-148.
- Culnan, M.J. and E.B. Swanson (1986). "Research in Management Information Systems, 1980-1984: Points of Work and Reference". *MIS Quarterly*, 10 (3), 288-302.
- Forrester Research (2004). "Trends 2005: Enterprise Mobility". <http://www.forrester.com/Research/Document/Excerpt/0,7211,35606,00.html>, (current 20 March 2005).
- Hirschheim, R.A. (1991) "Information systems epistemology: an historical perspective". in Galliers, R. (Ed.) *Information Systems Research: Issues, Methods, and Practical Guidelines*, pp. 28-60, Blackwell Scientific Publications, Oxford.
- Kaplan, B. and D. Duchon (1988). "Combining qualitative and quantitative methods in information systems research: a case study". *MIS Quarterly*, 12 (4), 570-586.
- Keen, P. (1980). "MIS Research: Reference Disciplines and a Cumulative Tradition". *Proceedings, 1980 ICIS Conference*, Boston.

- MediaLab South Pacific (2003). No wires, no limits: an industry analysis of New Zealand's mobile and fixed wireless sector. <http://www.wirelessdataforum.co.nz/article.php?sid=855&catid=354>, (current 3 December 2003).
- Mylonopoulos, N.A. and V.Theoharakis (2001). "Global perceptions of IS journals". *Communications of the ACM*, 44 (9), 29-33.
- Negroponete, N. (1995). *Being Digital*. Alfred Knopf, New York.
- Scornavacca, E., and S. J. Barnes. (2004) "M-banking services in Japan: A strategic perspective". *International Journal of Mobile Communications*, 2(1), 51-66.
- Sultan, F., & Rohm, A. (2005). The coming era of "brand in the hand" marketing. *MIT Sloan Management Review*, 47(1), 83-90
- Tapscott, D. (1997). *Growing Up Digital*. McGraw-Hill, New York.
- Varshney, U. and R. Vetter (2002). Mobile commerce: framework, applications and networking support. *Journal of Mobile Networks and Applications*, 7(3), 185-198.
- Wareham, J., J. G. Zheng and D. Straub (2005) „Critical themes in electronic commerce research: a meta-analysis". *Journal of Information Technology*. 20, 1-19.
- Yin, R.K. (1984). *Case Study Research: Design and Methods*. Sage Publications, Thousand Oaks.

## ABOUT THE AUTHORS

**Eusebio Scornavacca** is lecturer of Electronic Commerce and Information Systems at the School of Information Management, Victoria University of Wellington, New Zealand. Before moving to Wellington, he spent two years as a researcher at Yokohama National University, Japan. Eusebio published and presented more than fifty papers in conferences and academic journals. He recently received a prestigious award at the MacDiarmid Young Scientist of the Year Awards. His research interests include mobile business, electronic business, electronic surveys and IS teaching methods.

**Stuart J. Barnes** is Chair and Professor of Management at the University of East Anglia, UK. Stuart has been teaching and researching in the information systems field for over a decade. His academic background includes a first class degree in Economics from University College London and a PhD in Business Administration from Manchester Business School. He is the author of five books and more than eighty articles including those in journals such as *Communications of the ACM*, *the International Journal of Electronic Commerce*, *the e-Service Journal*, *Electronic Markets*, and the *Journal of Electronic Commerce Research*.

**Sid Huff** is Professor of Information Systems at the School of Information Management, Victoria University of Wellington, New Zealand. He has been teaching and researching in the information systems field for over 30 years. He received his Ph.D. in Information Systems from MIT. His current research focuses on electronic commerce, IS strategy, and senior management roles in IT. Sid is also the Head of School in the School of Information Management.

Copyright © 2006 by the Association for Information Systems. Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and full citation on the first page. Copyright for components of this work owned by others than the Association for Information Systems must be honored. Abstracting with credit is permitted. To copy otherwise, to republish, to post on servers, or to redistribute to lists requires prior specific permission and/or fee. Request permission to publish from: AIS Administrative Office, P.O. Box 2712 Atlanta, GA, 30301-2712 Attn: Reprints or via e-mail from [ais@aisnet.org](mailto:ais@aisnet.org)



# Communications of the Association for Information Systems

ISSN: 1529-3181

## EDITOR-IN-CHIEF

Joey F. George  
Florida State University

## AIS SENIOR EDITORIAL BOARD

Jane Webster Vice President Publications Queen's University	Joey F. George Editor, CAIS Florida State University	Kalle Lyytinen Editor, JAIS Case Western Reserve University
Edward A. Stohr Editor-at-Large Stevens Inst. of Technology	Blake Ives Editor, Electronic Publications University of Houston	Paul Gray Founding Editor, CAIS Claremont Graduate University

## CAIS ADVISORY BOARD

Gordon Davis University of Minnesota	Ken Kraemer Univ. of Calif. at Irvine	M. Lynne Markus Bentley College	Richard Mason Southern Methodist Univ.
Jay Nunamaker University of Arizona	Henk Sol Delft University	Ralph Sprague University of Hawaii	Hugh J. Watson University of Georgia

## CAIS SENIOR EDITORS

Steve Alter U. of San Francisco	Chris Holland Manchester Bus. School	Jerry Luftman Stevens Inst. of Technology
------------------------------------	---	--

## CAIS EDITORIAL BOARD

Erran Carmel American University	Fred Davis Uof Arkansas, Fayetteville	Gurpreet Dhillon Virginia Commonwealth U	Evan Duggan U of Alabama
Ali Farhoomand University of Hong Kong	Jane Fedorowicz Bentley College	Robert L. Glass Computing Trends	Sy Goodman Ga. Inst. of Technology
Ake Gronlund University of Umea	Ruth Guthrie California State Univ.	Alan Hevner Univ. of South Florida	Juhani Iivari Univ. of Oulu
K.D. Joshi Washington St Univ.	Michel Kalika U. of Paris Dauphine	Jae-Nam Lee Korea University	Claudia Loebbecke University of Cologne
Sal March Vanderbilt University	Don McCubbrey University of Denver	Michael Myers University of Auckland	Dan Power University of No. Iowa
Kelley Rainer Auburn University	Paul Tallon Boston College	Thompson Teo Natl. U. of Singapore	Craig Tyran W Washington Univ.
Upkar Varshney Georgia State Univ.	Chelley Vician Michigan Tech Univ.	Doug Vogel City Univ. of Hong Kong	Rolf Wigand U. Arkansas, Little Rock
Vance Wilson U. Wisconsin, Milwaukee	Peter Wolcott U. of Nebraska-Omaha	Ping Zhang Syracuse University	

## DEPARTMENTS

Global Diffusion of the Internet. Editors: Peter Wolcott and Sy Goodman	Information Technology and Systems. Editors: Alan Hevner and Sal March
Papers in French Editor: Michel Kalika	Information Systems and Healthcare Editor: Vance Wilson

## ADMINISTRATIVE PERSONNEL

Eph McLean AIS, Executive Director Georgia State University	Reagan Ramsower Publisher, CAIS Baylor University	Chris Furner CAIS Managing Editor Florida State Univ.	Cheri Paradice CAIS Copyeditor Tallahassee, FL
---	---	---	--