THE JOURNAL OF INFORMATION TECHNOLOGY & TOURISM: 
A CONTENT ANALYSIS OF THE PAST 10 YEARS

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This article performs a content analysis on the first 10 volumes of Information Technology & Tourism. A total of 144 articles are classified by six different categories. To identify trends and patterns in themes, the analysis is split into various periods. The objectives of this study include taking a look at the history of the journal to see what progress the scientific information technology and tourism community is making in their field. The data support the authors’ early impressions of ITT as a primarily interdisciplinary journal dealing largely with human–computer interaction–related issues with an increasing number of articles dealing with business models recently. In addition, the distribution of articles by countries suggests that ITT has become a truly international journal reflecting studies from all parts of the world.

Key words: Information Technology & Tourism; Content analysis; Trends

Introduction

The purpose of Information Technology & Tourism (ITT) is to foster development of an international research community in tourism, travel, and hospitality, to enrich the related knowledge base, and to raise awareness for a new research field. Considering that the field is multi-disciplinary by nature, it is necessary to obtain a coherent picture and to provide new insights. Thus, an important objective of the journal is to offer academia a platform for exchanging findings that cross scientific borders so as to create a coherent and purposeful body of knowledge about IT and tourism (including travel and hospitality). ITTA deals with e-tourism, which we define as the analysis, design, implementation, and application of information technology in general and e-commerce solutions in particular in the travel and tourism industry, as well as the analysis (and also conceptual design) of the respective technical and economic processes and market structures. ITT has been in existence for 10 years and during this decade the truly transformational effect of communications technologies has given scope for the development of a wide range of new tools and ser-
vices that facilitate global interaction between users around the world. Importantly, research activity on information technology and tourism now has become mainstream as IT and tourism articles are now appearing in the leading tourism research journals.

This introductory article of Volume 12, No. 1 provides a content analysis of the articles published in the journal from Volume 1 to 10 (from 1998 to 2008) based on three questions that relate to the goals of the journal: (1) What are the journal’s geographic and industry foci? (2) What subject themes have been examined and how did the themes evolve over time? (3) What research methods have been employed? Content analysis is a research technique for making systematic and objective analysis of communications (Babbie, 2007). The technique has been applied to previous similar studies (e.g., Baloglu & Assante, 1999; Xiao & Smith, 2006). A total of 144 papers were reviewed; book reviews, reports or comments were not included in the analysis. The articles included in this analysis were read and coded on the basis of six categories: (1) volume/number/year; (2) location where the study was conducted, not the location of authors; (3) nature of the article (e.g., empirical, conceptual, or system design); (4) study themes; (5) industry focus (e.g., lodging, travel agents, airline, etc.); and (6) methodology (e.g., study methods, statistic techniques). These six categories are consistent with other analyses of the tourism field (e.g., Baloglu & Assante, 1999; Xiao & Smith, 2006). In order to identify the trends and patterns that change through time, the analysis was split into five 2-year periods: 1998–2000, 2001–2002, 2003–2004, 2005–2006, and 2007–2008.

The study themes were based on Buhalas and Law (2008), wherein they provided a comprehensive summary of the themes studied in IT and tourism over the past 20 years; the subject index from Annals of Tourism Research also was referenced. The so identified study themes cover three categories: consumer and demand dimension; technological implementation; and industry and business functions. In each category, there are around 10 subthemes that describe the themes of the arti-

![Figure 1. Study locations from 1998 to 2008.](image-url)
Figure 2. Industry focus from 1998 to 2008.

Figure 3. Study themes from 1998 to 2008.
articles specifically. Each article was reviewed and multiple codes were applied if the number of themes appeared in the article was over one.

The research methodology used in each of the articles refers to the methods and statistical techniques employed in the studies. The categories of methods (e.g., survey, interview, etc.) were adopted from Babbie (2007) and Buhalıs and Law (2008). In the articles’ review process, the emerging methods have been classified into

- formal or logical (deductive mathematical) approaches,
- empirical quantitative approach (statistics),
- empirical qualitative approach (case studies, focus groups, etc.),
- conceptual designs, and
- engineering and implementation issues.

The studies involving statistical techniques have been further categorized as descriptive, basic, sophisticated statistics, and no statistics. The category of basic statistics refers to techniques such as t-test, z-test, and chi-square. The category of sophisticated statistics refers to techniques such as ANOVA, SEM, Path analysis, etc.

Scope of the Studies
Published in ITT 1998–2008

One of the stated goals for ITT was to foster development of an international research community in which academia from different countries exchange their findings on the diversified sectors of tourism. To evaluate whether ITT had met its goals, we examined the locations of the studies and industrial contexts of the studies. Since its inception, studies covering seven regions have been published in the journal. Figure 1 shows that the top three contributing regions represented in the studies include Europe (75 articles, 52%), US and Canada (25 articles, 17%), and Australia (16 articles, 11%). Among the Europeans, studies conducted by scholars from the UK represent around one fifth of the studies (12 articles). There were

![Figure 4. Study theme: Customer and demand.](image-url)
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![Bar chart showing technology implementation topics]

Figure 5. Study theme: Technology implementation.

a few studies conducted by scholars from Asia, Mediterranean area and Middle East, South America, and Africa. Six percent of the studies are conducted by scholars in multiple countries and across two or three regions.

The studies published in ITT covered a number of different sectors/industries in tourism; 56 studies considered the influence of information technology in 11 different industries. Figure 2 shows that the top three most frequently studied industries (or organizations) were lodging (18 articles), destination marketing organization (DMOs) (11 articles), and travel operators/agents (10 articles). However, the most popular focus was the overall tourism industry. Over half of the total published papers (88 articles, 61%) were about the impact of information technology on the overall tourism industry.

**Study Themes**

There are three broad categories or themes among the articles published in ITT. Each category represents around 45% of the total articles as some articles cover more than one theme (see Fig. 3).

The category of consumer and demand refers to those studies focusing on customers' response to information technology. There were 61 articles in this category (Fig. 4). Two subthemes appeared most frequently: traveler’s behavior and user’s perception. In this category, over half of articles (56%) were about these two themes. Information search and recommender system were the third popular themes, which represented 15% of the total articles in this category.

The category of technology implementation refers to those studies focusing on the design and
Figure 6. Study theme: Industry & Business functions.

Figure 7. Nature of the articles.
Figure 8. Methodology used.

Figure 9. Statistical techniques used.
Table 1
Number of Articles in Five Periods

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implementation of information technology. There were 67 articles in this category (Fig. 5). The top three themes represented in this category included website design/evaluation (36%), interoperability and ontology building (19%), and mobile technology (15%). Following the top three themes, two themes appeared more than the rest of themes: multimedia (9%) and e-commerce technology (8%).

The category of industry and business functions refers to the studies that examined the impact and implementation of information technology at the organizational level. There were 68 articles in this category (Fig. 6). Marketing comprised the greatest number of articles here, which accounted for 19% of 68 articles. The themes ranked second in terms of frequency were distribution/sale (13%) and service (13%). The themes ranked third in terms of frequency were business models (8%), management information needs (8%), and IT adoption (8%).

Methodological Approach

In the 144 articles published from 1998 to 2008, there were 92 articles, or 64% of total contributions, which used an empirical approach (Fig. 7). Twenty-eight articles or 19% of the total contributions focused on system design from the technical perspective. Eleven articles or 8% of total contributions were conceptual articles that focused on the development of definitions and the construction of theoretical framework. Last, 13 articles or 9% of total contributions covered both concepts development and empirical testing.

Figure 8 provides the results of the content analysis focusing on the research methods used.

*Figure 10.* Frequency of study locations over five periods.
Of all 144 articles, the results of a survey (33%) were reported most frequently used. This was followed by secondary data analysis (24%), system design (18%), interview (10%), experiment (6%), and data mining (4%). Around 6% of articles employed case study, modeling, focus group, and protocol analysis.

As shown in Figure 9, the statistic most frequently used in ITT was frequency (35.4%), followed by sophisticated statistics (22.2%), such as logistic regression analysis, ANOVA, structural equation modeling (SEM), factor analysis, path analysis, and hierarchical regression, and basic statistics (6%) such as t-test, z-test, and chi-square. Thirty-six percent of studies did not employ any kind of statistics because the focuses of these articles were system design and concepts development.

Trends Changing Over Five Periods


**Locations of the Studies**

In the first three periods (1998–2004, 7 years), since the inception of the journal, the studies conducted in Europe played a dominant role in ITT (Fig. 10). The proportion of studies conducted in Europe was around 60% in each of the first three periods. The studies conducted in the US and Australia ranked second and third in terms of the contribution in the startup phase of the journal. There were 10 articles based on the studies in the US and 9 articles from Australia from 1998 to 2004. In the recent two periods (2005–2006 and 2007–2008), the proportion of studies conducted in Europe decreased to 41% and 38%, respectively, while a noticeable increase was observed in the studies conducted in the US, Asia, and Mediterranean Area and Middle East. In the period of 2005–2006, the proportion of studies in Asia increased from 2% averagely in the first three periods to 11%. The proportion of studies in Asia
Figure 12. Changes in study theme: Consumer & demand.

Figure 13. Changes in study theme: Technology implementation.
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Figure 14. Changes in study theme: Industry & business functions.

Figure 15. Changes in methodology.
continuously increased to 14% in the period of 2007–2008. In the period of 2005–2006, the proportion of studies in Mediterranean Area and Middle East increased from 6% on average in the first three periods to 15%. In the period of 2007–2008, the proportion of studies in the US increased from 15% in 2005–2006 to 34%.

**Industry Focus of the Studies**

The proportion of studies focused on the lodging industry and travel agents/operators decreased over the past 10 years, particularly in recent 2 years (2007–2008), while an increase was observed in the studies focusing on destination marketing organization (DMOs) from 2005 to 2008 (Fig. 11). There were a total of 12 industries (including the general concept of tourism industry) that were studied in the past 10 years. The industries covered in each period were changing over time. In the first two periods, six or five industries were studied. In 2003–2004, the number of industries discussed was expanded to 10. Since 2005, the number of industries discussed in ITT has decreased to five in years 2007 and 2008.

**Study Theme: Consumer and Demand**

There were no continuous changes in the five periods for each subtheme in the category of consumer and demand. However, the popularity and coverage of themes in each period were different. Figure 12 shows that user’s perception was the most popular one in two periods: 2005–2006 and 2007–2008. In the periods of 2001–2002 and 2003–2004, the most popular topic was traveler’s behavior. Virtual community and the use of the Internet were emerging in the recent two periods. The themes discussed in the first two periods were limited, while the themes in the recent three periods were more diversified. In the recent 6 years (2001–2008), more articles (53 out of 61 articles) related with consumer and demand were published in ITT compared to the ones (8 out of 61 articles) in the first 5 years (1998–2000).

**Study Theme: Technology Implementation**

Search engine design was the new theme that emerged in 2008. The articles on interoperability and ontology building and e-commerce technology decreased sharply in recent 4 years (Fig. 13). Web design/Evaluation, as the most popular theme in this category, was the only theme that appeared in five periods. Multimedia, interoperability and ontology building, and mobile technology were three themes that appeared in four periods. In terms of the coverage of the themes in each period, the period 2003–2004 covered the most themes (9 out of 10 themes) in this category. There were 4 or 5 themes covered in each of the other four periods. The total number of articles related with technology implementation in each period kept decreasing in recent 6 years.

**Study Theme: Industry and Business Functions**

In the recent past two years (2007–2008), the theme “business model” appeared as the most frequent theme in this category (Fig. 14). Studies related to benchmarking and strategy management reappeared in the ITT after the silence of several years. The studies related with distribution/sales and service decreased in recent 4 years. Marketing, distribution/sales, and service were the themes that appeared in every period. Management information needs was only absent in the issues from 2001–2002. Overall, most articles related to industry and business functions were published in the periods of 1998–2000 (21 out of 68 articles) and 2003–2004 (16 out of 68 articles), while the 37 articles published in these two periods covered 11 themes out of total 12 themes in this category.

**Research Methods**

In the most recent period (2007–2008), the most frequently used method was survey, followed by secondary data, interview, data mining, system design, case study, and experiment (Fig. 15). The number of studies using data mining increased from a total of three in the first 8 years to four in the past 2 years. In recent three periods (from 2003–2008), a noticeable increase was observed in studies that employed survey, while a decrease was observed in the studies that employed secondary data and/or system design. Overall, survey, secondary data, and system design were the meth-
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Summary

This article performed a content analysis on the first 10 volumes of the journal Information Technology & Tourism, which was the first research journal in this interdisciplinary field founded in 1998. The analysis of 144 articles, which were classified into six different categories, revealed that the journal has met its expectations as a leading journal dealing with the analysis, design, implementation, and application of information communication technology and e-commerce solutions in the travel and tourism industry.

The study looked at the history of the journal to identify the major trends and patterns of research topics. The numbers of regions treated by articles in the journal reflect the penetration pattern of the web, which originally started in the US and in Europe and later spread over all continents. In the early beginning of the journal the vast majority of articles were dealing with design and implementation issues from a technological perspective. More recently, studies investigating the users’ requirements, their perceptions, and actual behavior when using information communication technologies have become more important and frequent. Generally speaking, the social science dimension of the journal became more important, also attracting an increasing number of authors with this academic background. In addition, studies investigating the role of technology for individual companies increased and research questions related to the development and evaluation of business models for new IT-based services have been investigated.

Assuming that the importance of social networking on the traveler’s decision making will continue to increase, future research is expected in areas related to service innovation and network analysis. The role of search engines and new forms of search engine marketing will not only raise new questions in tourism marketing but also stimulate ethical questions concerning privacy issues and the dominance of some search engine providers. Moreover, it can be anticipated that the continuous development of new devices and the trend towards ambient technologies will motivate future researchers to cover questions related to the adoption of these technologies by travelers. It must be expected that the trend towards more consumer-oriented articles will continue; however, they will also be accompanied by more technology-related articles, because we will see further technology waves in the future.

Biographical Notes

Dan Wang is a Ph.D./B.A. student in the School of Tourism and Hospitality Management and the Fox School of Business and Management at Temple University. She is also a research assistant at the National Laboratory for Tourism & eCommerce. Her research interests include travelers’ online planning behavior, marketing strategies on the Internet, and strategic management of tourism marketing organizations.

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Karl Wöber is a Professor and Founding President of MODUL University Vienna and is the former editor of Information Technology & Tourism. Karl obtained his Ph.D. from the Vienna University of Economics and Business where he became Associate Professor in 2000. His main research activities are in the fields of decision support systems in tourism and hospitality marketing and strategic planning. He has been Technical Advisor to European
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References


