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## Ilia Violeta Cázares-Garrido

Universidad Autónoma de Querétaro

violetacg@yahoo.com

# Complexity in the Adoption of Technology in Tourism Services

**Abstract:** The paper focuses on the analysis of the organizations in the tourism sector, in particular, the travel agencies in the state of Queretaro, México, through a modern and flexible perspective that comes from the Information and Communications Technologies (ICT) and it reviews how these agencies have expanded as organizations and what have been the effects on their processes. The investigation is based on a qualitative study that allows to realize the lack of awareness of the owners and companies' managers on the influence of technology in their businesses. They are aware of the two main advantages that they have in order to compete with online businesses: first, the information they provide first hand to their customers and secondly, the safety it gives to their clients by purchasing at an established agency. On the other hand, they are not aware of the low financial investment (such as in the use of social networking) and the high acceptance of technology by consumers. As a result it is of extreme importance to provide training that allows the opportunity for change, which is increasingly necessary due to the overwhelming competition from online agencies.

**Key words:** Information Technologies, Strategy and Travel Agency

## 1. Introduction

Information and Communications Technologies (ICT) continue to affect society by changing both consumer habits of interaction as well as their purchasing habits due to the fact that because of the Internet people have access to information of companies around the world and have instant communication allowing them to participate actively in the network. In the tourism sector, consumers interact in a dynamic manner by making comments of happenings, products or services, stating their opinions about service experiences they had or about their stays in a hotel, allowing them to purchase their holiday packages through travel agencies online or directly with the service provider like in the case of airlines.

E-commerce in México has had a gradual immersion due to various factors, such as lack of infrastructure, poor legislation on online sales in order to protect the company and the buyers, slow social change regarding the acceptance of this trade and the lack of confidence in the safety of online payment among other factors.

The category of travels is the one with the highest percentage of online shoppers. According to the Mexican Internet Association (AMIPCI) 30% of the online purchases is related to travel.

There is no doubt that there has been a change in the way to do business. Sales on the Internet are at a lower cost since there are no third parties involved. Social networks are creating new ways to communicate and spread information. This is why travel agencies have had to implement new strategies to strengthen their business and keep themselves competitive within this technological age Li L. and Buhalis (2005), Dolnicar, S. and Laeser, C. (2007). Buhalis, D. (1998) calls this restructuring the existing industry and radically changing the way of competing.

It is self-apparent the perception of the influence of other tourists who leave opinions available in community spaces where they describe their experience of a place or the service received, Ye et.al. (2011) reveals it is

important for managers to reflect and to become aware that tourists explore options online before making purchases and that comments of other tourists are strongly considered in making a purchase decision.

## 2. Theoretical review

Managing Information and Communications Technologies is indispensable at all levels in our society and sectors including tourism; also in universities, government, SMEs and individuals (Buhalis, & Deimezi, 2004; Suarez, 2010).

Adopting ICT in organizations involves a reorganization of their processes using tools such as information systems, which allow a better use of information in the business. But ICT are much extensive than that, they include software, hardware, email, internal and external networks (social networks), electronic commerce and instant messengers among other communication tools.

Information and Communications Technologies can be set to dissociate and detail each of its components; **technology** is the science that studies the technical means that are used in the processes within the industry; **informatics** is the science that studies the processes where data and information are involved; and **telecommunication** studies the practices that make possible to sending and receiving of information (De Pablos et al, 2004).

To understand the paradigm of Information Technology more precisely, Castells (2008) describes its five characteristics: **the first**, information is the raw material, i.e. technologies operate on the information, **the second** refers to the ability for technology infiltration in human society, **the third** point is the interconnection and increased complexity due to the relationship between systems and elements that comprise it, **the fourth** feature is the flexibility which refers to the ability of reorganization of society and business, maintaining its essence and recreating their forms of organization; and **the fifth** is the fusion of technologies that link a firm system, where

one item cannot be conceived without the other. This last point can be seen in business firms, mergers, alliances and collaborative projects sharing information through technology and information systems

Regarding the situation faced by SMEs (Mongue, 2005, Arasteh, and Ali-ahmadi, Mahmoodi, 2011) state that these have faced a strong pressure to improve competitiveness, the changes generated by the increased use of ICT in business and society, electronic commerce and the removal of geographic barriers, together with the cost reduction and transport services have in addition placed constant tension to these companies. Also Rivera and Rogríguez (2011) indicate that the information age activates competition between countries and determines that the permanence of tourism businesses depends on the strategies of the appropriate use of technology within an electronic competition.

There are tools which are free and allow diffusion in the services provided; for example, social networking, email, instant messaging, etc., to allow immediate, adequate and free information sharing promoting direct communication with clients including those not in the same place. However, on the other hand, it is essential to have administrative powers to identify and capitalize the opportunities that technology offers.

In the case of small and medium enterprises, the study done by La Rovere, R., & Hasenclever, L. (2003) indicates that the use of ICT benefits the organization of a business and its networking, however the authors state as one of the limitations of SMEs, the ability to work in groups with other external parts, i.e. to participate in partnerships, networking, lack of knowledge, as well as the ability to identify opportunities, and the lack of economic resources and time.

In Spain Martínez, Majo and Casadesús (2006) state that some hotels invested in Technology Information (TI), under pressure from the competition of big hotels, the undisputed globalization, facing E-commerce, among other reasons, and also specifying that the lack of financial resources is not a barrier as there are alliance strategies with other tourism organizations

in order to have a website to sell their services. Furthermore, Croteau and Bergeron A.F., (2001), Minghetti (2003) attributed to the ICT improving the efficiency of organizations' processes.

When choosing technology MSMEs is adequate, it allows them to concentrate their resources, gives value to their business and increase its competitiveness, both in price and in structure. Seoane (2005), Pavlou P. (2003) note that both Internet distributors and retailers that offer online service can provide strategic practices for handling consumer actions in their favor.

The outlook for SMEs is not very encouraging today, ICT has favored tourism growth thus increasing the volume of supply and demand. Moreover regarding SMEs in Mexico 80% of them survive the first two years and about 70% of new businesses fail in the third year of life, according to the Ministry of Economy<sup>1</sup> and Nacional Financiera<sup>2</sup>.

Moreover, the demand for innovation within companies includes performance improvements and anticipates as much as possible the trends; this is why innovate organizations are able to reinvent themselves and create new ways to remain competitive in their markets Borghino (2008), Caro Encalada, Vela Sosa and Leyva Morales (2010), determine that organizations that are not able to take action to remain competitive through a dynamic development, are in danger of leaving the market.

It is evident that ICT has changed the way of doing business in the tourism industry. Moreno-Gil and Aguilar-Quintana (2006), Park and Gretzel (2006) from 90's increased interaction with real time platforms communication and increased access to computers and the Internet have altered the structure of the tourism industry, an event that strongly impacted the industry was the reduction of commissions due to the downsizing of middlemen in the supply chain.

De la Rosa, Montoya and Pomar (2009) state that, apparently, the travel agencies in 2005 were placed in a chaotic situation, resulting in half of

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1. <http://www.gob.mx/se/>. Ministry of Economy.

2. <http://www.nafin.com/> Nacional Financiera.

the agencies disappearing because they could not adapt themselves. However, others were able to adapt, modify themselves and survive so much that they continued to operate with the new business actors and the competition that entered the market.

Some data that is important to note regards the situation of the country in terms of access to technology infrastructure (Internet) and acceptance of the use of it in their daily shopping (E-commerce).

In regards to the infrastructure and equipment, the National Institute of Statistics and Geography (INEGI, 2010), some results of the survey indicate that three out of ten households have a computer and only one in five has Internet access, although some Latin American countries show similar percentages, these indicators are well below countries with high development rates reaching percentages of 95% of households with access to Internet. This shows a large backlog of access to infrastructure and equipment.

The evolution INEGI 2001 showed that 2015 was very promising in the country, in 2001 Mexico had 6.2 percent of households with Internet, and by 2015 it reached 39.3% of households. However the world level indicator according to the Internet World Stats we are below the average of 18.3% of Internet usage in the country, which means that there should be more actions to gradually reduce the backlog.

As to the use of Internet to make purchases online, the Mexican Internet Association (AMIPCI, 2015), in its latest survey of E-commerce shows that from 2012 to 2013 the increase in online sales was of 42%, while from 2013 by 2014 the increase was only of 34%. An important fact is the consumers' preference to purchase, the average quarterly spending on travel purchases is \$9,284 representing 30% incidence of purchase in this category. However it is worth mentioning that the 2013 report shows a decrease of 50% in purchases of air tickets or bus fare; regarding hotel reservations from 2012 with a 37% showed a decrease in 2013 to 33%. In contrast, the categories of clothing, computers, music and movies have a considerable increase in the preference of online shoppers. A determining factor in the

purchase decision of consumers is the price, as Brynjolfsson and Smith show (2000) in their comparative study between purchases via Internet and retail at least in relation to books and CDs, they also show that with more frequency there is a greater range of price in online sales.

Also a high use of tablets and cell phones is shown according to statistics from AMIPCI so one might assume that there is a positive involvement in electronic shopping.

In Mexico, E-commerce is not widely legislated causing a legal gap and a potential risk to consumers due to the increase in this type of trade, things such as tourism portals, hotels and airlines; although this sector is in a phase of positioning, the legal bases being established for online sales are essential for its proper functioning. Currently it is being backed up by the Federal Consumer Protection Law which in Chapter VIII contains general provisions on electronic commerce (PROFECO, 2012) and the commercial code that in 2003 began its regulation of commercial transactions on electronic media. However, according to several studies done, the consumers continue to feel insecure when shopping online.

### 3. Methods and materials

The methodology used in the study was descriptive, explanatory and transversal under a qualitative methodology, the owner's perspective was analyzed in retail travel agencies in the city of Queretaro, Mexico due to the imminent immersion of new technologies in business and in the actual society. The aim of the research was to identify the perception of decision makers with respect to the changes brought by ICT in society and their actions implemented around the use of ICT. The research was aimed to answer the research question: how do owners of travel agencies implement strategies related to the use of ICT in their business according to their perception of the changes caused by these? Determining the proposition of the study is

that owners and managers of travel agencies have incorporated ICT in their business processes to improve and to renew their organizations.

The semi-structured interview was used as a tool for collecting primary data, which was applied to owners and managers of travel agencies in Queretaro, Mexico on the premises of their businesses. It was triangulated with direct observation of their procedures for organizing information and adoption of ICT, which contrasted with the primary information and the secondary data acquired from the comprehensive review on the Internet presence of the company (website) and in social networks (Facebook).

Regarding the informants in the city of Queretaro there are 138 registered travel agencies in the Statistical Directory of Economic Units (DENEUE), businesses that were chains were removed, and other area, and those repeated in the database, leaving a total of 87 travel agencies; a sample of 9 interviews was taken from those responsible for the travel agencies.

Out of the nine interviews 5 were with company owners, 2 with managers and 2 with administrators of the organization. For the years of operation of these enterprises, four of them had more than 15 years' operating, three of the AV were between 11 and 15 years and two of them between 5 and 10 years in the business.

An analysis profile informants was conducted and the creation of the company synthesis is shown in the following figure 1.

**Figure 1. Background of informants and companies**

Studies	Creation of the business
<p>There is no uniform actor's profile, since they have a different background, and although two of them have a degree in Tourism Businesses, this condition does not determine the success or permanency of the Travel Agency. Creation of this kind of business is not correlated with an academic background, but rather the personal skills and previous experiences allow them to have human relations in that specific sector.</p>	<p>Although businesses have different academic backgrounds, similitude in the business's acquisition is observed. There are companies with less than 6 employees, and three of them are family businesses. A majority of actors are identified with a job history in the tourism sector, which could represent a security of staying in the market, in addition the decision to open the business was a personal resolution, that implies a link a responsibility to look for survival and well-being of the business.</p>

**Source: own study.**

The data collected in the interviews were analyzed thematically and categorized as shown in Table 1.

**Table 1. Setting categories and indicators**

Using ICT		Empirical Indicators
Adaptation or acquisition of technology	Characterization on the use of information and operation of the organization using ICTs	Internal: Ways of organizing work using Information Systems acquired by the company for administrative, accounting processes, marketing and customer relationship management (CRM). As well as the use of suitable equipment (Hardware) according to their gamma (high or low) to carry out their daily operations.
		External. Using information systems suppliers to provide services to its customers. Systems for reservations and / or purchases of air tickets or buses through platforms.
	Ways of communication, promotion and sale	Using email, communication through smart phones, either for sale or information.
		Using business websites and social networks for communication or sales. Practice online sales with own infrastructure.
Perception	Execution of strategies in the company and usage of technology in the tourism sector	Number of advantages and benefits of using ICT in their business.
		Number of defects or problems in the use of ICT in their business operations.

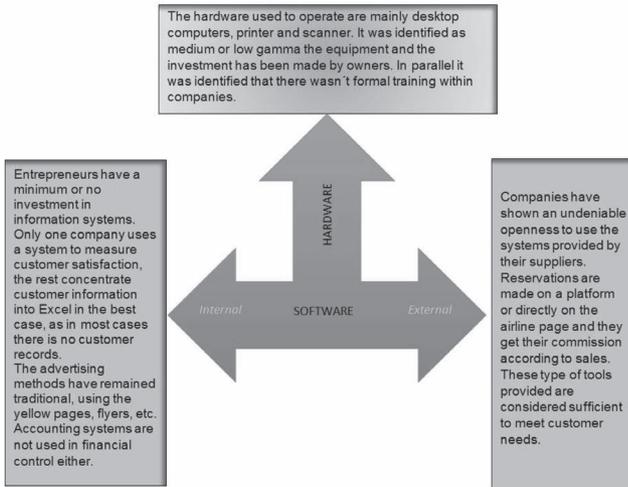
**Source:** own study.

## 4. Results

The information was extracted in two centerlines, a) first actions taken within travel agencies regarding the use of ICT in business operations for the purpose of obtaining information from the adaptation and acquisition of technology in these business; b) the second line aimed at knowing the perception of decision makers of the TA regarding the impact of ICT in their sector.

a) .Acquisition of ICT Adaptation and acquisition of ICT

**Figure 2. Main findings of use and acquisition of ICT**



**Source: own study.**

Regarding the means of communication, promotion and sales, the predominant strategy is the use of email in the three processes. It has been said by most participants that e-mail has been a requirement that customers have introduced in the negotiations, however the owners and managers of travel agencies have used this method for sending promotion information and advertising to customers, in order to keep this for future services and further sales negotiations are also performed in this way, closing sales by sending the ticket or reservation confirmation via email.

With regard to the use of websites, companies remain reluctant to make an investment that can be profitable, since only two of the nine have one, however, when revising it in the network, these sites have a passive presence, i.e. the company website is static, not updated, it is used only to provide information (provided by suppliers), and communication that it allows is only by email.

According to primary and secondary information it is deduced that the use of social networks is void in all cases, to the perception of the actors it is that they are not formal and not useful for your company sources. Facebook is the social network identified, but it is described as a means of low credibility and definitely not considered as a strategy to provide better service.

b) Perception and strategies

As for strategies around the Information Technology and Communications, the owners and managers of travel agencies have found conflicting opinions about the benefits that can be obtained from the use of the Internet and ICT. They feel upset due to the competition of online businesses since they are considered not reliable or trustworthy. This is backed up by actions such as hiding information, charging extra fees, and not disclosing crucial travel information, seating arrangement, real well being of hotel facilities, air flight changes, etc.

However more than 50% of respondents state that the Internet allows customers to search the place they want to travel to, learn about places they can visit and that this facilitates their work as travel agents, which is considered as something positive, however they are aware of the limitations of this electronic means and the value of the information they possess due to their experience and that represents its biggest advantage over the competition online.

But interviewees are also aware of customer trends in the use of technology, they emphasize offering a personalized service instead of making an investment or improving their technology to adapt better to the current social changes. However the entrepreneurs do not show an open mind for new strategies because the changes may involve a risk for the organization, being the main shortcomings the training for employees and the financial resources.

The main strategies implemented by the owners of travel agencies are related to financial issues as it is their predominant concern are; a) to provide services to businesses which request deferred payment, rep-

resenting a great financial issue for their companies; b) to decide where to invest in advertising, because the yellow pages are considered as the first option, but with a high cost, even when their main clients come due to mouth to mouth references; and c) to select their suppliers based on service, costs and commissions.

On the one hand, just one travel agency has invested in an information system for customer service as well as it has made information backups, it also has targeted and programmed training and it has made an alliance as a strategy which allowed it to improve its operations.

In contrast, one of the travel agencies suffered a reduction in the physical space and the number of employees but the owner did not allow to go deeper into the subject.

It is worth to emphasize that at the time of the interview a serious confusion in the technological terms was identified, since in several cases when asked about ecommerce the answers provided were focused on the Internet concept, asking for information system handling customer relationships management (CRM) the response was positive, but it was referred to a database captured in Excel spreadsheets, as well as a lack of confidence with technological questions was noticed.

## 5. Discussion

Enough evidence was found in the investigation not to reject the proposition. Internet entrance for companies and travel agencies have forced to incorporate ICT into their business' processes, however the origin of these implementations is not an initiative in itself, as they have been designed and directed by the suppliers of their services, being perceived as a requirement for their operations. Actors have not been able to identify how much technology they currently use, as they minimize changes within their organization.

Undoubtedly the main problem that was found is the lack of knowledge of ICT terms, because there is a confusion in the terminology, therefore making it more complicated to implement in a company since in order to determine which tool to implement its implications and the benefits to be gained must be clear otherwise no optimization of this tool is achieved.

It should be noted that the actual investment in technology issues is minimal in travel agencies; however, it is understandable, since for small businesses there are limited financial resources and/or government support. To create a website for their company is a long-term investment but beyond that, joining to online sales through this medium represents multiple efforts like in the economics, the human resource training, changes in advertising and marketing, discipline and adoption of new forms of organization.

But the most alarming issue is the passive attitude of decision makers to incorporate in their activities those technological tools that will not represent a significant financial investment. The vast majority of the society has gained independence in navigating the Internet, it has adopted social networks and it is increasingly accepting online buys despite mistrusting payment methods. This puts at risk this kind of business as the cultural change of consumers is occurring faster than the change in organizations.

Another factor that represents a risk for travel agencies is the lack of understanding of how to use, to transform and to deliver information to customers. Information is a central component for both the company and nowadays consumers and the intelligent use of this can remain competitive in the market.

The essential point is that rather than economical support to travel agencies, it is necessary to generate technology training programs enabling them to know, to learn and to apply those ICT tools that best suit their operations. This will allow them to combine their daily operations and potential of the advantages that they have offered so far such as customer confidence, security and support through reliable information that provides added value to their services.

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