



Facilitating knowledge management through information technology in hospitality organizations

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Abstract

Purpose – This paper aims to discuss how hospitality organizations can facilitate knowledge management (KM) better through information technology (IT) tools.

Design/methodology/approach – The paper is developed based on a synthesis of previous literature.

Findings – Knowledge can be seen as one of the key assets for hospitality organizations. Therefore, KM can help hospitality organizations create and sustain a competitive advantage. Use of IT applications can assist in creating, storing, transferring and using tacit and explicit knowledge. Hospitality organizations can use numerous IT tools in their KM practices, which include competency databases, decision support systems, online search systems, expert networks, e-mail, groupware, teleconference, intranet, WWW, document management systems, video conferences, data warehousing, and workflow software.

Research limitations/implications – Rather than looking at IT applications from a tactical and operational point of view, this article suggests that hospitality organizations need to view their IT initiatives strategically. It is important to connect such IT application with other ones and search for synergies among them and management practices to optimize these elements, and so that tacit and explicit knowledge from different functional areas and management levels can be created, stored, transferred, and used efficiently and effectively. To achieve this, hospitality organizations not only need to create a supportive organizational culture and structure, but also train and motivate their team members to manage knowledge through IT applications.

Originality/value – This is one of the first studies in the hospitality field that offers discussions and recommendations on how hospitality organizations can better facilitate KM through IT. This paper provides discussions on potential challenges in utilizing IT tools in KM initiatives in hospitality organizations. The article further offers theoretical and practical implications, which should be useful for hospitality executives, researchers, educators, and students.

Keywords Information technology, Knowledge management, Knowledge management system, Dynamic capabilities, Competitive advantage, Strategic management, Hospitality, Hospitality services

Paper type Conceptual paper



Introduction

The competitiveness of a business, from a traditional viewpoint, relies on capital, land, labor and other tangible resources. However, it is now widely agreed that knowledge management (KM) replaces these traditional factors and becomes a source of competitive advantage (Kebede, 2010). For example, Drucker (1995) stated that knowledge is the only meaningful economic resource. According to Jennex (2008), organizations should facilitate KM because they need to develop formal processes to

identify, capture, store, and retrieve critical knowledge. KM processes can assist organizations in dealing with the transience of knowledge workers. KM can help organizations make sense of what they know and how they can use their knowledge effectively to create dynamic capabilities.

Literature in the generic management field has paid much attention to discuss what KM is; how organizations can create, transfer and use knowledge; and how information technology (IT) can help companies in facilitating KM processes to create dynamic capabilities (Bolisani and Scarso, 1999; Borghoff and Pareschi, 1997; Gallupe, 2001; Kebede, 2010; Jennex, 2008; Lueg, 2002; Sabherwal and Sabherwal, 2005; Sher and Lee, 2004; Wallace *et al.*, 2011; Wild and Griggs, 2008). However, the literature on this topic in the hospitality and tourism field is rather limited. There are only a few studies on KM in the field (Chalkiti, 2012; Cooper, 2006; Hallin and Marnburg, 2008; Hu *et al.*, 2009; Gronau, 2002; Shaw and Williams, 2009), but they clearly acknowledge that this is new research area in the hospitality and tourism field and more research is therefore needed. In addition, except for the study by Gronau (2002), none of these previous studies has particularly provided in-depth empirical findings and critical discussions about the role of IT in managing knowledge in hospitality organizations.

The aim of this paper is to discuss how hospitality organizations can facilitate KM through IT. To this end, the paper is organized under four sections. The first section discusses different views on competitive advantage and explains why hospitality businesses need KM to maintain their competitive advantage. Second section defines KM, discusses different types of knowledge typologies, and offers discussion on how companies can facilitate KM. The following section provides discussions on how IT applications can better be utilized in KM practices in hospitality organizations. The next section discusses potential challenges in utilizing IT tools in KM initiatives in hospitality organizations. The paper ends by summarizing emerging conclusions from the study and offers practical implications. Suggestions for future research are also provided.

Competitiveness and KM

A critical review of strategic management literature provides three schools of thought on competitiveness: positioning, resource-based, and dynamic capabilities views. The positioning view focuses on the external environment of an organization and suggests that companies can achieve competitive advantage through positioning themselves in the market place by following one of the generic strategies, which are cost leadership, differentiation, and focus (Porter, 1985). Porter suggests that only one of these three generic strategies should be followed, rather than trying to follow all three of them simultaneously. However, this view has received a fair amount of criticism as it tends to focus more on the external environment and it may also be possible for some businesses to pursue all these three generic strategies together and still be successful (Bilgihan *et al.*, 2011; Okumus *et al.*, 2010).

The resource-based view suggests that in order to create competitive advantage, companies need to focus on their “valuable,” “rare,” “inimitable,” and “unsubstitutable” resources (Barney, 1991, 2001; Grant, 1996). In terms of value, resources should contribute to the performance of an organization. In addition, those resources and competencies should not be easily imitated and substituted by competitors. Through developing such distinctive competencies, competitive advantage is achieved (Barney, 1991, 2001; Grant, 1996; Javidan, 1998; Okumus *et al.*, 2010; Prahalad, 1990).

Building on the positioning and the resource-based views, the dynamic capabilities view has been proposed. According to this view, companies can create and sustain their competitive advantage only by developing dynamic capabilities in a rapidly changing environment (Easterby-Smith and Prieto, 2008; Eisenhardt and Martin, 2000; Teece and Pisano, 1994; Teece *et al.*, 1997). Teece *et al.* (1997, p. 516) refer to dynamic capabilities as an “ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments.” Flexibility and innovativeness are essential when competition is intense and the future is difficult to forecast. Making timely decisions, implementing strategies faster than competitors, and offering value-added products and services better and faster than competitors are examples of dynamic capabilities (Teece *et al.*, 1997). Sher and Lee (2004) suggest that dynamic capabilities needed in a volatile environment should include adaptation, integration, and reconfiguration of endogenous and exogenous organizational skills, resources, and functions to meet change. Flexible and innovative hospitality businesses outperform their rivals. Dynamic capabilities should allow hospitality businesses to make timely decisions, reduce cost, improve quality and launch new and better products and services before their competitors.

Linking competitive advantage with KM, managing organizational knowledge helps businesses create dynamic capabilities (Easterby-Smith and Prieto, 2008; McDermott, 1999; Sher and Lee, 2004; Wiig, 1997). In other words, when hospitality businesses identify and exploit their organizational knowledge, they should observe enhanced dynamic capabilities and improved business performance (Sainaghi, 2010). For example, successful companies in the hospitality and tourism industry, such as Disney, Universal, Marriott Hotels, and Southwest Airlines, particularly focus on providing their customers with unique and positive experiences. In addition, they not only continuously improve their guest experiences, but also offer new experiences. In order to offer unique and positive experiences as well as offer such new experiences, they use their organizational knowledge. In other words, the success of these companies can be closely linked to their ability to manage their intellectual assets.

Supporting the above discussions, knowledge is increasingly recognized to be a primary source of a firm’s competitive advantage (Bolisani and Scarso, 1999; Easterby-Smith and Prieto, 2008). For example, Borghoff and Pareschi (1997, p. 835) note that:

Managers, consultants, IT professionals and customers believe that they have finally discovered what makes organizations work: knowledge – that invisible force that propels the most successful companies to stock market values which far exceed the visible assets of their financial balance sheet.

According to Bolisani and Scarso (1999) and Grant (1996), when knowledge is the core ingredient for competitive advantage, its value is associated with its “durability” (how long it will be valuable), “transparency” (how long it will take competitors to have the same knowledge), “transferability” (how easily competitors can transfer it), and “replicability” (how long it will take competitors to use this knowledge). This implies that hospitality businesses need to continue generating new knowledge internally to ensure their knowledge assets are current and durable, and they must protect their intellectual assets from competitors.

KM practices aim to increase effectiveness of intellectual assets, improve quality of decision making, achieve faster collaboration and decision making, find new resources

and use them effectively, capture insights, and facilitate innovation (Wild and Griggs, 2008). Sher and Lee (2004, p. 935) state that:

Effective and efficient knowledge flows within firms are important to establishing and maintaining dynamic capabilities. KM systems must enable knowledge flow efficiently in order to enhance productivity, quality, innovation, and business excellence.

KM is, therefore, crucial in creating dynamic capabilities. However, key questions emerge from the above discussions are what KM is and how KM can be facilitated, what factors determine success of KM practices in hospitality organizations, what the role of IT should be in this process and what potential challenges may be faced in utilizing IT tools in KM initiatives in hospitality organizations. The following section will focus on these issues.

Knowledge and KM

There is not a commonly accepted definition for knowledge and KM (Baskerville and Dulipovici, 2006; Borghoff and Pareschi, 1997; Crayannis, 1999; Easterby-Smith and Prieto, 2008; Faucher *et al.*, 2008; Wild and Griggs, 2008). Certainly, the concept of knowledge is different than information. Information is associated with facts, which needs to be interpreted; whereas, understanding and interpreting information requires knowledge (Blair, 2002; Kebede, 2010; Wallace *et al.*, 2011). Therefore, managing knowledge is the capacity and ability to interpret and transform information into knowledge (Bolisani and Scarso, 1999). To explain the difference between information and knowledge, McDermott (1999, p. 105) noted that:

Knowledge is different from information and sharing it requires different set of concepts and tools. Six characteristics of knowledge distinguish it from information:

- (1) Knowing is a human act.
- (2) Knowledge is the residue of thinking.
- (3) Knowledge is created in the present moment.
- (4) Knowledge belongs to communities.
- (5) Knowledge circulates through communities in many ways.
- (6) New knowledge is created at the boundaries of old.

According to Drucker (2002), KM is the coordination and use of the organization's knowledge resources to create a competitive advantage. Quintas *et al.* (1997, p. 387) define KM as "the process of continually managing knowledge of all kinds to meet existing and emerging needs, to identify and exploit existing and acquired knowledge assets and to develop new opportunities." This implies that KM is primarily the management of individuals with specific abilities. In other words, knowledge is not separable from individuals who interpret, develop, and exercise it. Therefore, individuals and groups in hospitality businesses need to be trained, encouraged, incentivized, and recognized as they create knowledge and pass it to others through informal and formal interactions and meetings. Regarding this, Blair (2002) states that KM should focus on establishing, maintaining, and facilitating active and open communication among experts, as well as between experts and novices. Blair (2002, p. 1028) further notes that the goal of KM is not so much to "manage knowledge but solve problems." According to Quintas *et al.* (1997), most innovations come from knowledge,

which has been within the company, but not applied to a current problem or into a new context. Knowledge can be acquired from external sources or can be generated by an organization (Wild and Griggs, 2008) and processing and leveraging knowledge requires a unique combination of human and information systems (McDermott, 1999).

Nonaka and Takeuchi (1995) divide knowledge accessibility into two categories: tacit and explicit knowledge. Explicit knowledge is easy to understand and can be offered and shared through documents, reports, articles, manuals, patents, pictures, images, video, sound and software. On the other hand, tacit knowledge is practical knowledge of employees and managers, which assist them to get things done. It is embedded in their experiences and can be shared and exchanged through direct, eye-to-eye interactions (Bolisani and Scarso, 1999). In other words, tacit knowledge is generally informal, intuitive, and based on personal experiences, which can be subjective and difficult to code and formalize. According to Easterby-Smith and Prieto (2008, p. 239), organizational knowledge is created through “the interaction of tacit and explicit forms knowledge.” In short, both tacit and explicit knowledge are equally important to facilitate higher level of KM practices in hospitality businesses.

Following Nonaka and Takeuchi’s (1995) work, Beckman (1999) proposed a five-level knowledge hierarchy, in which knowledge is transformed from a lower level to a higher level. These five levels are data, information, knowledge, expertise, and capability. Data includes text, facts, code, image and sound. Information includes organized and summarized data. Knowledge includes formal rules, policies, processes, and models. Expertise refers to fast and accurate advice, explanation and justification of result and reasoning by a group of experts. Capability refers to organizational expertise that offers integrated knowledge and ability to handle complex issues. It may be relatively easy to capture explicit knowledge from data and information levels. However, at the expertise and capability levels, there is much more tacit knowledge than explicit knowledge, which is often difficult to code and capture. Regarding this, Quintas *et al.* (1997) note that explicit knowledge can be coded and presented in written and other forms, but tacit knowledge stays within people and may be embedded in organizational and social processes.

Certain organizational processes and activities encapsulate tacit and explicit organizational knowledge at the individual and group levels (Crayannis, 1999). For example, at the individual level, instances of tacit knowledge may include common sense, good judgment, wisdom, intuition, know-how, and expertise in running daily operations or serving customers. Instances of explicit knowledge at the individual level may include check in-check out procedures in a hotel, processing orders, and following standard menus in a kitchen. Finally, examples of tacit and explicit knowledge at the organizational level may include stories about founders, executives, managers, employees and guests, best practices in customer service, and standard operating processes used in hospitality organizations.

Interest has been expressed in understanding how businesses facilitate the knowledge circulation process. For example, Nonaka and Takeuchi (1995) proposed four modes for knowledge creation and transfer in organizations: socialization, externalization, combination, and internalization. Socialization refers to the process of informal discussions and sharing experiences in terms of best practices and problem solving exercises among team members. Through observation, imitation, practice, and informal discussions, tacit knowledge can be shared and turned into mental models

and practical skills in hospitality organizations. Externalization is the process of articulating tacit knowledge in the form of explicit concepts such as metaphors, analogies, stories, and models. Through combination, various bodies of explicit knowledge can be blended. Then, explicit knowledge is transferred via documents, meetings, videos, e-mail messages, phone conversations, training manuals, rules, and policies. Finally, internalization is the process of converting explicit knowledge back to tacit knowledge. When team members receive and start using explicit knowledge, they can develop tacit knowledge in their daily operations (Jennex, 2008). For example, a chef may follow a standard recipe to prepare a dish, but she/he can add new ingredients either following her/his intuition or through getting feedback from guests. Through such trials, the chef can either improve the current recipe or create a new dish. If the chef shares her/his new knowledge with others, this tacit knowledge is shared and transferred within the organization. If not, this tacit knowledge resides with the chef.

Similar to Nonaka and Takeuchi's modes of knowledge, Bolisani and Scarso (1999) also proposed a model of knowledge conversation from explicit knowledge to tacit knowledge. They are briefly explained below and examples are provided from hospitality organizations:

- "From tacit knowledge to tacit knowledge" refers to the process of sharing experience and thereby creating and exchanging tacit knowledge in conceptual models and technical skills. For example, a chef can show a new hire how to use a machine in a kitchen or teach her/him how to prepare a dish. In some instances, tacit knowledge can be transferred by just observing and listening to others. For example, an employee can learn from her/his manager or colleagues just by observing and listening how customers' complaints are resolved.
- "From tacit to explicit knowledge" refers to the process of coding tacit knowledge and articulating it into explicit concepts and formal needs. For example, based on his experience and trials, a chef can develop a standard menu for a specific dish and share it with his colleagues in a written form. Another example may be that members of a department in a hotel can discuss common customer complaints and jointly develop written policies and guidelines explaining how to respond to specific customers' complaints.
- "From explicit knowledge to tacit knowledge" refers to converting explicit knowledge into specific "know-how." An employee may follow the company's policy in resolving a customer's requests and complaints, but may realize that the current policy does not provide much guidance. Based on this, the employee can try a different approach and may realize that this new way works. In these instances, only this employee has this tacit knowledge.
- "From explicit knowledge to explicit knowledge" is the process of systemizing and converting formalized concepts into new formalized concepts (e.g. developing a new operating manual or procedures from an existing manual). For example, a hotel company may take their standard hotel opening manual and develop a manual for resort openings.

Every hospitality business has its own way of collecting, storing, and using information and knowledge. In other words, there is perhaps no standard method for introducing KM practices in organizations. Regarding this, Tseng (2008, p. 158) suggests that the

best way to introduce KM in an organization is to “start with existing structures and methods, and then apply them affectively to reach the company’s knowledge goals.” In relation to how organizations should develop and facilitate KM procedures, Alavi and Leidner (1999) propose three closely related perspectives. They are culture based, information based, and technology based. The culture-based perspective focuses on collective learning, improving business practices, intellectual property cultivation, and improving communication practices. It focuses more on understanding the culture of an organization. Certainly, collective organizational culture can facilitate KM practices whereas lack of communication and conflicts among functional areas and different management levels may hinder KM practices. The information perspective focuses on how an organization can collect and provide accurate, ready, and categorized data and create corporate yellow pages. In other words, it is suggested that companies should collect and disseminate accurate and ready data to their employees and managers. Finally, the technology-based perspective focuses on creating and offering data mining, data warehousing, expert systems, intranet, multimedia, WWW, search engines, and decision-making tools. In this view, technology should be used to collect, store, and transfer knowledge. Alavi and Leidner (1999) suggest that organizations need to look at their KM practices from the perspective of these three areas and subsequently develop capabilities and overcome challenges related to each area.

Quintas *et al.* (1997) note that KM programs should be aligned across four dimensions: organizational culture and structure, people, processes, and technology. According to Ho (2009), four enablers of KM programs include strategy and leadership, culture, evaluation, and IT. Ho further states that these four factors are crucial to achieve KM effectiveness. The KM framework proposed by Okunoye and Bertaux (2008) also suggests that organizational culture, organizational structure, IT, support from employees, and reward systems are important elements to consider in facilitating KM practices in organizations. IT is an important element in this framework. According to these authors, in addition to having specific roles and influences in KM, IT influences directly and indirectly environmental factors, organizational variables, knowledge processes, and knowledge resources.

An emerging conclusion from the above discussions is that IT is an important element in establishing effective KM practices. Similar to the suggestions provided by Alavi and Leidner (1999), Hendriks and Vriens (1999), and Okunoye and Bertaux (2008), numerous studies state that IT can assist organizations to create, share, store, and use valuable knowledge without geographical limits (Bolisani and Scarso, 1999; Crayannis, 1999; Gronau, 2002; McDermott, 1999; Jennex and Olfman, 2006; Sher and Lee, 2004; Tseng, 2008; Wild and Griggs, 2008). For example, Ho (2009, p. 102) noted that IT:

[...] is tightly connected to KM because it helps distribute structural knowledge vertically and horizontally, as well as make it easily searched and utilized. As a result organizations and enterprises all try to implement KM with information technology.

The following section will provide additional discussions on how IT applications can help facilitate KM practices in hospitality organizations.

KM through IT

IT tools and applications are widely used in hospitality organizations and they can help these businesses reduce cost, improve service quality, offer memorable experiences, increase revenues, and produce faster innovation (Bilgihan *et al.*, 2011;

Law and Jogaratnam, 2005; Piccoli, 2008). As discussed earlier, IT also plays an important role in the deployment of KM practices in hospitality businesses. However, collecting, encoding, storing and translating knowledge are not new practices. Many hospitality businesses such as Disney, Marriott Hotels and Resorts, and Southwest Airlines have long recognized the importance of their knowledge assets, and they have been collecting, storing, transferring and using their knowledge in their business practices. Developments in the IT field have made deployment of KM practices easier and more efficient. In other words, the growth of KM can be closely linked to recent and fast developments in the IT field (Gronau, 2002; Okunoye and Bertaux, 2008; Tseng, 2008). For example, Lang (2001) notes that after businesses realized that company knowledge is their core competence, and advances in information processing and internet technologies can help them leverage their knowledge assets, they have made substantial investments in utilizing IT applications in their management practices.

Listed below are the number of IT tools that can be used in hospitality organizations to better facilitate KM practices:

- employee competency database;
- decision support tools;
- video conferencing;
- teleconferencing;
- data mining;
- groupware for discussions;
- expert network;
- case-based experience database;
- e-mail;
- documentation management;
- online knowledge searching;
- data warehousing;
- online training and learning;
- workflow;
- enterprise portal site;
- search engines;
- exogenous professional database;
- enterprise resource planning;
- supply chain management;
- customer relationship management; and
- revenue management.

Source: developed from Cobos *et al.* (2002), Crayannis (1999), Hendriks and Vriens (1999), Gronau (2002), Lueg (2002), Maier (2002), Milton *et al.* (1999), Sher and Lee (2004), and Quintas *et al.* (1997).

The list is not meant to be inclusive of all IT tools used in hospitality organizations. Some of these IT tools are expert systems and groupware, data warehouses,

and intranets. However, in order to function optimally, such technologies require a basic IT infrastructure, such as local area networking and internet connectivity.

Crayannis (1999) groups IT applications related to KM under human-centric and machine-centric technologies. Examples for the first one include electronic meeting systems, group wire tools, video-conferencing, internet search agents, and speech recognition. Examples of machine-centric technologies include genetic algorithms, decision support tools, expert systems, and virtual reality. Each of these IT tools may support a particular managerial and or organizational process, function, and capability. Crayannis (1999) further states that because of fast developments in the IT field, businesses can connect with each other through using new technological and communication tools in ways that they had not thought before. Facing a tremendous amount of data on a daily basis, hospitality businesses use various IT tools, such as intranet, data warehouse, and expert systems, so that their tacit and explicit knowledge is coded, stored, integrated, interpreted, and shared. Data mining can help organizations find and use valuable information from databases, particularly when they are applied to the customer relationship management and human resource management fields (Crayannis, 1999; Lo *et al.*, 2010; Tseng, 2008).

According to Sher and Lee (2004), in order to facilitate knowledge transfer through IT in an organization, three issues should be considered. These are comprehensiveness of IT construction within the firm, knowledge construction and maintenance, and facilitation of knowledge creation. Comprehensive of IT construction refers to employment of various tools such as employee competency databases, online search systems, expert networks, case-based experience databases, groupware, e-mail, document management, data warehousing, workflow software, and decision support systems. Knowledge construction and maintenance requires that IT helps reduce uncertainties of knowledge loss as a result of variations among employees and reduction of dependence on individual members. Finally, knowledge creation refers to creation, storage, transfer, and use of knowledge through IT applications in a fast and effective way. Sher and Lee (2004, p. 945) further note that "With an effective IT infrastructure, KM can maximize the return on organizational knowledge through continuously creating, accumulating and sharing it." First, knowledge creation incorporates organizational and managerial routines and IT applications can assist in identifying and creating this knowledge. Second, IT applications can help accumulate extensive knowledge. Finally, the accumulated knowledge is coded and shared throughout an organization. Employees and managers working on similar problems or facing similar issues, even from different locations, can have access to the knowledge and the proposed solutions.

Building on the above discussions, Milton *et al.* (1999, p. 619) proposed five key KM activities in creating and transferring knowledge through IT applications. They are:

- (1) personalization;
- (2) codification;
- (3) discovery;
- (4) creation; and
- (5) capture.

Personalization refers to sharing knowledge through face-to-face or online interactions and observations. This can be facilitated by current IT tools by

allowing face-to-face or online meeting platforms. In other words, different IT tools can help employees and managers in hospitality businesses communicate and share their personal knowledge and experiences with their colleagues. Codification refers to capturing existing tacit and explicit knowledge and retaining it in repositories in an organized and accessible way. IT can help in this area greatly in terms of saving and transferring such information via intranets and expert systems. Discovery refers to searching and finding useful knowledge from databases through searching the and intranets systems. IT tools can assist not only in finding such knowledge, but also coding and transferring it. Creation/innovation refers to generating new knowledge by using existing tacit and explicit knowledge. The role of IT may be limited here, but can still support employees and managers in helping them find endogenous and exogenous knowledge. Capture refers to utilizing this knowledge and sharing it within the organization through clear models and manuals so it can help people carry on their tasks. IT applications can be used in coding and formalizing this knowledge as well as in disseminating it within the organization.

Many areas in hospitality businesses can use IT applications to assist in creating, accumulating, sharing, and using knowledge. These areas include security and safety of guests and employees, revenue management practices, analysis of guest data, customer relationship management, environmental management systems, and recruiting and training employees. Many hospitality organizations record their guests' preferences, orders, compliments, and complaints, and use them to offer better experiences when their guests return. For example, Ritz Carlton Hotels uses a system, which they call "The Ritz-Carlton Mystique." The company reports on everything about employees, units, and customers. They use employees to collect and enter quantitative and qualitative data into the Ritz-Carlton Mystique system. The collected data is filtered, examined, interpreted, and provided to all their employees (ladies and gentlemen) worldwide. When guests come back to the same or another hotel worldwide, such information is used and guests are offered their preferred rooms, food and beverage choices, and other requested services. For example, one customer said, "Now whenever I check into a Ritz-Carlton, there's a candle waiting for me" (Robinson, 2008).

According to Tseng (2008), the highest value of using IT applications in KM practices is such applications allow a vast amount of information to be collected, shared, and transferred. The speed of transferability is often very fast, which gives employees and managers real time access to tacit and explicit knowledge. To sum up, IT is an indispensable enabler of KM practices (Duffy, 2000; Sher and Lee, 2004) and there are many IT tools to be used in managing knowledge in hospitality organizations. However, certain challenges exist in utilizing IT tools to facilitate KM practices in hospitality businesses. The next section will discuss these challenges.

Challenges in utilizing IT in KM practices

One of the first challenges to utilizing IT in KM is the need for an alignment between the company's overall strategy and the goals of a KM program (Lang, 2001). It should be clearly mapped how KM strategy and practices will help the company's overall corporate and business strategies. Certainly full commitment and participation are

required from all management levels and functional areas in an organization to better facilitate KM practices (Lang, 2001). Closely related to the above issue, another challenge is an alignment between the company's overall business strategy and IT practices (Bilgihan *et al.*, 2011) so that KM practices and IT tools can support the company's overall strategy. Moreover, an understanding that some type of ongoing resource allocations and investment will be needed, not only into KM practices, but also in placing and maintaining new IT tools. For example, Okunoye and Bertaux (2008) note that availability, sophistication, and use of IT tools may vary not only among organizations, but also within an organization. When there are limited financial and human resources, there may be fewer IT tools with less access time to the internet and other IT services.

Lang (2001) notes that IT applications do not automatically facilitate creation and use of knowledge. As discussed earlier, organizations have tacit and explicit knowledge and explicit knowledge can be captured, stored, and transferred through IT tools, but capturing tacit knowledge is often difficult. Lang (2001) further notes that data are the basic buildings of blocks of information, which may be available in the form of numbers, signs, words, photos, and sounds. IT tools can help hospitality organizations store, share, and use explicit knowledge in the form of solving problems and offering best practices. However, when the environment is dynamic and complex, where changes are rapid and radical, IT tools may not be helpful alone in finding, accumulating, and sharing the required knowledge.

The applicability of IT tools may be rather limited when trying to find and manage information. Search engines produce overwhelming quantities and irrelevant information; sorting and making sense of such overwhelming quantities of information requires substantial time and resources (Lueg, 2002). Tseng (2008) further states that knowledge is a more nebulous resource than data and information, and tacit knowledge cannot be easily translated into explicit knowledge. As a result, employees and managers in hospitality businesses may not clearly share and explain what they know and how they operate. This implies that richness of knowledge and background context may not be fully shared and transferred through IT tools. It is also possible that language ability may vary among employees and meanings of expressions, jargon, and codes may be different in each functional area and management level (Lang, 2001).

Borghoff and Pareschi (1997, p. 838) note that KM through IT applications does not mean "more IT and less people." For example, in his keynote speech, Documentation's CEO Miller (1998) notes, "Every afternoon our corporate knowledge walks out the door and I hope God they'll be back tomorrow." This captures the importance of people in managing knowledge in organizations. IT is merely a tool to assist deployment of KM practices. McDermott (1999) argues that leveraging knowledge cannot be accomplished by applying technology alone; community building is required as sharing knowledge requires a human relationship to think about, understand, and share. Tseng (2008, p. 159) underlines that "The key to implementing KM is the people themselves." Both experts and novices must be willing to share their knowledge. In many cases, this may create challenges, since experts may not be willing to share their knowledge and organization may not consider such knowledge as their intellectual assets (Blair, 2002). In line with this, Crayannis (1999, p. 220) notes that:

[...] employees will ignore, underuse, or subvert the most sophisticated technology of collaboration if they do not trust and respect each other, or if they lack a sense of mutual interest in common goals. The valuable potential of electronic knowledge tools can be only be realized in an environment that encourages and rewards their use.

Blair (2002, p. 1026) states that practicing experts “must communicate with each other to improve their abilities and to train novices, the organization must have a culture that encourages and facilitates the sharing of knowledge.” In other words, it is essential to create KM communities. However, McDermott (1999) argues that there are two main challenges in building KM communities: technical and management. The technical challenge is to design human and information systems that not only make information available, but help community members think together. The management challenge is to create an organizational culture and structure that truly values and promotes sharing knowledge. Closely related to this issue, every hospitality organization has privacy and data collection policies, which may in return be a potential barrier to facilitate KM practices in hospitality organizations. When developing and installing new IT applications, such data privacy and protection issues should be viewed from the KM perspective.

Finally, most IT tools tend to deal with new ways of doing things, as well as storing and communicating information, rather than actually trying to create, store, transfer, and use knowledge (Milton *et al.*, 1999). In other words, these IT tools are perhaps developed for other purposes, rather than managing knowledge *per se*. It may, therefore, be difficult to connect different IT applications or create interfaces and synergies among them in hospitality organizations.

Conclusions and recommendations

This paper has sought to discuss and offer suggestions about how hospitality organizations can facilitate KM through IT. Based on the above discussions, several conclusions and recommendations can be provided. First, knowledge can be seen as one of the most important assets for hospitality businesses since KM practices can help them develop dynamic capabilities, and subsequently create and sustain competitive advantage. The main goal of KM is not so much to manage knowledge, but improve organizational capabilities, solve problems and facilitate innovation so that the business can develop unique dynamic capabilities so that the company can implement its company’s overall strategy and achieve its goals (Blair, 2002; Gronau, 2002; McDermott, 1999; Nonaka and Takeuchi, 1995). This implies that perhaps hospitality businesses should see themselves as knowledge processing companies and see their employees and managers as knowledge workers. This should encourage them to think about and find what unique knowledge they possess, so that they can capitalize on this knowledge.

Second, the knowledge in hospitality businesses generally exists in a tacit, unstructured and dynamic form (Gronau, 2002). Therefore, the use of IT tools can assist hospitality businesses in terms of creating, storing, transferring, and using tacit and explicit knowledge. Numerous IT tools can be used in hospitality organizations in their KM initiatives, which include competency databases, online search systems, expert networks, groupware, teleconferences, intranet(s), WWW, videoconferences, e-mail, document management systems, data warehouse systems, workflow software, and decision support systems. IT tools should help create, accumulate, transfer, and

use both tacit and explicit knowledge by human experts. An integrated IT infrastructure, including secure networks, intranets, web-based technologies, database systems, and a wide variety of communication and retrieval tools, can assist in accessing and managing knowledge (Gronau, 2002; Wild and Griggs, 2008). This implies that, rather than looking at each IT tool from a tactical and operational point of view, hospitality organizations should view each IT initiative strategically and explore how this IT initiative can help them manage knowledge, as well as determine what other IT tools can be used and connected with this new one. It is important to search for synergies among different IT applications and management practices to optimize these elements and so that tacit and explicit knowledge can be created, stored, transferred, and used efficiently and effectively.

Finally, the article suggests that IT is an indispensable enabler of KM practices. However, IT tools do not facilitate KM alone. There are other important elements such as support from senior managers, organizational structure, culture, and availability of resources (Okumus, 2003). In addition, there may be certain challenges in utilizing IT tools to facilitate KM practices in hospitality organizations. These may include lack of alignment between the company's business strategy and KM practices, lack of support from senior executives, limited resources, and lack of or limited support from employees to utilize IT tools (Okumus, 2001). In particular, it is essential to create a supportive organizational culture, as well as to train and motivate employees and managers in managing knowledge through IT applications.

This is one of the first studies in the hospitality field, which offers discussions and recommendations on how hospitality organizations can better facilitate KM through IT applications. It is hoped that the discussions and recommendations provided in this article stimulate further research in the hospitality field and assist practicing managers in developing and implementing KM initiatives in their organizations. This article certainly offers valuable ideas and direction for future research. Future studies into this area can collect data from hospitality organizations to investigate how they facilitate KM practices, which IT tools they use, what type of challenges they face, and how they overcome those challenges. Future studies may also look at KM practices in small and large hospitality organizations. It is because there may be differences between large and small hospitality businesses in terms of available resources, IT capabilities and human experts. Data can be collected via surveys and semi-structured interviews. Focus group interviews (O'Neil, 2012) and Delphi technique (Paraskevas and Sounders, 2012) can help researchers collect rich data from hospitality organizations on their KM practices and how they can better use their IT tools. The empirical findings from future research projects should provide additional insights into how KM initiatives can lead to a competitive advantage in hospitality businesses and how IT tools can be better utilized in these initiatives. It is believed that future studies on KM and IT can greatly contribute to the strategic management (Harrington and Ottenbacher, 2011; Okumus, 2002) and IT (Ip *et al.*, 2011) literature in the hospitality and tourism field.

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Further reading

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