

Advantages of IT Applications in Hotel Management

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Abstract--- *This paper seeks to present a conceptual framework explaining how technologies utilizing information technology (IT) will contribute to competitive advantage in hotel companies. When designing and executing IT programs, several aspects need to be closely assessed, so that they can contribute to competitive advantage when hospitality companies. While evaluating IT decisions in hotels, there are several closely related fields, which comprises of coherence between the IT decision and business strategy, styles of IT implementations, expected effects of IT decisions, and decision-making style. Sophistication of the system, resource utilization and management skills are key issues when making IT policies. Not all the IT investments, however, can result in positive results or short-lived sustainability. Moreover, the period between taking IT investment decisions and seeing their expected effects can be lagging. There are several aspects and problems to consider when making and executing IT investment decisions if they are to add to the competitive advantage of the business. Hotel businesses need to be careful with their decision of IT investment and look carefully at each IT expenditure.*

Keywords--- *Applications, Competitive advantages, Competencies, Hotels, Information technology, Investments.*

I. INTRODUCTION

Investments of information technology (IT) play a significant role in successful management of hotels. Efficient and timely delivery of modern IT technologies may provide opportunities for improved guest services to fulfil increasing expectations of the customers, enhanced cost control, expanded hotel opportunities, and more effective marketing strategies. It is clear that IT improvements would improve the profitability of hotels, reduce their costs while adding value to the products and services provided to their clients. Investments in IT systems in hotels have therefore grown in the last decades. Extensive research studies are needed that explore deeply how innovation in IT systems will lead to the creation of sustainable competitive advantage for hotel companies. The established literature on this subject in the hospitality sector is still not definitive, and limited qualitative and methodological studies have been carried out in this area. Having identified the void, this analysis intends to explore how IT improvements can contribute to strategic advantage in hotel companies; and to suggest a theoretical framework explaining the linkages between competitive advantage and IT technologies [1].

Competitive Advantages of IT Applications:

There are several fields to be found and analysed when looking at whether and how IT systems will contribute to competitive advantage in hotels, as illustrated in Fig 1. The first section comprises of the analysis of the IT decisions investment, which is addressed below.

When evaluating IT decisions in hotels, there are five closely related sections: (1) continuity of business strategy and IT decision; (2) styles of IT applications; (3) expected advantages of IT decisions; (4) client financial position and accessible financial resources; and (5) style of decision-making [2].

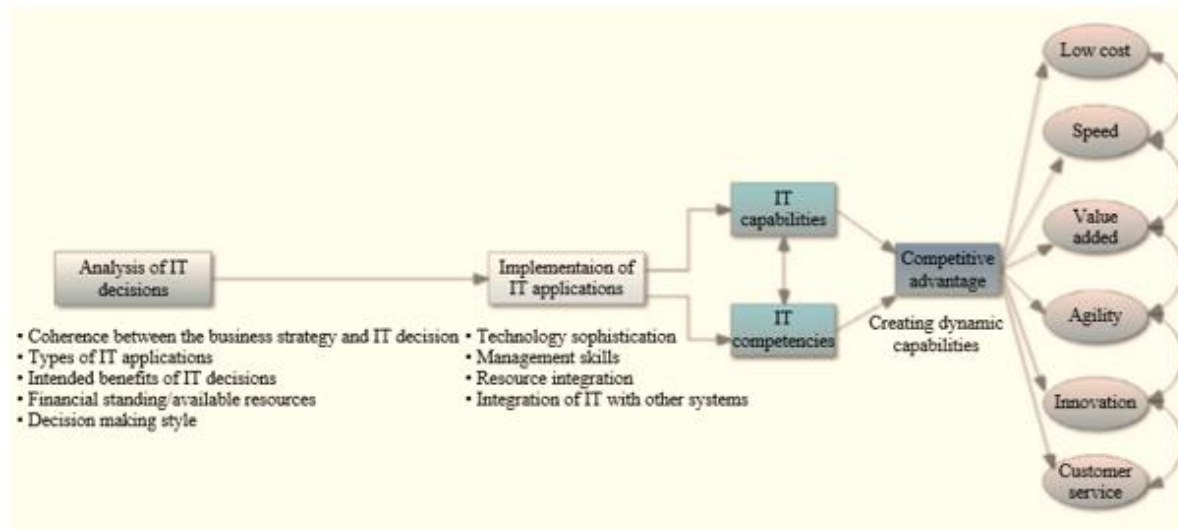


Fig. 1: IT and competitive advantage

It is anticipated that there will be coherence between the operating strategy and the business strategy of the hotel industry. Thus, administrators will explain and demonstrate how their expenditures can help the overall business strategy of the hotel group or the competitive strategies of the hotel units. Otherwise, the owners of the hotel and the management team may not be endorsing these IT proposals / projects completely. Researchers say, hotels are likely to focus on a small range of technological projects that are related to a particular strategy. Within the low value-added lodging segments (i.e. mid-scale, economy and budget), hotels are likely to consider ITs that maximize operational efficiency; whilst hotels are likely to pursue technological improvements within the higher value-added lodging sectors (i.e. luxury and premium), which enhance the quality of service delivery to customers, the aim is to identify business strategy and choose investments for IT accordingly. The second phase is to determine the type of IT applications in which the hotel company would invest. Hotels should invest solely in IT software for front of the building, back of the house or both [3].

Customers are well trained, motivated and willing to use the IT tools for self-service. Hotel operators are therefore now being pushed to use IT to redesign their processes and optimize consumer value; self-check-in kiosks are evidence of this. The changing market model demands more customer oriented, open, versatile, efficient, creative and collaborative hotels. For example, with "Microsoft Surface", which was Microsoft's first consumer surface device, "Sheraton Hotels & Resorts" and Microsoft launched yet another hotel guest experience [4].

There may be specific IT requirements and preferences for consumers too. For example, business travellers should expect to have online check-in from airlines and hotels. On the other side, leisure travellers that require more facilities for

in-room entertainment. Travelers meeting and promoting may require specific IT systems for their conferences and meetings. Simply put, each segment of customers can involve and demand for various types of IT applications. As the recent survey has been, perceptions of hoteliers indicate that Wi-Fi hotspots, systems associated with the in-room entertainment, and kiosks for boarding passes or check-in of airline are the most important technologies for customers, respectively [5].

Studies report that the most significant in-room technologies for male travellers include express check-out or check-in, high-speed internet connectivity and electrical outlets which are easily accessible, whereas the most effective in-room technologies for female travellers have been listed as easily accessible electrical outlets, guest control panels and high-speed internet access. Hospitality-linked ITs under back-office activities and front-office specifications can be loosely categorised. Back-office systems include inventory management software solutions, data management, financial reporting, workforce management, menu management, health management, green technology, etc. [6].

Researchers have separated IT applications from the operations of lodging into 4 categories: front-office applications, back-office applications, management systems of banquet, restaurant and applications related to the guest interface. Table 1 provides descriptions of various types of IT systems in hotels. Fig 2 demonstrates the chronicled sequence of hotel technology. The third and equally important field is to classify the IT project costs and its expected outcomes from it. Costs of each IT initiative and its estimated return on investment are of course closely calculated.

Table 1: Examples of different IT applications in hotels

<p style="text-align: center;"><u>Front office applications</u></p> <ol style="list-style-type: none"> 1. Reservation system 2. Check-in/check-out 3. Room status and housekeeping management 4. In-house guest information functions 5. Guest accounting modules 	<p style="text-align: center;"><u>Back office applications</u></p> <ol style="list-style-type: none"> 1. Personnel 2. Purchasing module 3. Accounting modules 4. Inventory module 5. Sales and catering 6. Generating financial reports and updating statistics
<p style="text-align: center;"><u>Restaurant and banquet management systems</u></p> <ol style="list-style-type: none"> 1. Menu management system 2. Sales analysis 3. Beverage control system 	<p style="text-align: center;"><u>Guest-related interface applications</u></p> <ol style="list-style-type: none"> 1. Call accounting system 2. Electronic locking system 3. Energy management systems 4. Guest-operated devices (e.g., in-room entertainment) 5. Auxiliary guest services (e.g., voice mail)

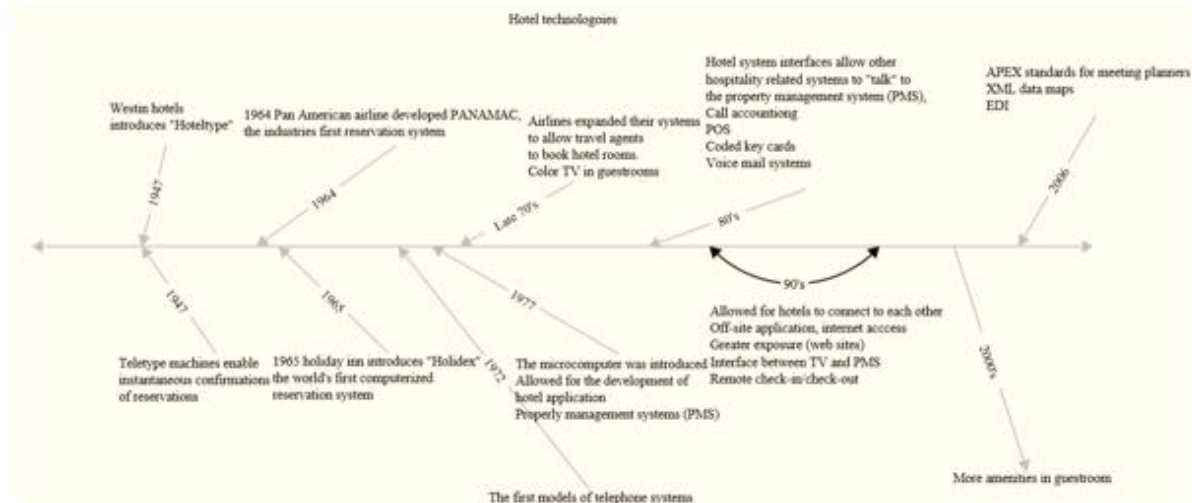


Fig. 2 Hotel technology chronicle

The IT investment literature dealt with the company's market measures, market valuation and stock market reaction. IT investments using accounting measures such as asset returns, return on investment, and sales returns were examined, showing mixed results in relation to positive commonalities with IT investment. Researchers support the view that IT investments are considered by the stock market to be a significant and value-adding activity for the average firm. Similarly, researchers are also focusing on IT spending and the many factors that companies are struggling with when determining appropriate levels and strategies for spending [7].

Companies are susceptible to under-investment in certain areas, especially during weak financial periods, lacking opportunities to improve productive capacity, reduce costs, provide more customer service or achieve competitive advantage. Conversely, companies are typically over-spending in financially strong periods; sometimes falling into speculation that offered massive returns on investments in new hardware / software technologies, sometimes just copying their rivals sometimes contributing to dissatisfaction and discontent [8].

Previous studies have shown that hotels don't always plan to take the initiation in developing a new type of technology. Such a delayed response, in IT applications tends to cause the industry of hospitality to lag behind the other industries. It, in effect, will lead a hotel to have a low degree of profits earned in terms of changing the leading position of hotel. In addition, most decision-makers of the hotel did not receive IT training; therefore their technical knowledge is relatively limited. The minimal IT awareness of these hotel executives inevitably makes them unwilling to accept new innovations, or even impervious to them. Experts said many hotel managers are cynical about the importance of investing in IT, leading to their poor IT expertise. In fact, they reflected that the hotel managers' poor technological expertise and the large scale of IT-assisted hotel activities indicate that the hotel industry would continue at an increased risk of IT issues.

The hotel industry may generally be considered to be data-intensive. Researchers suggest that the rate of technology diffusion in hotel industries will increase at an alarming rate with IT reforming the basic structure of society and industry, in addition to needs of the consumers for more timely and accurate information. Similarly, researchers emphasized that IT could change the essence of hospitality industry goods, systems, companies, markets and competitions. Researchers have underlined that innovations would bring about a major advancement in the hospitality industry.

Examining the evidence on information about management and decision making, researchers suggests that managers chose to base decisions on habits, muddling through and thumb rules. Formal quantifiable information analysis seems to be limited and rare input to decision-making. Yet modern systems generate information quickly and (comparatively) easily, which makes it harder for managers to disregard and reveals the wastefulness of natural or 'good feeling' decision-making. Although output knowledge will always be only a limited basis for decisions of management, computer systems are likely to make sure it plays a larger role in the future.

There really isn't much contemporary commentary on the ramifications of the management activities of computing technologies and information systems. Researchers restate recent literature and experience in this field, distinguishing between applications of information system that managers are using for themselves, and indirect effects on management structures where subservient groups use automated equipment. The employment and expertise literature deals mainly with shop floor and office jobs and supervisory position. The management information systems literature deals primarily with the design and implementation of processes, which provides no emphasis on the significance of the management roles and responsibilities.

Information technology is not only the one which leads to the competitive advantage, but rather how it selects, implements and uses that IT project, what it offers to the company and what will be the future role or significance of Information technology that will make a big difference in competitive advantage. Researchers state that firms cannot easily reduce the spending of IT and management of spur to cut technology budgets at any cost, with the intent to leverage IT effectively. The fourth field is the company's financial status and capital utilization for IT programs. For e.g., an IT project rollout may be widely required, and many executives and administrators would be in full agreement with it. Nonetheless, if the financial standing of the hotel business is not good enough and the client does not have financial resources for internal or external purposes, the IT project may not be feasible. The present financial condition of the hotel company is critical to determine the type and IT decisions scale and its type. At last while making the decisions of Information technology, it has been suggested that input and the participation from different functional areas and management levels should be figured out [9].

Over the years, the connection between IT worldliness and success at the organization has received some publicity in the literature. Experts recommend that an organization should have a solid scientific-technical basis in order to call a system technically sophisticated; new technology can make existing innovations outdated rapidly, and innovative IT solutions should create new competition or revolutionize markets and demands. They examine the connection between operating standards, service efficiency, and business results [10].

The second major area when implementing and developing the decisions of IT is owning management skills. Literature supports the ability of managers to influence the way technology is deployed, used and developed in organisations. Management skills include the capacity of the management to create, build and manipulate IT systems to help and optimize certain business functions, according to the researchers. IT management skills include: IT managers' ability to understand and respect the interests of other practical executives, vendors and clients in the sector. The ability to work with these practical administrators, companies and vendors to build viable IT solutions. Besides management skills, a company can't realize the maximum IT capacity. Managerial skills of IT require a lot of time to develop compared with technical skills. Management skills are natural qualities, so they literally cannot be learned. E.g., it was stated that

knowledge of IT projects by the management and their potential contribution to the performance of the company was essential for the ability of American Airline to develop the "SABRE" system. A further major area to address when executing and developing IT programs is the alignment of capital.

The "strategic necessity theory" focused on the assets argues that IT generates benefit by maximizing or manipulating existing human and company capital. Literature further suggests that advanced IT users do not outperform less sophisticated users, however, the ones who integrated IT with vital complementary human and business resources did achieve performance advantages. Studies report that hotels that have more advanced technology and integrate these technologies with other services have obtained higher productivity scores than those that only use technologies of automation.

In fact, the projects of Information Technology need to be incorporated with other initiatives and systems to ensure they are safe, user friendly, efficient, scalable, sensitive, easy to maintain, precise, and observable. Integration of information systems is a critical issue for hotels, because the business is powered by results. Integrated IT structures are required to enable staff to collaborate and share knowledge due to the importance of exchanging customer information from across divisions and resources. IT convergence is all about interoperability, relating to the ability of different software and hardware structures to handle and coordinate data on electronic products and programs in a seamless fashion. In fact, the end-results of IT transformation might be effective. For example, RFID minibars that are connected to PMSs could provide instant reports, notify the room service when a room is out of a particular type of beverage, and it could also post charge to the folio of guests.

II. CONCLUSION

The present paper suggested a framework to demonstrate how IT applications in hotel companies could lead to competitive advantage. A variety of findings and suggestions may be brought forward on the basis of the above discussions. If looking at how IT systems can contribute to competitive advantage in hotels, there are several stages and areas to be defined and analysed. The initial area is an analysis of IT decision investments. When analysing IT decisions in hotels, there are five closely related issues, which are coherence between business strategy and IT decision, types of IT applications, costs and intended benefits of IT projects, the company's financial standing.

To order to achieve a competitive advantage caused by IT, it is suggested that hospitality administrators take very good care of the above problems. The second area / stage is the implementation of IT programs in which hotel companies need to understand technical maturity, management skills, resource alignment and IT project incorporation with other structures. Investment in Information Technology will help hotel companies develop IT technologies and IT skills which lead to the following closely interrelated results: added value, low cost, efficiency, customer service and agility. This paper adds value to the hospitality sector by providing a theoretical model on how IT applications in hotels can lead to competitive advantage. It should assist hotel managers and researchers in evaluating IT projects within hotel businesses. The methodology built in this analysis can be used as a reference or checklist to assess and review future and current IT programs by looking critically at specific tasks and criteria to be performed and evaluated in each step of the IT process, and also whether the planned IT proposals would produce such intended results.

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