

## INFORMATION AND COMMUNICATION TECHNOLOGY PRACTICES AND HOTEL COMPETITIVENESS

Anamaria PETRE<sup>1</sup>  
Roxana STEGEREAN<sup>2</sup>  
Corina GAVREA<sup>3</sup>

---

### ABSTRACT

*The competitiveness and performance of hotels depends on their innovation activity, that's why managers have to focus on the necessity of implementing and integrating information and communication technologies in their businesses.*

*The purpose of this paper is to compare the managerial practices focused on information and communication technology in two counties of Romania: Cluj and Braşov. This article presents the findings of a survey among 95 hotels and illustrates that, managers from Braşov, unlike those from Cluj, pay more attention to customer orientation. Thus, they have more opportunities to increase their performance and competitive advantage.*

**KEYWORDS:** *tourism, hotel, information and communication technology, competitiveness, innovation.*

**JEL CLASSIFICATION:** *M15*

---

### 1. INTRODUCTION

Delivery of hotel services is becoming increasingly difficult due to globalization, on the one hand and due to increasing demands of tourists, on the other. Thus hotel managers need to target their efforts to the development of attractive tourist services in respect with originality, diversity, accessibility, quality and price. Within this context, the implementation and use of information and communication technology (ICT) play a major role and thus, practices oriented towards this direction should be a constant concern of hotel management to improve performance, whether this performance is understood in terms of excellent financial indicators, valuable human resources, excellent reputation, recognized brand or high satisfaction among tourists. It is therefore necessary a depth analysis of management practices aimed to develop innovations based on information and communication technology, in order to identify those practices with better results for the performance and hotel's competitiveness.

### 2. LITERATURE REVIEW

It is widely recognized that innovation is an effective way of obtaining a competitive advantage with beneficial effects on the hotel performance and tourist satisfaction. In our approach to analyze

---

<sup>1</sup> Babeş-Bolyai University, Faculty of Economics and Business Administration, Cluj-Napoca, Romania, anamaria.petre@econ.ubbcluj.ro

<sup>2</sup> Babeş-Bolyai University, Faculty of Economics and Business Administration, Cluj-Napoca, Romania, roxana.stegerean@econ.ubbcluj.ro

<sup>3</sup> Babeş-Bolyai University, Faculty of Economics and Business Administration, Cluj-Napoca, Romania, corina.gavrea@econ.ubbcluj.ro

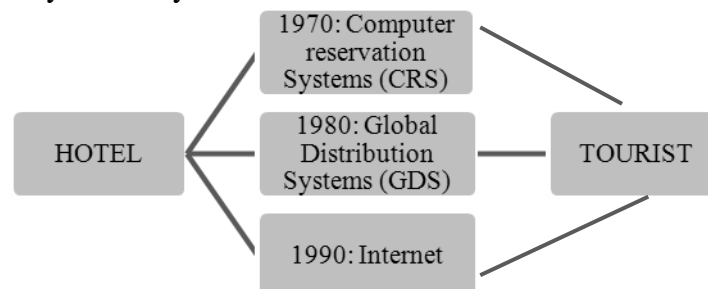
the concept of innovation in hotels, we concluded that there is no precise and consensual definition which brings numerous interpretations. Moreover, this field is not sufficiently researched (Ottenbacher and Gnoth, 2005; Rodgers, 2007). Ottenbacher and Gnoth (2005:206) stated that hotel managers need to take advantage of "intuition, assumption and experience" when trying to achieve innovation. Although at the level of academic research, innovation is not sufficiently analyzed, in practice it has evolved a lot (Hjalager 2010:1) due to the various benefits. In hotel practice, an important role is played by ICT. This is considered to be an important strategic resource for hotels which could determine their competitiveness.

Also, many current activities cannot be carried without the support of ICT - online reservation systems, global distribution systems, video brochures, electronic business management systems. Buhalis and Law (2008:610) stated that tourism and information technology have been going "hand in hand" for many years.

Moreover, Romanian legislation (Ordinul Nr.1296, 15 April 2010 approving the methodological norms regarding the classification of tourism accommodation structures -<http://www.mdrt.ro>) requires that 3, 4 and 5 star hotels have to provide Internet access, and on the other hand, all hotels, no matter their classification is, they must offer Front office fax service. As noted, the technological component plays a decisive role.

In general, information and communication technology represents a synthesis of electronic, computing and telecommunication technologies that enables data processing and communication. It facilitates the efficiency of handling information and reduces the cost of information circulation, increases the speed of information transfer and extraction and, also the customer involvement in transactions' control (Buhalis and Law, 2008).

To better understand the premises for the development of innovations based on information and technology, it is necessary to briefly introduce the ICT evolution in the hotel sector:



**Figure 1. Information and communication technology evolution in hotel sector**

*Source:* adapted from Williams, 2003:78

1. Computer reservation systems (CRS), which were originally used by airlines to deal, on one hand, with the increasing volume of tourists, and on the other, with adjacent operational problems, were among the first global application of ICT. Soon after, many hotels (and other tourist establishments) began to use these applications.

Evolving, computerized reservation systems have been assimilated by operation systems, which allowed front office staff to handle hotel room situation (Page&Connell, 2006:113).

Until now, many computerized reservation applications that can be tailored to the specific requirements of hotels have been developed; these applications automate the reservation, tourist arriving information come directly into operation system, without any additional manual process. The result can be a remarkable reduction of communication costs (telephone, fax), supplies (internal and external circulation papers etc.), working time and labor expenses for performing specific operations.

With the development of hotel chains, computerized reservation systems have evolved and developed in the central reservation offices (CRO) serving all hotels belonging to a chain. The main problem here is the tendency to believe that tourists will get more favorable rates if they wanted to call the hotel directly to make a reservation. This resulted in the creation of the Property

Management System (PMS) which eliminates the problem stated above. There is a bidirectional communication between the CRO and PMS, so tourists can book using any of the two platforms

2. In the 1980s, CRS evolved into GDS, allowing hotels to conduct their business online (Williams, 2003:78) and make it available to all service providers. Thus, tourists' demands were met in terms of their ability to compare information and opportunity to have a wider range of choice, because these systems can handle 17.000 queries per second (interactivetravel.org).

Today, global distribution systems facilitates and manages globally the expansion of companies and tourist destinations, enabling hotels to control, promote and sell their products and services worldwide. GDS allows access to multiple systems operated by car rental companies, shipping companies, auto transport and rail networks, hotels/chains; provide important information for tourists (about destination, weather, prices, services, etc) and help issuing travelers checks, currency exchange, credit cards, insurance; have automated many administrative functions of hotels (Kracht and Wang, 2010:738).

Over time, a series of global distribution systems have been developed, but currently the four major GDS are: Amadeus Group, Sabre, Galileo and Worldspan (Galileo and Worldspan systems are owned by a single company called Travelport).

Therefore, CRS and GDS are the main electronic interface on the hotel market, revolutionizing the supply and distribution of tourism products and services, changing the way hotels were managed to that moment (Buhalis&Law, 2008), and the trend is evolving.

3. Today, tourism is one of the most important applications on the World Wide Web, with a growing number of users who want to find tourist information, plan or purchase travel services through the Internet. However, the Internet changes the competitiveness of hotels on world market and reduces the time or space constraints regarding the delivery of tourism products and services (Buhalis and Law, 2008).

The use of internet by hotels has the following advantages:

a) Internet penetration (relative to population) in some European countries whose inhabitants can become tourists of our country is favorable, as shown in table below:

**Table 1. Internet penetration in some European countries-2011**

Country	Bulgaria	Croatia	France	Germany	Hungary	Spain	Romania
<b>Penetration (% Population)</b>	47.9	50.1	69.5	79.9	61.9	62.2	35.5

Source: Internetworldstats

b) Increases performance by: reducing distribution costs, increasing sales, creating tourists' loyalty by maintaining a contact and by easy access to any market (Sigala et al., 2001).

c) Facilitates five types of flows of: information, negotiation, additional services, transactions and promotion (Lovelock and Wirtz, 2007:108). We believe that the flow of information is extremely important because, according to studies, the probability of hotels implementing innovations directly depends on the quantity, quality and value of the information it holds (Wang and Qualls, 2007:569). In this context, tourism services distribution has three deployment options (Balaure et al., 2005:337):

- creating own website;
- creating own website within a specialized portal (Ex: Booking.com, Lastminute.com, Travelocity.com, Expedia.com etc.);
- integration in one of the major online distribution systems independently or as affiliate partner.

A topic often discussed in the literature concerns the conditions under which employees can cope using new ICT in service delivery. We will answer this question by bringing into question the opinions of specialists. Warschauer (2004) stated that the most important thing in the existence of new information and communication technologies within the hotel facilities is not related to the

implementation and use of hardware and software tools, but the ability of employees to use them in an efficient and useful way, to cope with changes (Wang and Qualls, 2007:565). However, Ottenbacher, Gnoth and Jones (2006) stated that in many cases, employees have the important role of differentiation, in obtaining a competitive advantage, even though hotels have the same type of information and communication technologies, and only Thus, an extremely important activity is training employees how who must use these technologies when providing tourist services. However, researches show that for the success of such innovations, employees should have an open attitude, be positive, involved and focused on solving tasks (Walsh et al., 2003: 798). Some empirical studies conclude that the implementation and use of ICT is made to a higher extent for improve employees' productivity and increase revenues in hotels, and to a lower extent to improve the quality of tourist services (Sundbo et al., 2007). We disagree with this point of view and believe that both goals are pursued with equal importance by hotel managers in Romania, especially considering that not all innovations are increasing the productivity of employees (Orfila-Sintes and Mattsson, 2009:385).

### **3. RESEARCH METHODOLOGY**

#### **3.1. Research population and sample**

In this study, the sample population is represented by 3, 4 and 5 star hotels from Braşov and Cluj County, Romania. Our reason of choosing only hotels with a minimum of three star, refer to the situation that 1 or 2 star hotels do not have the financial resources to invest in the acquisition and implementation of ICT. After the final adjustment of the sample, 35 questionnaires for Cluj county and 60 questionnaires for Braşov county were validated.

#### **3.2. Data gathering**

The research method used in this study was the survey through a questionnaire aimed at identifying the management practices oriented on information and communication technology, so that meaningful comparisons between management approaches of the hotels in Cluj and Braşov can be made. The questionnaires were filled in online, between January and March 2012.

The questionnaire includes opinion questions by which respondents were asked to describe the degree of importance of management practices on information and communication technology. There are closed-ended questions, using a Likert scale from 1 (not important) to 5 (very important). The last part of the questionnaire contains factual questions to capture a range of data to identify the respondent, and the hotels he/she manages.

#### **3.3. Data analysis and findings**

Regarding the hotel ratings we can observe that in both counties, Cluj and Braşov, the 3-star hotels have the largest share (65.7%-Cluj and 76.7%-Braşov) followed by the 4-star hotels (28.6%-Cluj and 20.0%-Braşov) and the lowest weights were recorded by 5-star hotels (5.7%-Cluj and 3.3 %-Braşov).

It should be noted, that this trend characterizes not only the two studied counties, but also the whole country:

- in Cluj county, 3-star hotels have a share of 43.5%, 4-star hotels have a share of 30.4% and 5-star ones, 6.5%;
- in Braşov county, 3-star hotels have a share of 58.3%, 4-star hotels have a share of 20.4% and 5-star ones, 3.9%;
- across the country, the share of the 3-star hotels is 42% and the share of 5-star hotels is 1.8%.

Regarding the types of tourism that characterizes the hotels surveyed, we can observe that there are differences between the two counties studied:

- regarding hotels in Cluj county, the top three market segments are: business tourists counting for 26%, tourists passing through the area, with a percentage of 22% and leisure tourists interested in area's attractions registered a share of 18%;
- in Brasov county hotels, the three main market segments are: leisure tourists interested in area's attractions (29%), business tourists (18%) and tourists passing through the area (13%);
- also note that the weights recorded by to other segments represented by athletes, musicians, artists, representatives of state institutions and people who practice medical tourism are equal.

The responses of hotel managers are presented in the table below:

**Table 2. Descriptive analysis of questionnaire items-Cluj**

<b>Management practices regarding ICT</b>	<b>Mean</b>	<b>Standard deviation</b>
The hotel is connected to Global Distribution Systems (Amadeus, Galileo, Worldspan and Sabre)	2.14	1.438
A management software that integrates all operations of the hotel is used	4.20	1.431
The hotel website presents the services offered in a suggestive way (virtual tours, video brochures, images and panoramas)	4.03	1.445
Hotel presence in the online environment helps attract new customers and retain existing ones	4.26	1.197
Hotel management makes efforts to increase online booking	4.06	1.187
Hotel management takes into account the feedback of tourists sent via hotel website	4.29	1.126
A Customer Relationship Management software is used in order to personalize the customer service	3.06	1.494

Source: authors' calculations

As shown in the above table, in Cluj, hotel managers give the highest importance to practices aimed at analyzing tourists' feedback transmitted via hotel website (4.29). In addition to the benefits of this opportunity (rapidly identify and remedy adverse aspects of tourism services, enrichment of services considered important by customers) some disadvantages referring to the fact that there can be shared negative impressions that could influence opinion of potential tourists can arise.

High importance (4.26) is also given to management practices aimed at attracting new customers and retaining existing ones through the online media. The online presence of hotel not only supports promotional activities and information retention, but also creates opportunities to adapt services to the specific tourists' requirements.

The mean of 4.20 obtained by managerial practices related to the use of management software that integrates all operations of the hotel is a good thing because is a meaningful way to increases hotel performance.

The less importance is given to management practices related to exploiting the advantages of connection to Global Distribution Systems; this issue emphasizes that, in the analyzed counties, many of the sample hotels haven't invested in implementing these technologies. This can be justified by the fact that 91.4% of the Cluj hotels included in the sample are not franchised, nor belong to an international hotel chain. Thus, most of them don't have the capability to compete in the global world, yet. This trend doesn't characterize European tourism market, where we can



observe the opposite situation: the vast majority of the hotels is franchised or belongs to an international chain.

We conducted the same descriptive analysis for Braşov hotels, as shown below:

**Table 3. Descriptive analysis of questionnaire items-Braşov**

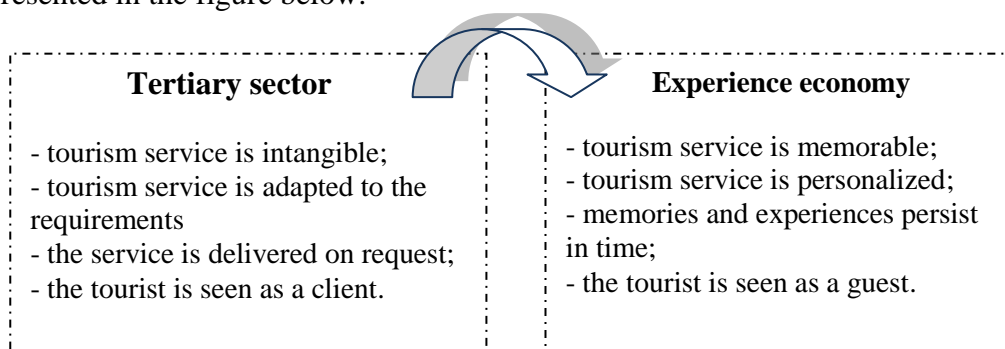
Management practices regarding ICT	Mean	Standard deviation
The hotel is connected to the Global Distribution Systems (Amadeus, Galileo, Worldspan and Sabre)	1.42	1.046
A management software that integrates all operations of the hotel is used	3.38	1.329
The hotel website presents the services offer in a suggestive way (virtual tours, video brochures, images and panoramas)	3.67	1.217
Hotel presence in the online environment helps attract new customers and retain existing ones	4.08	1.139
Hotel management makes efforts to increase online booking	3.93	1.247
Hotel management takes into account the feedback of tourists sent via hotel website	3.43	1.345
A Customer Relationship Management software is used in order to personalize customer service	3.98	1.186

Source: authors' calculations

As shown in the above table, the first three management practices that managers of Braşov hotels give the highest importance are: efforts to attract new customers and retain the existing ones through the online environment (4.08), the use of Customer Relationship Management software to personalize customer service (3.98) and increase online reservations (3.93).

We can observe a direct link between the three management approaches of hotel managers from Braşov, all emphasizing greater customer orientation than the hotel managers from Cluj, with an accent on customization and adaptation of services to the needs of tourists.

The interest of hotel managers from Braşov for achieving these objectives emphasizes that they understood that tourists do not want simple services, but authentic experiences, memorable, highly customizable. This management approach views tourism as a sector of "experience economy", but not as tertiary sector. It is considered that this approach is far less in depth analyzed (Larsen, 2007). The main difference between tourist services belonging to tertiary sector and experience economy are presented in the figure below:



**Figure 2. Tourism: tertiary sector or experience economy?**

Source: adapted after Boyer and Verma, 2010:81)

As in the case of Cluj hotels, the lowest importance is given to management practices related to exploiting the advantages of connection to Global Distribution Systems. The justification is the same: 96.7% of the Braşov hotels included in the sample are not franchised nor part of a chain, resulting in smaller globalization capacities and needs due on the one hand to an unknown brand in the world, and on the other hand to large investments for the implementation of such technologies.

#### 4. CONCLUSIONS

In a strong competitive environment the services in the hotel industry are designed and delivered not just for the customer satisfaction, but for their loyalty. In order to increase the loyalty management has to focus on converting the service into a memorable experience. Thus, it is not enough to have the traditional approach to the delivery process but the hotels need to establish objectives in order to gain multiple competitive dimensions. With their support, a memorable experience could take place.

The findings coming out from the comparative study Cluj-Braşov county demonstrates the medium competition level on the Romanian tourism market. In such a market, the accessibility to ITC is a similar one. The Brasov county is one of the most competitive area in Romania and our study reveals this position. Managers have a different perception about the importance of attracting and retaining the tourists. It is obvious that the hotels in this county are facing a stronger competition and they are closer to the experience economy and to the loyalty issue, also. On the other hand, they don't have a big financial potential and due to the average market, even though they are awake about the opportunity of developing the memorable experience, they don't have de capability to sustain it.

#### REFERENCES

- Balaure, V., Cătoi, I., Vegheş, C. (2005). *Marketing turistic*, Editura Uranus, Bucureşti
- Boyer, K., Verma, R. (2010). *Operations and Supply Chain Management for the 21st Century*, First Edition, South-Western, Cengage Learning, USA.
- Buhalis, D., Law, R. (2008). Progress in information technology and tourism management: 20 years on and 10 years after the internet—the state of eTourism research, *Tourism Management*, Volume 29, Issue 4, 609–623.
- Hjalager, A. M. (2010). A review of innovation research in tourism, *Tourism Management*, Vol. 31, No. 1, 1-12.
- Kracht, J., Wang, Y. (2010). Examining the tourism distribution channel: evolution and transformation, *International Journal of Contemporary Hospitality Management*, Volume 22, Issue 5, pp 736 – 757
- Larsen, S. (2007). Aspects of a Psychology of the Tourist Experience, *Journal of Hospitality and Tourism*, Volume 7, Issue 1, 7 – 18.
- Lovelock, C., Wirtz, J. (2007). *Services Marketing-People, Technology, Strategy*, 6<sup>th</sup> Edition, Pearson Prentice Hall, USA
- Orfila-Sintes, F., Mattsson, J. (2009). Innovation behavior in the hotel industry, *Omega*, Volume 37, Issue 2, 380 – 394.
- Ottensbacher, M., Gnoth, J., Jones, P. (2006). Identifying determinants of success in development of new high-contact services: Insight from the hospitality industry, *International Journal of Service Industry Management*, Volume 17, Issue 3, 344-363.

- Ottenbacher, M., C., Gnoth, J. (2005). How to develop successful hospitality innovation, *Cornell Hotel and Restaurant Administration Quarterly*, Volume 46, Issue 2, 205–222.
- Page, S, Connell, J. (2006). *Tourism a Modern Synthesis*, Second Edition, Thomson Learning
- Rodgers, S. (2007). Innovation in food service technology and its strategic role, *International Journal of Hospitality Management*, Volume 26, Issue 4, 899–912.
- Sigala, M., Lockwood, A., Jones, P. (2001). Strategic implementation and IT: gaining competitive advantage from the hotel reservations process, *International Journal of Contemporary Hospitality Management*, Volume 13, Issue 7, 364–371.
- Sundbo, J., Orfila-Sintes, F., Sørensen, F. (2007). The innovative behaviour of tourism firms – comparative studies of Denmark and Spain, *Research Policy*, Volume 36, Issue 1, 88–106.
- Walsh, K., Enz, C., A., Siguaw, J., A. (2003). Innovations in Hospitality Human Resources: Cases from de U.S. Lodging Industry în *Tourism in Managing employee attitudes and behaviours in the tourism and hospitality industry*, Editor Kusluvan, S, Nova Science Publishers, New York.
- Wang, Y., Qualls, W. (2007). Towards a theoretical model of technology adoption in hospitality organizations, *International Journal of Hospitality Management*, Volume 26, Issue 3, 560–573.
- Warschauer, M. (2004). *Technology and Social Inclusion. Rethinking the Digital Divide*, MIT Press, Cambridge.
- Williams, S (2003), *Tourism & Recreation*, Pearson Education, UK.
- <http://www.internetworldstats.com/stats4.htm> accessed at 28.03.2012.
- [http://www.interactivetravel.org/IndustryBackground/Attachments/GDS\\_Fact\\_Sheet.pdf](http://www.interactivetravel.org/IndustryBackground/Attachments/GDS_Fact_Sheet.pdf) accessed 12.01.2012
- <http://www.mdrt.ro>