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# The Impact of ICT in the Eyes of Hotel Managers (Cyprus)

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# ABSTRACT

The impact of ICT (Information Communication Technology) hotel and hospitality industries has been widely recognised as one of the major changes in the last decade: new ways of communicating with guests. Little attention has been paid to the role played by the various General Managers. This research paper seeks to find out impact of ICT on the business aspects of hotel administration in the eyes of the General Managers, its impact on service delivery and the future impact of ICT.

**Key words:** information, communication, technology and service.

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# 1. INTRODUCTION

The travel and tourism sector is known to be one of the world's largest and enduring industries. Its revenues support a significant proportion of the economies of many nations and it is one of the largest employers worldwide. Its contribution to gross national product, employment and regional development are well documented and, unlike many other sectors, it is forecast to grow in importance in the coming decades as leisure time increases. Tourism is acknowledged to be very information intensive. This sector is also open to the elements of the fragmentary developments in the information and communication technologies (ICT) field. The exchange of information is very important at every stage in the sales cycle of the tourism product or service. Information must be able to flow quickly and accurately between the client, intermediaries and each of the tourism suppliers involved in servicing the client's needs. As a result, ICT (Information Communication Technology) has become an almost universal feature of the tourism industry. Its power allows information to be managed more effectively, and transported worldwide almost instantly. As a result, it has had (and continues to have) a major effect on the methods of operation of the tourism industry. However, it has not affected all functions and sectors equally. It is having the greatest impact on the marketing and distribution functions, while leaving others which need more human contact relatively untouched. Similarly certain sectors, such as the airlines, have been keen adopters of technology, using it to help to manage and streamline their operations and to gain strategic advantage. Others, in particular the hotel sector, have been less enthusiastic, but are gradually waking up to the benefits which electronic distribution can bring. However, given the way in which ICT is reshaping the basic structure of both commerce and society in general, and consumers' increased demand for information, its importance to the success of a tourism enterprise can only grow in the future. As a result, tourism enterprises need to understand, incorporate and utilize ICT strategically in order to serve their target markets, improve their efficiency, maximize profitability, enhance services and maintain long-term profitability

Law, R., & Jogaratnam, G. (2005). This chapter however presents the facts about the purpose of the study, provides the background and spur for the research then presents a general idea of the study.

## 1.1 Purpose of This Study

The aim basically was to find out how in which Information Communication Technology (ICT) shapes business processes and service delivery within hotels. The focal points were;

- ICT'S business framework
- The function of ICT in daily operations
- The significance of ICT in the provision of services to hotel guests
- Expectations of ICT in the future

## 1.2 Extent of Study

The above points however are examined within the eyes of the managers of the hotel industries, which are perceived to have much more insights on the impact of ICT on their establishments. Other stakeholders such as staff, guests, ICT suppliers, training providers and industry service providers' views are not however totally ignored, although they may differ. The study will consider ICT as a factor external to the hotel and analyse Managers perceptions of the way their internal systems should and do respond to the requirements imposed by ICT. For the purposes of this study, the internal elements of the hotels, such as corporate culture, and working processes, will be considered as a picture perfect totality which changes in response to the presence of ICT.

## 1.3 Basis of Study

To be aware of the impact of ICT on business processes and work together with tactical or planned issues within the hotels and how technology is seen in the eyes of their managers. The aim was to explore how technology is appropriate for the broader organisation, the



interaction of the technology with people, both hotel employees and guests, and how it affected the interactions between these groups. This research is, however, specific to Cyprus and hopefully useful to hotel managers, providing them with a clearer perspective on the impact of ICT and notifying them to possible methods of addressing problems that may arise.

#### **1.4 General idea of Review**

Few articles existed on the impact of ICT in Cyprus. There was one though on a seminar to talk about the essence of ICT on hotels in Cyprus. The best way thus of acquiring any information I figured, was interviewing

#### **1.5 Research questions**

- 1) What are the major issues facing your business? What is the current issue currently facing your business.
- 2) The impact of ICT on Service Delivery to Guests
- 3) What does the future hold for ICT?

#### **1.6 Layout of research document**

The type of methodology used is dissected on chapter 2. Chapter 3 documents on review of existing literature. The chapter 4 presents the approach taken to collect data. Chapter 5 presents the findings. For each of three questions. Chapter 6, Discusses conclusion and Limitation of the study Chapter 7 is basically the references of materials used to complete the project.

## 2. METHODOLOGY

The impact of ICT on the daily operations of a hotel is difficult to measure directly. Of necessity, the research had to use qualitative methods to take account of the fact that impact. Qualitative method was chosen because is the most suitable research method for the thesis.

In general there are two basic types of primary research method – quantitative and qualitative. The following table presents the comparative nature between quantitative and qualitative

<i>Comparison dimension</i>	<i>Qualitative Research</i>	<i>Quantitative Research</i>
<i>Types of questions</i>	Probing	Non-probing
<i>Sample size</i>	Small	Large
<i>Information per responded</i>	Much	Varies
<i>Administration</i>	Requires interviewers with	Fewer special skills required
<i>Type of analysis</i>	Subjective interpretative	Statistical
<i>Hardware required</i>	Tape recorder, projection,	
<i>Easy of replication</i>	Difficult	Easy
<i>Researcher training</i>	Psychology, sociology ,	Statistics decision model,
<i>necessary</i>	consumer behaviour	Decision support system,
<i>Type of research</i>	Exploratory	Descriptive

**Figure 1: Comparisons between qualitative and quantitative research**

Source: proctor, T. (2003) essential of marketing research (3<sup>rd</sup> Ed). Pearson education Limited: Essex

## 2.1 Qualitative research

“Qualitative research is a type of research that seeks to find out what may account for certain kinds of behaviour. It generally ask questions “how”, “why”, and “what”. It looks for attitude, opinions and feelings.”

Bishop (2002), qualitative marketing research involves the exploration and interpretation of the perceptions and behaviour of small sample of individuals. It means that the research findings are not subject to quantifications or quantitative analysis Mc Daniel and gates (1993).

There are several reasons that define the popularity of qualitative research. First qualitative research is usually cheaper than quantitative one. Second, it is the best way to understand the in- depth motivations and feeling of consumers. As third reasons that qualitative research is popular is that it can improve the efficiency of qualitative research.

It is becoming more common for marketing researchers to combine qualitative and quantitative research in to a single study or a series of study.

Despite all the above mentioned advantages, the qualitative research has some limitations. It does not distinguish small differences as well as large-scale qualitative research. a second limitation of the qualitative techniques is that qualitative are not necessarily of the population of interests to the researcher. A final concern about this type of research is the multitude of individual who profess to be experts in the field. It is often difficult to discern the researcher’s qualifications or the quality of research Mc Daniel and Gates (1993). The type of information required will aid the researcher in deciding the appropriate primary research technique. There are three methods of generating primary information, experimentation, observation, and surveys (Bishop 2002).

## 2.2 Observation

Observation is a method of data collection in which the situation of interest is watched and the relevant facts, actions, or behaviours are recorded.” Churchill and Brown (2004), Observing people and their activities for a purpose and to address research objectives provide a valuable source of information about behaviour (Bishop, 2002).

Three conditions must be met before observation can be successfully used as a data collection tools. First, the needed the information must be observable or inferable from behaviour that can be observed. Second, the behaviour of interest must be repetitive, frequent, or predictable in some manner. Otherwise, the costs of observation make the approach prohibitively expensive. Finally, the behaviour of interest must be of relatively short duration McDaniel and Gates (1993).

The observer may be one or more persons or a mechanical device. Although observation reveals valuable information about behaviour, it does not reveal feelings or motives, only behaviour and physical personal characteristics can usually be examined. Also only public behaviour is observed; private behaviour is beyond the scope of the researcher .Mc Daniel and Gates (1993). Even though observation method has some serious limitation in terms of scope, time, and cost, it does have certain advantages with regard to objectivity and accuracy. Data that can be secured by either method will typically be more accurately secured by observation. This is because the above mentioned method is independent of the respondent's unwillingness or inability to provide the information desired Churchill and Brown (2004).

## 2.3 Experimentation

“experiment is a research approach where one variable is manipulated and the effects on another variable observed” Mc Daniel and Gates(1993).Experimental research is often referred to as casual research as it is the only type of the research that has the potential to demonstrated that a change in one variable causes some predictable change in another variable. Usually, experimentation is used to tests elements of the marketing mix and one variable is tested a time Bishop ,(2002). Experiments can be conducted in a laboratory is that in this environment the researcher can control extraneous factors. Experiments conducted in the marketplace are called experiments. The major advantages of conducting experiments in a laboratory are that in this environment the researcher can control extraneous factors. Experiments conducted in the marketplace are called field experiments. The major difficulty with field experiments is that the researcher cannot control all other factors that might influence the dependent variable.

In experimentation, there is a concern internal and external validity. Internal validity refers to extent to which competing explanation of the experimental results observed can be avoided.

External validity refers to whether the casual relationships measured in an experiment can be generalized to other settings .Mc Daniel and Gates (1993). Experiments have an obvious advantage in that they are only type of research that can demonstrate the existence and nature of casual relationships between variables of interest. The disadvantages of this type of research can be defined as the high cost of experiments, security issues, and implementation problems, McDaniel and Gates, (1993).

## 2.4 Surveys research

Surveys are popular for several reasons. First is the need by managers to know why people do or do not do something. Second, manager need to know decisions are made. Third, manager need to know what kind of person is making the decision to buy or not buy a product. There are two major categories of error in surveys research: random sampling errors and systematic errors or bias. Systematic error can further broken down into measurement error and sample design error. Sample design error is composed of selection, population specification, and frame error. Frame error results from the use of an incomplete or inaccurate sampling frame. The second major category of systematic error is measurement error which occur when here is a discrepancy between the information being sought (the true value) and the information obtained by the measurement process. Factor which can cause measurement errors are interviewer error, measurements bias, non- response bias, Mc Daniel and Gates (1993).

Face interview can achieve high rates of response and is a free of the self-selection bias. Bias can occur where respondents give a answer which they believe the interviewer expects them to give. Dealing with personal interviewing the researcher will have to bear in mind the following disadvantages: the interviewers must well train and motivated so that they do not case bias; it is time consuming and costly; it requires a lot of planning; it is suitable only for smaller sample sizes. Nevertheless, personal interviewing has many advantages, such as: the interviewer can explain the questions and probe for responses; he/she can ensure all relevant questions are answered; it is good for qualitative information; the researcher can gather additional information through observation of the respondent; props and pictures can be used during the interview, Bishop (2002).

Advantages of focus groups: the interaction among respondents can stimulate new ideas and thought might not arise during one-on-one interviews; group pressure can help challenge

respondents to keep thinking more realistic; findings from groups tend to be easier to understand; another advantage focus groups offer is that they often can be executed more quickly than many other research techniques, Mc Daniel and Gates (1993). Unfortunately, some of the strengths of the focus groups may be considered as disadvantages: there is usually a small sample size; it is difficult to analyze the data generated; it requires careful planning and coordination, Bishop (2002). The other type of survey research is a panel research: respondent take part in a survey over a period of time; respondent take part in a survey over a period of time; respondents answer the same question at periodic intervals. Among the advantages of this type of research we can name the following: the sample only has to be selected once; respondent become familiar with the research and are more likely to provide accurate responses; it often achieves high response rate. Disadvantage: panel remember may drop out; respondents may become self-conscious and adjust their own behaviour rather than acting naturally Bishop (2002). “Another qualitative research methodology is a projective technique – ways of tapping respondents’ deepest feelings’ by having them project” those feelings into an unstructured situation.”Mc Daniel and Gates (1993), the objectives of any projective test are to delve below surface responses to obtain the feelings, meanings, or motivation. They are often used in conjunction with non-projective open-and closed-ended question. The projective test serves as a basis for gathering “richer” and more revealing data than standard questioning technique Mac Daniel and Gates (1993).

In order to improve the validity of finding in the study, researchers today use the triangulation method. Triangulation is typically a strategy for improving the validity and reliability of research or revelation of finding. Patton (2002) advocates the use of triangulation by stating “triangulation strengthens a study by combining method. This can mean using several kinds of method or data, including using both quantitative and qualitative approaches.” Patton (2002).engaging multiple method, such as, observation, interviews and recording will lead to more valid, reliable and diverse construction of realities. To improve the analysis and understanding of construction of others. Triangulation is a step taken by researchers to involve several investigators or peer researchers, interpretation of the data at different time or location. In a related way, a qualitative researcher can “use investigator triangulation and consider the ideas and explanation generated by additional researchers studying the researchers studying the research participants” Johnson (1997).

Triangulation may include multiple methods of data collection and data analysis, but does not suggest a fix method for all researchers. The method chosen in triangulation to test the validity of a study depend on the criterion of the research.

## **2.5 Quantitative research**

Quantitative research is designed to gather information from statistically representative samples of the target population; it is usually conducted among several hundred, of respondents for this reason. Information is generally obtained using standardized structured questioners Palmer (2000). This type of research tackles questions that seek to find out how much. The most common form of primary research is the use of questionnaires. Questionnaires are difficult to design and it is advisable to use the skills of an expert in questioner's design. They are often formed of both open and close questions. Open question generated qualitative information. There are three common methods for issuing questionnaires: by email, by telephone and by personal interviewing. While designing a questionnaire, the research have to consider such factor as the length of the questionnaire , the researchers have to consider such factor as the length of the questionnaire- the amount of the time that it takes the average respondent to complete the survey- is an important determinant of the appropriate method use. In addition to the length of questionnaire, degree of structure of the questionnaire may be factor in determining which survey method is most appropriate for a given study. Structure of questionnaire stands for the extent to which the questionnaire follows a set sequence or order, set wording of questions, and relies primarily on closed-end (multiple choice) questions; it is meant a "structured" questionnaire. One that deviates from these set patterns would be considered "unstructured" Mc Daniel and Gates (1993).

A survey questionnaire involves some form of interaction with the subject being studied; questions in a survey can be asked face to face, by telephone, or distributed for self-completion.

The cost and difficulties of obtaining good quality trained staff to undertake survey research has led researchers to search for lower cost alternatives – electronic questionnaire Palmer

(2000). Among the advantages of mail questionnaire may be following: relatively inexpensive method of doing primary research; allows a large sample to be researched; eliminated the problem of interviewer bias; is useful for quantitative information. Disadvantages: it does not generate a high response rate; only limited amount of open questions can be used. Talking about telephone survey at a convenient time; the interview can ask for clarification of answers or explain difficult questions; it usually archives a higher response rate than mail questionnaire. Cons: researcher cannot use pictures or symbols to aid their research; the sample is limited to respondents who can be contacted by telephone Mc Daniel and Gates (1993).

## **2.6 Purpose of Research**

The aim of this research was to explore the way ICT affects business processes and service delivery along with the interaction with strategic issues. The impact of ICT on the daily operations of a hotel is difficult to measure directly. Of necessity, the research had to use qualitative methods to take account of the fact that impact, in this instance, cannot be simply counted but needs to be described and illustrated in examples (Patton, 2002; Rubin & Rubin, 1995). In this research the impact of ICT was examined from the perspective of the hotels' General Managers, since they have the responsibility for coordinating all functions within their hotel, they were the key informants.

## **2.7 Sample selection**

Hotels in Nicosia and Limassol were chosen for these interviews because they are popular destination cities for most tourists and have a number of hotels. The sample consists of hotels ranging from 2 star to 5 star. Four hotel Managers agreed to participate in the study.

Interview:

Le Méridien Limassol Spa & Resort

Lordos Hotel Apartments

Holiday Inn Nicosia City Centre

Crown Hotel Nicosia



## 2.8 Description of sample

Hotel properties in different locations tend to cater to different markets, with clear distinctions between city fringe and suburban properties (Egan & Nield, 2000). For this reason, the list was divided into two geographic areas: City Area (Nicosia) and Seaside (Limassol). The analysis of the properties is given below:

The sample consists of hotels ranging from 2 stars to 5 stars, from 100 to 200 rooms. In qualitative research above, the size of the sample is driven by the purpose of the study (Patton, 2002). To examine the perceptions and context of ICT in Cypriot hotels, it was necessary to cover both geographic and business type variables to determine the effect, if any, these had. The GMs were selected for interview as they have the best broad overview of how their organisation is changing in response to ICT (Alkhafaji, 2003). Most importantly, they are usually responsible for the strategic development of the hotel (Nebel, 1991) including the alignment of ICT with business strategy (Huang & Qing, 2007). The role of the General Manager in providing oversight and direction is key to realising the potential benefits from ICT (Huang & Qing, 2007; Kearns & Lederer, 2003). The GMs are, generally, the ones who make decisions about ICT use and monitor ICT's contribution in realising the strategic aims of the business (Kay & Moncarz, 2007; Pervan, 1998; Tai & Phelps, 2000).

## **3. Literature Review**

This review scrutinizes the existing literature on the impact of ICT within the hotel industry, regarding service delivery. There was no literature on Cyprus though so this review generally focuses on outside Cyprus materials.

### **3.1 Why the hotel industry**

The focus is on the hotel industry because; the geographical location of a hotel has a major impact on its operations and profitability (Namasivayam, K., Enz, C. A., & Siguaw, J. A. (2000). Furthermore geographical location of a hotel greatly determines the profile of its visitors, the size of its market and the level of competition that it has to face. These three variables also have a strong impact on the ICT adoption tendency of a hotel. This is because the ICT adoption tendency of a hotel can be linked mainly to its expectations about the value addition that ICTs can provide to its customers, as well as the belief about the expansion of its target market through ICTs. A hotel will therefore be more inclined to adopt ICTs if it expects the ICT-based facilities to either provide greater competitive advantage or to blunt the advantage enjoyed by its competitors considering the characteristics of its customer profile, its market size and the intensity of competition that it has to face. Thus, based on the profile of a hotel's visitors, the size of the market, or the intensity of competition, hotels may differ in their levels of ICT adoption propensity for example found significant impact of geographical location on the adoption and use of the internet among hotels Law, R., & Jogaratnam, G. (2005).

### **3.2 Varieties of ICT in use in foreign countries (outside Cyprus)**

This part generally looks at existing ICT types in use in hotel businesses abroad. Technology is divided into three categories: efficiency and productivity, guest service delivery and revenue management Namasivayan, Enz and Siguaw (2000). After a survey in the United States of various hotels and lodgings, it was found that, of the hotels in the survey, nearly 70% using technology had adopted four or less of the ten technologies under consideration. The tendency was for adoption of revenue and productivity enhancing technology over all

levels of adoption. Noted that the initial technologies adopted are those that integrate well with existing systems and strategies, are easy to try, and produce visible results at a financial level. They did not provide any information on the existing technologies within the hotels.

A study of Hong Kong hotels, interviewing Electronic data Processing/Management Information Systems (EDP/MIS) managers at 21 hotels, found that, while the technology adoption had increased Law and Joganantam (2005). since a similar study in 1997 (Law & Au, 1998), it was still primarily limited to operational and administrative areas. Senior managers were not utilising the information held in the information systems in their strategic planning and decision making and it was noted that this could be due to “a lack of enthusiasm on the part of senior hotel decision makers in utilising IT Law and Joganantam (2005). The likelihood of hotels adopting a particular piece of technology is influenced by factors such as the market they serve, the level of competition and the age of the property. Hotels in highly competitive locations utilise ICT to try to gain an edge, particularly if they have large numbers of guests from the U.S. and Europe. Older properties are less likely to adopt new technology due to having an established market and the difficulties of involved in adopting the technology. This involves both integration with existing systems and physically getting technology into the buildings, for example wiring older rooms for Internet access Sahadev and Islam (2005).

Booking systems in hotels were examined by Choi and Kimes (2002) and presented an overview of some of the internal technology as the following discussion outlines. For each individual hotel, the Property Management System (PMS) is at the centre of both technology and hotel operations. This system is used to manage the room inventory, record guest details and produce billing information. It often interfaces with other systems such as the telephone systems and food and beverage point of sales terminals to allow integrated billing and management reporting. Other hotels part of a Franchise might have Central Reservation Systems (CRS). This allows on booking between hotels as well as the acceptance of direct bookings from a Central Reservation Office (CRO). These systems commonly have direct access into the PMS and update automatically so the hotel front desk and Central Reservations Office have the same view of the hotel’s available room inventory. There are also Global Distribution Systems (GDS) which are allocated a block of rooms within the hotels PMS systems but bookings from the GDS do not automatically update the PMS and must be entered manually. Either the customer or the travel agent makes bookings directly into the system via the internet. It was noted that each of these channels has different costs

associated with them for the hotel. GDS in particular invites a price for being listed, as well as substantial fees per deal. However, in their computer simulation of revenue contributions for a business hotel, no significant difference was found between revenue management by length of stay and room rate compared to adding the distribution channel to the process. They did note that the gap between room rates in comparison to the channel fees would be likely to affect the outcome. For example, in hotels where there was very little difference between room rate levels with widely varying distribution costs, the hotel would need to include distribution costs in their revenue Choi, S., & Kimes, S. E(2002).

Main (2001) observed that there was a rise in the usage of technology from her surveys between 1994 and 2001. These two studies were conducted using postal questionnaires to member hotels of the Wales Tourism Board. The population was 600 in both surveys but the response rate changed from 38 percent in 1994 to 50 percent in 2001. Use of technology for marketing and advertising purposes has also grown over the time period. In these smaller properties, the front office and booking processes may still not be computerised. The use of the Internet by these businesses is growing in line with the general uptake of Internet. Again, chain properties tended to be making better use of the Internet than the independent owner operated properties. Chains were also more likely to be doing their own website design and development rather than relying on outside providers.

Buick (2003) found that even among hotels that did not have a computer, most had a web page to advertise and promote their business. Again, many of these properties used their computer for accounting and word processing. There was limited use of PMS type packages but extensive use of spreadsheets which individual owners could use to build functionality specific to their business needs. Of the sites not using a computer, (30% of the sample), the reasons most commonly given were that the owner did not see a requirement for one to operate the business and that the capital costs associated were too high. The population surveyed was drawn from the Visit Scotland database of hotels which gave 160 properties with 15 or fewer guest rooms. The response rate to the postal questionnaire was 30%.

Hotels are not unwilling to adopt new technology but have a preference for immediate payback on investment and prefer limited risk when testing or sampling new technology. The technology that has been adopted was compatible with existing systems and had clear and visible benefits, for example, voicemail. More complex technologies, such as automated

check in, or better utilisation of information in strategic decision making, have a lower adoption rate.

### 3.2.1 Staffing

This section provides a brief sample of the literature surrounding staff availability, recruitment, retention and impact on service delivery. The lack of skilled workers, both within hotels and available for recruitment, has been raised by a number of writers. Marchante, Ortega and Pagan (2006) provide a formal definition of skills shortage and hard to fill vacancies based on their survey of the Andalusia hospitality sector. This identified a number of factors such as the general labour market, problems of shift work, labour mobility along with the perception of low wages and low status that make employees more difficult to find. There was also a mismatch between what is being taught in training institutions and the requirements of employers. The authors note that most of the firms surveyed were using hourly nett wages, although they note that a firm's reputation can also attract employees and decrease the likelihood of having hard to fill vacancies. Examining the Chinese market (Zhang & Wu, 2004), similar problems with wages and perception of job status arose leading to a shortage of applicants for positions within hotels. These authors noted that service quality within the hotels tended to suffer. There was a tendency to promote employees too quickly into supervisory and management roles. The mismatch of expectations they observed was between the expectations of graduates and the reality of the work they would be performing particularly in the early stages of their careers.

In reviewing best practice in hotel recruitment, Lockyer and Scholarios (2004) identified similar problems in Scotland with 85% of their respondents feeling there was a shortage of suitable applicants for front line vacancies. The respondents also felt they were suffering from high labour turnover, increased staff cost and the impact of legislation such as Equal Employment Opportunities and Health and Safety requirements. While over half the staff employed in the businesses were full time, the majority of the recruitment activity surveyed was for part-time and temporary positions, reflecting the shift driven and seasonal nature of the work. The authors noted in their conclusions that large hotels with more bureaucratic models of recruitment tended to suffer more problems in solving recruitment difficulties, this being to the importance of the social processes.

### 3.2.2 Competition and Pricing

Hotel room pricing and the role of pricing in competition is not straightforward. Steed and Gu (2005) give no fewer than 14 different models that can be used for pricing. Some of these, particularly the costplus models, were deemed to no longer be suitable for use. Even supposedly sophisticated yield management models had a potential to lower overall revenue if not controlled and implemented properly. There was also the potential to confuse and annoy customers with constantly changing rates due to differing demand over time.

This underlying seasonality is, in itself, a major issue for all tourism businesses (Butler, 1994). Seasonality is, in part, due to natural factors such as climate but also responds to social norms such as holiday observances (Hinch & Hickey, 1997) as well as fashion, sports and traditions (Butler). This means that demand is not evenly spread over the year but clumps into distinct high and low periods. Authors such as Jang (2004) suggest that it is possible to mitigate seasonality to some extent by developing a portfolio of market segments which use the facilities at different times of the year, pricing being one of the means of doing so. Into this already complex mix is added on-line distribution channels. These have to be managed to ensure price consistency and revenue maximisation (O'Connor, 2003). For reasons both historical, the early entrants on-line competed mainly on price, and current, customers expect to benefit from lower distribution costs; there is an expectation of lower prices on-line. This has been reinforced by the ability of on-line channels to process very short lead business such as distressed inventory which is

cleared at low prices. For the U.S. market, by 2003 there was beginning to be better management of on-line pricing with consistency between channels emerging. There was still a lack of understanding of the need for a rational pricing model overall. Particularly, there was a lack of awareness that discounting does not necessarily increase revenue due to a degree of price inelasticity in the demand for hotel rooms (Enz, 2003). There is still a need for a pricing model with less complexity and less use of discounting as a first reaction to falling business (Enz).

### **3.3 Theoretical Structure**

The hospitality industry is, in many ways, a contingent application of several business disciplines and, as such, has inherited the traditions and expectations of business research, in particular a focus on providing prediction and guidance to practitioners (Dobson, 2002). ICT needs to be considered within the framework of the business. Technology, including ICT, is created and sustained by human action. In use, technology facilitates activity while constraining the way in which that activity is performed. The way in which people interact with technology is also influenced by the institutional properties of the organisation, such as the professional norms and culture of the organisation. These properties are themselves influenced by technology which can either reinforce or change them

### **3.4 Applications of ICT in Business Processes**

This research report focuses on how technology is used within hotels, basically its purposeful uses. Sophistication of technology has allowed the move from management of reservations to yield management Sigala et al. (2001). Yield Management was defined strategic control of inventory to sell it to the right customer at the right time for the right price.), whereas Reservation Management is about process; basically strategy for handling reservations. Yield Management (YM) has moved from the single property level to the chain or group level with the development of network centric computing, where information is able to be broadly shared utilising technology such as the Internet and private networks. They discuss the potential for the development of one to one marketing strategy to allow YM to maximise yield on a customer by customer basis. One to one marketing strategies are defined by Peppers, Rogers and Dorf (1999) as where “different customers are treated differently, the firm changes how its products are configured or its service is delivered based on the individual needs of individual customers.

The increasing complexity of ICT allows for the capturing of additional information to facilitate management of revenue rather than solely per room yield Vinod, B. (2004). However, this ability is constrained by factors beyond the technology, such as the fragmentation of the industry particularly in the way it interacts with a range of available booking channels (Mainzer, 2004).

Chen and Schwartz suggest that when the room rate and demand are both high, the selector should be made available before a booking is made to encourage immediate booking. Where the demand is low, access to a room selector and therefore the

state of inventory, should only be available once a booking has been made. They also suggest that where the room rate is low, making the room selector tool available before booking may produce a perception of better service. Yelker and DaCosta (2001) discuss the need to include segmentation variables in web offerings, such as websites, to allow a determination of the guests' willingness to pay to maximise revenue. Rather than treating all Internet bookings as a single segment, they identify the ability to use dynamic pricing based on segmentation variables given as part of a web booking. This allows customisation of the offering to the guests' needs and the ability to maximise revenue. They also examine the ability to customise pricing and offerings to gain customer loyalty, defined as repeat purchasing. Similarly, Luck and Lancaster (2003) examine ways to use information that is gathered in the reservations and billing process to facilitate targeted marketing through electronic channels. They discuss integrating workflow technologies with Customer Relationship Management (CRM) and e-CRM strategies but do not consider how this can be implemented in day to day service delivery in the hotel.

### **3.5 The Value of Staff in Service Delivery**

This part looks at the relationship between people and technology with regards to service delivery. It also looks at the drawbacks to service delivery that caused by ICT.

ICT service delivery is providing systems for effective internal service support from support persons and systems and other systems and technologies that make it possible for the contact employees to give good service Gronroos (2000). If no such support exists, even the most customer-orientated and service-minded employees will eventually start to feel frustrated and lose interest in being good part-time marketers.

Gronroos (2000) defines part-time marketing as people representing the firm (who) create value for the customers in various service processes, such as deliveries, customer training, claims handling, service and maintenance etc, and some are directly engaged in sales and cross-sales.



Brotherton and Turner (2001) consider the implementation of a Computerised Yield Management System (CYMS) in a large hotel. With this survey, a number of managers were interviewed and staff about their training and whether they knew how the system worked. They found out that although the managers were committed to the CYMS, the same could not be said of the staff, who confessed to the fact that they had no training and were scared to crash the system.

It's clear then as stated by Matear and Matheson's (2000), maximizing the benefits of ICT in an organization weighed so much on the culture of the organisation and management practices. Management establishes the culture of the organisation (Gray et al), a culture that encourages innovation maximises the benefits in productivity from technology especially where there is a balance between the needs of employees, customers and other stakeholders.

This need for delivering on service promises and differentiating hotel offerings is seen as needing a commitment to Strategic Human Resource Management (SHRM) to address the issues of culture and operational practice (Maxwell, Watson, & Quail, 2004). This focuses on providing a brand environment where the integration between staff and technology is flawless.

Upon reviewing the literature on Irish hotels, it was noted that there was a need for managers to change agents and facilitators for their staff to deliver services to improve quality (Brotherton, B., & Turner, R. (2001).

Milne and Ateljevic (2001) note the expectation of hotels that there will be improvements in service quality from implementing ICT. Some of these will come from supporting staff in service delivery but details of how to integrate this with workflow and company culture are not considered.

The use of technology in reservations and marketing in the hotel managers' estimation did not provide staff more time to provide guest service (Wells, J. D., Fuerst, W. L., & Choobineh, J. (1999)..

Academic literature has focused on the administrative and management information provision roles of ICT in hotels. The role of ICT in supporting service delivery has been overlooked as have the interactions of ICT with other elements of service support. Similarly the roles of staff and organisational culture in realising the full benefits of ICT in all its roles have not been examined in the hotel context.

It's of paramount importance that ICT that while delivering services, the same information at all points of contact, whether through internet, call contact or person (direct). Wells, Fuerst and Choobinch (1999) examine what is required to allow a firm to successfully meet this challenge. While they stress the importance of business processes, and data design issues to ensure an incorporated view of customer data, they exclude the importance of training staff to operate the systems put in place

This continuity across channels is raised as an important issue in the acceptance or rejection of automated service offerings by Walker, Craig-Lees, Hecker and Francis (2002) and Broderick and Vachirapornpuk (2002), where failures in the follow-through or a perceived need by customers for personal contact can lead to the rejection of the business's service offering and consequent damage to its reputation. All authors note that technology needs to be seen as a benefit for customers and not just for the business. These benefits do not necessarily have to be financial, although reduced costs for use of Self Service Technology (SST) is a common expectation among customers (Broderick & Vachirapornpuk). Benefits, such as the ability to control the time and place of business and use of technology, are a voluntary choice to be made by the customer with face to face options available, and are all potentially of value but do need to be drawn to the customers' attention (Walker et al.).

Any service firm wanting to utilise ICT within its service delivery system needs first to examine its data design and business processes. Data needs to be managed to allow a single view of each customer from any point within the organisation rather than being segmented by department. Business processes need to be structured to facilitate the collection, updating and use of data, including by the customer where appropriate Wells, J. D., Fuerst, W. L., & Choobineh, J. (1999). Employees need to be able to see benefits for themselves as well as the organisation in the same way that customers do Curran, J. M., Meuter, M. L., & Surprenant, C. F. (2003).

Willingness of customers to make use of ICT is dependent on a lot of factors. Amongst them are attitude towards the service provider and their employees and the customer's perception of their own ability to use technology. The importance of the transaction to the customer, and the degree of risk involved when deciding on of channels to transact business also influences a customer's usage of ICT Curran, J. M., Meuter, M. L., & Surprenant, C. F. (2003).

For hotels, the benefits to customers of using Self Service Technology are still primarily viewed in financial terms by both parties, with attendant risk of price falsification and

reduced revenue to the business (Chen & Schwartz, 2006). Similarly, some large chain organisations are still coming to terms with how best to manage data to allow the picture perfect access that is required (Piccoli, O'Connor, Capaccioli, & Alvarez, 2003).

## **4. Empirical Data Collection**

### **4.1 Why interviews**

The purpose of this study was to understand how the GMs perceive technology fitting within their business. Interviews allow the interviewee to the world as they experience it (Kvale, 1996; Rubin & Rubin, 1995). This is particularly important for this topic where there is limited material available in the existing literature (Rubin & Rubin), as is the case for this study. As this study was exploratory, it was more appropriate to allow participants to determine their answers rather than the researcher supplying them, as is the case with a questionnaire or other closed instrument (Gillham, 2005). Interviews as an extension of ordinary conversation allow for interaction “to achieve richness and depth of understanding” (Rubin & Rubin, p. 13). Interviews are able to change in response to the interviewees’ answers (Gillham).

### **4.2 Semi structured interviews**

As these interviews had to provide information about the ICT context as perceived by General Managers (GMs) at a range of sites, a structured set of questions was prepared and applied to facilitate comparisons (Miles & Huberman, 1994; Rubin & Rubin, 1995). This meant that a standard set of questions was used to ensure all the areas of interest were broadly covered (Miles & Huberman), although these were not necessarily presented in the same order at each interview. In each interview, slightly different follow-up and probing questions, as described by Rubin and Rubin, were used to clarify the context and meaning for the interviewee as suggested by Gillham (2005).

### **4.3 The questions used**

The following were used as opening questions in each interview:

- 1) What are the major issues facing your business? What is the current issue currently facing your business.
- 2) The impact of ICT on Service Delivery to Guests
- 3) What does the future hold for ICT?

The first question aims to identify the business environment in which ICT is operating, macro economic variables such as employment and tourism flows, along with internal factors, for example organisational structure and staffing. This influences the impacts of ICT as described by Carlsson (2003) and Orlikowski (1992) giving the parameters of operation. This question seeks to identify whether ICT is one of the major challenges facing GMs.

The second question on service delivery, explores the GMs perceptions of the balance between the roles of ICT and staff in service delivery. As discussed by Brotherton and Turner (2001), the effectiveness of ICT can be limited by the willingness and ability of staff to apply it. Similarly, the requirement of ICT can impose barriers to service delivery.

The final question asked the GMs to theorise about future developments in ICT and the business environment. It seeks to examine the ways in which the GMs view ICT as an influence on strategy and the evolution of their businesses. It also seeks their views on the ways the context in which their businesses operate is evolving and where their major concerns lie.

### **4.4 The process**

Interviews were arranged through an initial approach by letter. A couple of hotels were approached but a few agreed to participate in the study. Most refusals were due to time constraints with GMs saying they were too busy to be able to participate. The average interview was 30 minutes duration and was taped, transcribed and.

## **4.5 Ethical issues**

Research was conducted in an ethical manner observing the principles of informed consent, respect for privacy, truthfulness, avoidance of conflict of interest and respect for cultural sensitivity. Informed consent means that the participants are aware of the purpose of the research, how data will be gathered, and their rights to withdraw from the project at any time without penalty, how the data will be published and whether confidentiality will be maintained. For this study, the letter inviting hotel GMs to participate included an outline of these details. At the time of the interview, the interviewer reconfirmed the right of the interviewee to withdraw from the study and stressed that published data would be non-identifiable to maintain confidentiality. The same information was stated on the consent form that each participating GM signed prior to the commencement of the interview.

## **4.6 Analysis**

The interviews were transcribed from the tapes with the researcher reading over the transcripts while listening to the relevant tape to confirm a verbatim transcription. As each transcript was completed, it was summarised to define the key topic or idea for each paragraph, using the technique recommended by Gillham (2005).

## **4.7 The demographic characteristics**

### **4.7.1 Process**

The tables above are clear representation of the relationship between responses from the interview and hotel demographic characteristics. The demographic characteristics selected for analysis were size, class, age, affiliation and location. The analysis of the sample by these characteristics is presented in Table 2 to Table 6 below.

	City	Seaside	Other
Location	2	2	

Table 2

Location defined exactly the geographical area where each hotel was situated.

	Less than 100	Between 100-200	More than 400
Size		1	2

Table 3

Size signifies how many rooms the hotels had.

	Budget	Mid Class	Luxury
Class	2	2	

Table 4

Class categorized the hotels from cheap ones to expensive luxurious ones

	Less than 5 years	Between 5-10 years	More than 10 years
Age			4

Table 5

The age of the hotels were significant as to determining the how advanced the technological infrastructure in place was.

	Chain	Franchise	Independent
Affiliation		2	1

Table 6

Some of the hotels belonged to a group...others were independently owned

## **5. Findings**

This chapter presents and discusses the findings from the interviews. Concepts will be presented with the supporting data from the interviews, and then the relationship between responses and the demographic characteristics of the hotels.

### **5.1 Major Issues facing their (General Managers) hotels**

The general managers were posed the question of the current issues facing their business (hotel). Labour shortages were one of the issues raised:

### **5.2 Labour shortages**

Labour shortages and their impact on the industry in almost every geographic location are consistently among the most difficult challenges as noted by one of the interviewees. This was to be expected as a shrinking labour force is the number one challenge facing the global hospitality industry. The problem of attracting and retaining qualified workers, once an issue only in an isolated number of markets, is increasingly becoming a global challenge. Demography, wage levels, failure to adequately address worker satisfaction and a reputation for long hours and low pay are all cited as contributing factors. Creative hospitality professionals have begun to develop innovative strategies for capturing and keeping high quality workers.

### **5.3 Managing Cost**

Hotels are increasingly challenged to find ways to reduce costs without sacrificing the quality standards imposed to consistently meet guest expectations. Managers are required to think about ways to operate more effectively (in other words to “do the right things in the right way”) and to examine possibilities for cost savings that will not affect the guest’s perception of value. This issue was also raised by one of the general managers of the hotels.



## **5.4 The issue of Competition**

Another issue of concern raised was that of competition. Cyprus is generally a tourist destination and has a plethora of hotels. There are too many available rooms relative to the guests desiring to rent them. The resulting competition, which often involves price cutting in efforts to provide greater value to guests, educes still further the profits generated.

## **5.5 The impact of ICT on Service Delivery to Guests**

In the past, an individual can write or telephone the hotel directly, or approach a travel agent to make hotel room reservation. However, with current developments in technology, the above methods are considered slow and costly. Writing to the hotel takes time as with olden days' snail mail. The General Managers of the various hotels stressed the improvement ICT has introduced to room reservation. Now, an individual can make room reservations online anywhere anytime so long as there is an electronic device with internet access, thanks to the development of ICT. Moreover, using online to make hotel room reservations has brought about a number of benefits.

First, an individual can book rooms from home by using online security to protect their privacy and financial information. Unlike the past where personal information may be given to a middle party (travel agent), where there is risk of our information leaked out or sold to others. However, there is no 100% guarantee that using online security can 100% protect our privacy as technology improves, people are getting more IT inclined, who may be able to hack into the system. "Thus, it is our responsibility (General Manager) and the hotels' to create a stable and safe system to prevent any loss from breakdown of system" said one of the interviewee.

Second, individuals can use services provided by the online travel agents to compare prices and facilities at different hotels. Online hotel reservations are helpful for making last minute travel arrangements as stressed by one of the general managers. To the hotels, they may want to drop the price of a room if some rooms are still available. To individuals who may be backpackers, who usually decide on a last minute stay over at certain places, this comes in handy.

The findings indicate that ICT adoption has a significant positive relationship with hotel performance. However, ICT adoption influences operational productivity more than customer satisfaction within three star hotels. ICT availability and ICT integration have a significant positive relationship only with operational productivity, while the intensity of ICT usage has a significant, positive relationship with both operational productivity and customer satisfaction.

Generally though, almost all the interviewees described ICT as having a positive effect on guest service delivery although one in particular gave a drawback as his hotel was of a small size. This is normal of small size hotels who have very little ICT development, of which guests do not complain that much.

## **5.6 The Future of ICT**

As a final question, GMs were asked what trends they saw emerging in the future, first in ICT, then for the hotel industry as a whole.

The GMs generally concluded that the hospitality industry gradually realizes that the ICT revolution has changed best operational practices and paradigms, altering the competitiveness of all hospitality actors in the marketplace. Hospitality corporations integrate their back and front office in a framework that takes advantage of the capabilities of the Internet as well as of intranets and extranets. Convergence of all technological devices gradually empowers greater connectivity, speed, transparency, and information-sharing. As a result, hospitality organizations are gradually focusing more on knowledge-based competition and on the need for continuous innovation, forcing management to stay abreast of the dynamic developments in the marketplace (Connolly et al., 2000). Hospitality organizations are also attempting to increase their online bookings by promoting their Internet presence more aggressively and by capitalizing on partnership and collaboration marketing. As a result, multi-channel strategies are required to assist hotels to interconnect with the wide range of distributors in the marketplace.

Furthermore most of the GMs believed that small and unique properties will be able to utilize ICTs strategically to demonstrate their specific benefits and to illustrate how they can innovate. By developing links with other properties they can also enhance their virtual size

and compete with larger players. Larger hospitality organizations can benefit from economies of scale, multi-channel distribution strategies and from streamlining their operations through e-procurement. Larger hotels and chains will also be able to develop their globalized agenda and to ensure that their operations and strategies are coordinated worldwide, reinforcing their brand values and service promise. In any case, ICTs and the Internet will be critical for the competitiveness of both large and small hospitality organizations in the future.

## 6. Conclusion

In conclusion, the GMs concurred that the dawn of the technology presents many opportunities and threats to the hospitality industry. They've understood that, those that seek to understand the technology and harness it will still be able to offer traditional hospitality, albeit with modern efficiency and effectiveness. Cline and Warner (1999) found that firms were investing 3.1% of their revenue in ICT and were planning to invest more in the future. In contrast, those that fail to invest run the risk of being strategically exposed and ill-equipped to compete with their more technologically literate competitors. There has been sustained research into ICT, but this has tended to be in tourism rather than hospitality, with focus on marketing rather than operations. And of the research that has been done, especially into the impact that ICT has had on operational performance, the majority has tended to research managerial perceptions of this impact rather than empirically test the actual impact. More research is required in the area of ICT's measurable impact on productivity, employee satisfaction, service quality and innovation. It can be said that ICT changes nothing, in the sense that hospitality still requires guest staff interaction to drive guest satisfaction, yet it changes everything, in the sense that it creates a new competitive dynamic.

### 6.1 Limitations

Quite a number of the hotels I sent letters or emails to did not answer. A couple of those who answered said they couldn't be available for the interview due to time constraints. Most Cypriot hotel managers were basically ignorant of ICT and hence most problems they faced were mostly about staff and adjustment of hotel prices.

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# APPENDIX 1

Dear Hotel Manager,

As part of a study regarding a Masters Degree in Tourism, I, Yousaf Ali am examining the impact of Information and Communication Technology (ICT) on businesses in the hotels Over the next Two weeks I will be conducting interviews with a number of Cypriot hotels I am interested in understanding how demand for labour and skills requirements are evolving given the ICT changes currently occurring in the accommodation sector. I will not be using a questionnaire - rather I hope to conduct a semi-structured interview that will take approximately 40mins. I will have access to the interview information - it will be treated in a strictly confidential manner. Should you wish to withdraw your information from the study at any point this can be done with no disadvantage to yourself. The data collected will also be used in preparation of a Master of Tourism thesis, again without identification of individuals. We have contacted a number of hotels to date and the response has been positive. If it is possible, we would like to arrange interviews with yourself and/or the Human Resource Manager from your company in the near future. Should you require further information, please feel free to contact

Me, Yousaf Ali by email: [helloyousaf@yahoo.com](mailto:helloyousaf@yahoo.com) 0035799105521 I look forward to meeting you in the near future.