

Enhancing Malaysian Entrepreneurs Business Venture and Innovation in Tourism Industry through Knowledge and Technology Adoption

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Abstract

Tourism was considered a luxury for the social elite and travelling to known destinations was traditionally promoted. The world has become more integrated via increased trade investments and capital flows, as well as labor movements. Also, technology creates opportunities for emerging destinations, irrespective of their economic status. This transformation also escalates economic development in the Developing and Least Developed Countries. These changes will justify the universal promotion of tourism and decrease discriminatory effects in the global travel and tourism industry. This is all guided and influenced by relevant policies, technology and knowledge transfer and technology adoption, which is absolutely important and beneficial to Malaysia's tourism industry, since the trend of globalization of the world economy has increased. In this paper desktop research through secondary data has been adopted to determine the progress and performance as well as identify challenges and barriers faced by the entrepreneurs in the tourism industry, and many recommendations have been proposed so that these challenges and barriers can be overcome by government intervention.

Keywords: Knowledge & Technology Transfer, Technology adoption, Malaysian Entrepreneurs, Tourism Industry, Internet Industry.

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■ 1.0 INTRODUCTION

Malaysian entrepreneurs have long been seen to have the potential to increase access to new technology and improve productivity in many industries, including tourism. Spectacular rates in technological capabilities and export growth were seen in testimony of Malaysia's electronic, automotive and oil palm industry in 2000s. To renew and retain the interest of Malaysian Entrepreneurs in technology and knowledge transfer, measures are needed to overcome the difficulties in context of increased interconnectedness and vulnerability to global demands and threats, a changed global intellectual property regime, growing capacity in key developing countries to produce and develop products, globalization of the supply chain, the expansion of developing country markets, and increased attention to the challenge of ensuring equitable access to beneficial products (Chandra, 2006). It is technology that allows producers to close the gaps by closely following the lead of innovative competitors in the field.

Technology has often been regarded as an important mechanism for increasing productivity, which is extensively applied in the production, commercialization, and distribution of goods and services. However Lim (2000) affirmed that Malaysia recognizes that time and costs do not allow it the opportunity to develop and

generate technology. Therefore, Malaysia opted to import technology, or engage in technology transfer as a form of less expensive and speedy means of accelerating the use of science and technology.

Khalil (2000) posited that efficient and effective technology transfer requires the formulation of a strategy and creation of mechanisms of transfer. These mechanisms can be technology transfer incubators, information exchange networks, or organized projects that utilize special teams to affect the transfer. As technology naturally and continuously flows across boundaries of countries, regions, companies, among departments within organizations and among individuals, transferring technology from one entity to another is affected by the channels of technology flow. These may be general channels of contact among individuals and institutions, or organized programs designed for an orderly and systematic transfer of technology.

The tourism industry is also affected by the technological revolution. Both tourism destinations and enterprises are increasingly adopting innovative methods to enhance their competitiveness. In Malaysia, the tourism sector emerged in the 1960s as one of the new forces for economic development, but its growth was slow. Today, the tourism industry is one of the main contributors to Malaysia's GDP. In the 10th Malaysia Plan (2011-2015), the tourism industry was recognized as one of the 12 National Key Economic Areas (NKEAs). Through this plan, Malaysia intends to increase business tourism arrivals to 2.9 million by 2020, which is expected to contribute RM3.9 billion to the incremental Gross National Income (IGN) and generate 16,700 additional jobs (MCEB, 2013).

The importance of Information Communication and Technology (ICT) in tourism has significantly increased, and will keep on increasing in the near future. The integration of IT into organizations is an important key to success. Various high-tech information and communication technologies are being used in the tourism sector across the world. They are used for product development, marketing distribution, and training of tourism sector personnel. These technologies play a significant role in the process of determining and satisfying the ever-changing demand for tourism products. Apart from this use of new knowledge to feed innovation and product development, it is also critical for the competitiveness of both tourism destinations and enterprises (Hjalager 2002). Yet, as noted by Stamboulis and Skayannis (2003), the industry failed to embrace this approach, in part due to its poor link with academic research.

However, according to Gretzel (2013), tourism's dependency on IT is bound to increase, with tourism experiences being mediated by an ever greater array of devices that provide opportunities to interact with information, services, things, and other human beings before, during, and after a vacation. Augmented reality will provide tourists with the opportunity to interact with the toured objects in new forms. Gretzel also points out that the technology-related future developments of tourism may not necessarily lead to positive scenarios. Indeed, while technology will offer tourists more complex experiences, it will also lead to problems related to users. Thus, this research aims to analyse the challenges and barriers faced by the entrepreneurs in the adoption of new technology in Malaysia's tourism industry.

■2.0 LITERATURE REVIEW

Technology adoption

Jain and Triandis (1990) defined technology transfer as a process by which science and technology are transferred, from one individual or group to another that incorporates this new knowledge into its way of doing things. According to Yu and Tao (2009), rapid change in technology, market conditions and global competition has an impact on economic growth and it results in creating opportunities for competitive advantages. Adopting an appropriate IT system helps the organization to ensure that their competitive advantage is retained, maintain and develop competencies and to improve its overall performance. Due to this reason Malaysia is now promoting local SMEs and entrepreneurs to adopt new IT systems for efficient and new ways of conducting businesses. Government agencies even offer special funding to develop and upgrade the SME's systems.

Tourism and technology

According to Poon (1993) tourism is inevitably influenced by the business process re-engineering experienced due to the technological revolution. As information is the life-blood of the travel industry, effective use of technology is important. Hence, a whole system of ITs is being rapidly diffused throughout the tourism industry and no player will escape its impacts. However, Sheldon (1993) argued that unlike durable goods, intangible tourism services cannot be physically displayed or inspected at the point of sale prior to being purchased. They are bought before the time of their use and away from the place of consumption. Hence, they depend exclusively upon representations and descriptions, provided by the travel trade (e.g. information in brochures) for attracting consumers. Timely and accurate information, relevant to consumers' needs, is often the key to satisfying tourists' demands. Therefore, technology provides the information backbone that facilitates tourism. According to Buhalis (1997) and Karcher (1997), the revolution of technology has profound implications for the management of the tourism industry, mainly by enabling efficient cooperation within the industry and offering tools for globalization.

Vlitos (1992) observed that IT has a dramatic impact on the travel industry, because they force the sector to rethink the way in which it organizes its business, its values, or norms of behavior and the way in which it educates its workforce. It is undeniable that technological innovations improve customer service and hotel operations (Prabhu, 1996). Among the challenges of keeping up with fast changing technology is the usage of the interactive reservation system, which enables reservation via the internet. Thus far, 20% of the reservations in the USA are being made via the internet (Jinzhao & Jing, 2009). Other innovations include guest-room innovation with multiple phone lines and guest-room check-out. However, it is expensive to install and implement. Despite the high costs involved in installing the technology, computerized yield management helps maximize hotels' profitability and database systems (Blum, 1997). Thus, technology plays an important role in the tourism industry.

Technology Transfer (TT) Model in Tourism Industry

The TT model in the tourism industry was developed by Kumar et al. (2004). The model highlights three important components of the TT process. The first component deals with managerial capabilities, which include leadership and employee support, knowledge and technical expertise, group management skills, and project management skills. According to the model, these four groups of managerial capabilities are essential and could affect the relationship between technology transfer and technological capability. This is in line with Wallender III (1979), Kuemmerle (1997), and Jayawardena & Haywood (2003), postulates that successful technology transfer and improvement in technological capability rely on critical managerial capabilities.

The second component deals with organizational elements, which include the learning culture, organizational structure, and systems and procedures. The third component addresses the organization's absorptive capacity. Absorptive capacities consider technological capabilities as essential components of the model. Technological capability is closely linked to the absorptive capacity of a particular project, which includes dynamic learning and operational and investment capabilities. In addition, full government support is important for the smooth implementation of technology transfer procedures for the tourism industry.

Internet and tourism

The Internet is an especially relevant tool in the tourism sector, since it enables companies to collect information on their customers, and customers to collect information on the company or destination they choose. This gives 'rise both to global visibility of destinations and a global merging of market segments' (Werthner & Klein, 1999). The use of web-based tourist information systems has grown significantly. In 1996, 3.1 million consumers used these systems, and this increased to 33.8 million consumers in 1998. It was predicted that by 2008, 30% of the tourism business will be Internet-based. Travel revenues on the Internet have consistently ranked highly relative to other goods and services (Garzotto, 2004). Online technologies within the tourism industry have significantly impacted communications, transactions, and relationships between various industry operators and with the customer, as well as between regulators and operators. According to Internet World Stats (WTTTC, 2011), internet penetration has grown from 0.4% of the global population (16 million users) in 1995 to 30% (2 billion) in 2011. The many different sources of online travel data substantiate the growth trend. The use of internet for booking tends to be higher in countries that have high internet penetration levels and usage of credit cards, e.g. the

USA and UK. However, the highest levels, interestingly, can be found in smaller Travel & Tourism markets, such as Scandinavia (65% and higher) and Australia. Globally, different estimates suggest that more than 50% of leisure trips and 40% of business trips are booked online.

Knowledge transfer and innovation in the tourism sector

Knowledge creation is a key element in the innovation process that includes identifying knowledge resources, capturing tacit knowledge and codifying explicit and tacit knowledge in order to prepare it for transfer within or between firms or organizations (Nonaka & Takeuchi, 1995). Knowledge management and inter-firm exchange of ideas that result in innovation are vital for firms and destinations seeking to gain and retain competitive advantage. Knowledge transfers occur within networks at both the micro-level and macro-level. At the micro-level (i.e. individual firm level), tacit knowledge is created and is 'in-house', whereas at the macro-level (i.e. destination level), inter-organizational networks tend to transfer more explicit knowledge.

Tourism innovations are rarely major breakthroughs for the entire industry, but more often constitute smaller changes/improvements, which can constitute product, process, organizational/managerial and market innovations, as well as more tourism-specific distribution and institutional innovations (Hjalager, 2010). Knowledge management addresses the critical issue of organizational adaptation, survival, and competitiveness in the face of increasingly discontinuous environmental change (Malhotra 2002). For tourism, this environmental change is evident in both the supply environment and the changing nature of consumer behavior. Destinations are constantly adapting to changing situations by creating and using knowledge in order to respond to, for example, the safety and security measures necessary following the September 11 attacks on the United States (WTO 2001).

Knowledge flows

The ultimate goal is the effective transfer and use of knowledge to contribute to competitiveness. For the tourism industry, while there have been significant advances in developing stocks (Ryan 1997), it is in the area of flow and transfer where the real challenge lies. If transfer is to be effective, then the process needs to be mapped and understood. Hjalager's (2002) model of four channels works well, with transfer occurring according to the tourism industry and its use of knowledge. The four channels are the technological system, the trade system where transfer takes place through its associations, the regulatory system, and the infrastructure system including parks and natural resource managers, where there is a greater tendency to accept and use knowledge.

Transfer can happen informally, but knowledge management does not leave it to chance and creates a structured and disciplined approach, where the key element is the imperative of transmission plus absorption (Davenport and Prusak 1998). In four ways, transfer occurs via the interaction of individuals and groups (Nonaka 1991): one, tacit to tacit, achieved via the process of socialization through meetings and team discussions; two, tacit to explicit, externalized via brainstorming and the use of developers, which is a priority for tourism; three, explicit to explicit, by moving knowledge around a network from one organization to another, which is relevant for destinations; and four, explicit to tacit, taking explicit knowledge such as a report and generating new ideas. However, this objective for a tourism research organization is handicapped by the fact that the industry is particularly fragmented and is geographically dispersed.

Government policies

The governance dimension, including knowledge transfer mechanisms, forming policies and strategies, and the role of relationships between governments and other actors are pivotal towards engendering, enabling, and facilitating innovative processes. Policy decision making is often taken at the regional scale, where preconditions for knowledge creation infrastructure including labor, research institutions, and organizations are addressed by different mechanisms, including regional and local clusters and networks (Hall & Williams, 2008). Many forms of collaboration in CBTRs vary on the continuum between alienation to integration, including various types of cross-border partnerships, characterized by differences in the nature and levels of cooperation and interactions between actors (Timothy, 2000). These characteristics enhance learning and exchange of knowledge amongst tourists and managers and support the argument that higher integration encourages knowledge transfer and cross border innovation (Lundquist & Trippel, in press).

■3.0 RESEARCH METHODOLOGY

The methodology for this research entails a multi-dimensional research approach with a combination of literature review and desktop research. This research tries to identify the transfer and adoption of new technology by entrepreneurs in Malaysian tourism industry and challenges and barriers faced by them while implementing it. Content analysis was conducted to examine the articles that were published related to the research area. The research process involved a review of literature on the adoption of technology, knowledge transfer and internet in tourism industry. During the identification process, each publication abstract was read to initially determine whether it was related. Full-length publications of the identified abstracts were then thoroughly read to confirm their suitability. Academic literature was reviewed to identify possible challenges and barriers. Findings and analysis are based on previous research. Conclusion and recommendations are then drawn accordingly.

■4.0 FINDINGS AND ANALYSIS

4.1 Technology adoption in Tourism Industry

Technology adoption is becoming the norm among SMEs and entrepreneurs involved in tourism. Recently, there have been many new products and services offered by new start-ups via innovative platforms to SMEs looking to adopt technology. These include Lagisatu Travel Sdn Bhd (Tripfez), Tripviss Technology Sdn Bhd (Tripviss), Softinn Solutions Sdn Bhd (Softinn), and Expedia Inc. These products and services cater to tourism businesses, which are increasingly reaching out to travelers via online platforms. As a result, most are conversant with up-and-coming technologies, and as a whole, are receptive once they understand the value proposition.

4.1.1 New information and communication technology (NICT) in tourism

The availability of new technologies led to the development of new skills, new materials, new services, and new forms of organization. This is especially true for the last two decades, where the role of technological innovation was crucial (Weiermair, 2004). In tourism, technology created a new form of business called e-tourism, which today is the biggest force in e-commerce. This development and new skills in tourism management (e-marketing) were necessary, for example in a variety of coaching and interactive skills in the fields of wellness/adventure tourism. New information services for guests emerged as databases eased processing customer profiles and customer behavior. Moreover, new forms of network organization emerged, particularly in the field of co-operative tourism marketing. They have also been enabled using new technologies.

The contribution of technology's applications in tourism has been widely recognized, while the consequent alterations in the structure of tourism sector are still being examined. The travel and tourism industry has benefited tremendously from the implementation of Information and Communications Technology (ICT). The growth of the Internet and new technologies in general, has influenced the overall sector, more specifically destinations, in terms of promoting themselves and approaching potential customers (visitors) who seek information and fulfil their purchase via the Web. The adoption of NICTS by service activities can be understood as being firstly an incremental process of innovation intended to enhance the efficiency of a service by substituting capital for labor (for example, automation of tourist operators back offices).

Second, the accumulation of knowledge and IT progresses enables radical process innovations, thus improving the quality of service (this includes front office operations such as changes in reservations). The third phase of the cycle, which is characterized by product innovation and has become the main goal of the tourism industry nowadays, is implemented via the use of network technologies and through the constant need for renewed product differentiation strategies. For consumers, the Internet has changed the way tourists search, explore, book, and experience travel. The Internet provides a channel for travelers to search for information, visualize the travel products and services, and purchase a tour.

Also, social media is used to share travel experiences with friends and family. Web technologies have enabled Internet users to automate searches via search engines such as Google, whereby portals play the role of online travel agents (OTA), which provide consumers with web access to central reservation systems of hotels, airlines,

car rentals, and other travel products and services. OTAs allow consumers to check the availability of accommodation, compare prices, and perform payment for services. OTAs provide one-stop convenience and empower customers to find the best value for their own travel needs.

The Internet provides the platform to transact tourism business, sell and buy tourism services, search for travel information, obtain feedback from travelers, and share travel experiences over the web. From the travel business perspective, the digital platform and information technology is a perfect tool in serving clients and doing business in the tourism industry. Through sites such as Skyscanner, travelers can compare airfares prior to purchasing airline tickets. Online booking systems, such as Expedia, Agoda.com, and Booking.com enable customers to select hotels, reserve rooms, compare prices, and pay online without any sort of human interaction.

Social media sites, such as Airbnb and Couchsurfing, provide alternative accommodation options, such as homestays and private houses, where travelers can list, find, and rent lodging. The mobile applications of Airbnb and Couchsurfing are gaining popularity as they allow geo-location and travelers' private messaging, which quickens the whole process. Technology has played an important role in improving customers' experiences in hotels. More and more hotels are providing products and services to accommodate these gadgets (e.g. wireless networks, tablets' chargers, iPods), as well as online booking systems.

With the development of the Internet, hotels have also started to employ Cloud Computing to increase efficiency and reduce costs. The National Institute of Standards and Technology (NIST) defines cloud computing as 'a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction'. In other words, through cloud computing, hotels can have access to software, business applications, operating systems, hardware and general resources at a relatively inexpensive price. According to Albietz, hotels can employ cloud computing for front office applications (e.g. reservation system and check-in/check-out), back office applications (e.g. sales and catering and financial reports), restaurant and banquet management systems (e.g. menu management system and sales analysis), and guest-related interface applications (call accounting system, electronic locking systems, and energy management systems). By employing cloud computing in all these areas, hotels would be able to provide more flexible services to guests at lower costs and time.

The development of mobile technologies paves the way for a new era of tourist experiences. As these applications require the use of the Internet, it is important that tourist destinations offer wireless and affordable Internet networks. Currently, the availability of efficient wireless networks is limited, especially in rural areas and emerging economies. Since the use of the Internet and e-literacy varies among the different regions of the world (Jacobsen & Munar, 2012), traditional information sources (e.g. guidebooks, newspapers and magazines) should still be available.

4.1.2 New trends in Hotels

It was noted in World Travel Trends Report 2010-2011 that within 10 years, we could be checking into hotels staffed by robots, using automated 'smart hotels/ smart rooms', and socializing interactively with other guests and complete strangers.

a) Smart Hotels

In the future, hotel guests would be able to create different public profiles of themselves that other guests could access; it would be called "*Hotel families in social networks*". Online communities of like-minded people with similar interests could be set up, and hotel experiences and recommendations exchanged. Simultaneously, hotel operators could use the profiles to fashion products and services in line with customer wishes, and offer various individualized services on demand. Members of this new 'hotel family' could then meet up in the hotel and undertake joint activities, depending on their interests. After the stay, guests would communicate their product feedback to their respective social community.

b) Green hotels

The world is shifting towards a more sustainable and green environment. Green hotel is a new concept in the international market, and is one of the most crucial challenges for young entrepreneurs. Going green is a white-hot issue in the hospitality-design industry. People are beginning to look at sustainable solutions in a whole new way. The perception of green has changed; it has gone from a fringe movement to mainstream

Here, the global call for green hotel prompted Malaysian hotels to be environmentally friendly in delivering its services. It was again confirmed in the Nor Zafir (2010) research, where all respondents agreed that this is a new concept in trend globally, and is in high demand by tourists. Some of the respondents even mentioned that the government has already established the green hotel rating system, and it is to be launched in June 2010. Impressively, 10 of the hotels are already rated as green hotels, and in a recent competition, many of them obtained awards. The Malaysian government acted quickly in introducing green hotel rating system, as it is a new fad and expected by many experts to remain in demand in the foreseeable future.

a) Design and Innovation Hotels

Today, hotels are making a more concerted effort to upgrade their guest rooms and common areas with the newest technology that keeps guests connected, educated, and often times inspired during their stay. While many hotels bring in smart technology such as iPads to keep their guests entertained, other hotels are getting interesting with some unique high-tech initiatives. Example of innovation hotel is the case of the 'Intercontinental' group, which is known for its ambition to promote, share, and apply a set of resolutions supporting and encouraging sustainable development in the hotel business. The group has set up an interactive website, offering a virtual view representing the application of these resolutions, in a virtual hotel. Most of the resolutions emphasized on the website illustrate real and concrete examples of the application of technology transfer (Acting for life, 2009).

4.1.3 Malaysian Entrepreneurs

Below are few examples of Malaysian Entrepreneurs venture in tourism industry. Jacky Chan is the founder of Tripviss Technology, a platform that connects global travellers with multiple local experts who best fit their travel's needs. The entire technology and marketing were built from scratch and developed in-house to ensure the maximum consistency and quality. Tripviss is an Online travel platform that works with 300+ local tour operators around the world, offering 6000+ tour packages and covering 50+ countries. It raised 7 figures of funding and was backed by high-profile venture capital. It is also the first technology travel company accorded with MSC (Malaysia Security Commission) status, recognition by the Malaysian government. In addition, Tripviss was also featured on few major press releases, such as Focus Malaysia, Tech in Asia, Crunchbase, e27, TravHQ, Yahoo News (Singapore), and Leader Speak (India). Aside from the proud recognition, Tripviss is also considered as the most beautiful and sophisticated travel portal in Southeast Asia. The portal provides more than 40 features that enable visitors to browse, view, ask, book, and even group purchase directly. On the other hand, the portal also provides a very powerful backend system for administrators to track, monitor, and manage their products and sales. From a traction perspective, Tripviss has made a profound history, which successfully increased the number of Facebook followers from 0 - 270,000 within 6 months. With a monthly 20 million post engagements, 10 million post reaches, 1.5 million video views, and 100,000 of post shares, Tripviss has brought in more than 30,000 new authentic leads to the portal every month.

Similarly Tripfez, founded by its CEO Faez Fadhilillah, was established in 2015. It also introduced Salam Standard, a hospitality information tool for the unique faith-based requirements of Muslim travelers. Promoting Muslim-friendly travel, Tripfez, via Salam Standard, wants to enable the availability of information for various aspects of travel and tourism ecosystem for a segment of travelers. This ranges from transportation to accommodation, food and beverage choices, as well as facilities available at tourist attractions. Tripfez is looking to launch Muslim-friendly tours this month, for Malaysia as a start, by working with a large travel supplier, but will create packages for both domestic and international packages soon. Within six months to one year, it wants to increase its presence and integration with global travel sites, increase its inventory within the tour space, as well as conduct branding and marketing initiatives. This is in order to be the single source of information on Muslim-friendly travel, as well as unify and create a standard for Muslim travel, while simultaneously providing options.

4.2 Barriers in Implementing Technology Transfer

Technology is currently the biggest trend, especially in tourism and hospitality industry, and is predicted to be the number one trend for years ahead. When a phenomenon becomes a trend, it will come into issues and barriers. Millennials have a high interest in fully utilizing technology for everything, from booking, check-in hotels, paying bills, and comparing and looking up places to eat, shop, and many more. Technology has changed the business rule by providing information on all services available virtually all over the world, which means that the potential client can be a resident of anywhere. Technology also expands marketing opportunities. Yet, Malaysian entrepreneurs face barriers while implementing the technology transfer process. There are ten barriers that have been identified as follows;

4.2.1 Online payment

Payment made via online transaction and debit and credit card is easier and faster, but safety and security measures remain major issues. Despite the fact that technology has benefited us, we still have to be extra careful with our personal data. Data stored online and credit cards are dangerous, as it contains sensitive data such as address and account bank details. Online theft and misuse of personal details make people reluctant to implement the technology.

4.2.2 Internet connectivity

Another drawback of technology is that when the servers are down, nothing can be done during that moment, and all activities cease until the server is up and running again. This usually occurs during peak hours when the server is exhausted due to processing too many data packets simultaneously. Therefore, companies need to ensure that server hardware, such as routers, switches, and cables are up-to-date and can accommodate the processing of data to avoid any hiccups in the future. If the company rents outside servers, they have to ensure that they select suitable servers with the right amount of big data. Nevertheless, the suppliers will usually maintain their servers monthly so that they can ensure that they deliver the best and high quality services to their clients.

4.2.3 Viral news

Despite the fact that technology helps increase number of customers, tourism and hospitality leaders cannot take this for granted. Another trend in technology is viral news using social media, which can also be a tool to attack providers who provide low quality services. If what the travellers are looking for is not handled properly, they will turn to Twitter, Facebook, Yelp, or TripAdvisor to voice out their complaints (Rauch, 2014). When this takes place, it gives bad reputation to the businesses, and no one will recommend them to others. This reach is decidedly global due to the internet. Traditionally, word-of-mouth is a powerful tool in business, but today, technology has made it the most powerful tool for selling businesses.

4.2.4 Infrastructure

Resort and hotel developers in Malaysia face significant number of issues in developing sustainable tourism accommodation in Malaysia. Muhamad S. Salehudin (2014) identified that there are insufficient technology and skilled people to develop sustainable resort and hotel in Malaysia. For example, most low environmental impact construction materials such as recycled timber and lightweight bamboo frames are being imported. Furthermore, technology such as low flow plumbing water system, water recycling system technology, solar energy, and wind turbine technology need to be imported. The cost of transporting technology to Malaysia is quite high. The developer also pointed out that this situation will increase the overall development costs relative to conventional resorts and hotel development. Moreover, the resorts' or hotels' employees need to be sent to other countries to undergo training courses on sustainable or clean technologies. There is a lack of standardization and technologies that prevent entrepreneurs from excelling in this industry, first locally, then globally.

4.2.5 Technology readiness

It is undeniable that technological innovations improve customer service level and hotel operations in many ways (Prabhu, 1996). Among the challenges of keeping up with fast changing technology is the usage of interactive reservation system, which enables reservation through internet. Despite the high costs involved in installing the technology, computerized yield management help maximize hotel's profitability, and database systems can be used for effective planning (Blum, 1997).

Nowadays, most hotels use online reservation system. This challenge was highlighted by Nor Zafir (2010) in the case of Malaysia. She conducted a quantitative research, and highlighted that issues include complaints by tourists on the reliability of online reservation system for hotels in Malaysia. For the tourists, they reserved their room and paid online, but when they arrived, they could not find their reservation or payment record. This tarnished the image of Malaysia, as most independent travelers reserve their hotels online. This is also one of the key factors to become a global entrepreneur and a challenge which the young entrepreneurs need to cater to if they want to be global players.

4.2.6 Government policies

Policy planning of tourism development in Malaysia is comprehensive and top-down in nature. As tourism is a Federal matter, MOCAT/MOT has provided the overall framework and direction for tourism product development since 1992, coinciding with the advent of 'big time tourism' in Malaysia, as per Amran (2006). The development policy in Malaysia is for new or developing facilities rather than developed or mature tourism accommodation facilities. Interview sessions conducted by Mohammed (2014) stated that most of tourism stakeholders assume that only early planning at the design stage for new development tourism facilities can incorporate issues of environmental, culture, social, and local economic empowerment.

According to a policy review conducted by Tan (2016) on government policies embodied in both the NEM and 10th Malaysia Plan, it was evident that the government has realized not only the importance of the industry as a whole, but also the need to improve the infrastructure handling international visitors for both business and leisure. In the NEM, two of the policy prescriptions advocated were to further prioritize air and port infrastructure, and improve the tourism services to ensure seamless and quality services along the T&T value chain (National Economic Advisory Council, 2010). The government plans highlighted the fact that these policy initiatives can have beneficial spill overs that can enhance the quality of the domestic tourism and hospitality industry, as well as its capacity to handle international trade and logistics.

4.2.7 Funding

According to previous studies on the presence of a high number of small business owners compared with the number of real entrepreneurs in the tourism sector (Komppula, 2004; Morrison et al., 1999). Based on that, similar research was conducted in Malaysia by Jafar (2011), where the majority did not report profit and growth as their main motivators, supporting Dewhurst and Horobin (1998). As small business owners, they opened and managed small-sized businesses due to their limited resources. They tend to keep their business to a size that is controllable and manageable. Thus, the challenges of keeping up with the fast pace of technology is difficult and expensive, and high technology transfer adoption is difficult in such a scenario.

4.2.8 High cost

Multiple telephone lines, interactive opportunities for ordering room service, and guest-room check-out are examples of amenities that guests increasingly desire, but they are very expensive to install and implement.

4.2.9 Skilled labor

The lack of trained workers across a wide range of occupations and skill levels, from licensed and skilled tourist guides to unskilled laborers in hotel and tourism industry are limiting the growth of the industry and hindering the technology transfer process. This problem was echoed by the Economic Transformation Programme

(ETP), which pointed out that the industry faces two specific challenges: to ensure sufficient supply of the required human capital and the shortage of local talent entering the industry. To meet the ambitious plan of the tourism industry, ~497,000 additional workers would be needed in 2010-2020 (Pemandu, 2010).

4.2.10 Knowledge gap

The gap is a failure to transfer research and best practice to the end user. Sometimes, this is also caused by poor absorptive capability on the part of the user, but it is also caused by carelessly designed research projects, where the transfer process is not understood. This is a serious issue in tourism, where knowledge creation, transmission, and use are often unstructured and informal, with decisions commonly made without the awareness of what is available. Because tourism is a service industry, its knowledge management is also limited by the fact that statistical reporting is still based upon the old economies of physical resources, while metrics for the knowledge economy are still being developed (ABS 2002; Bahra 2001; Jones 2001). For tourism, barriers to transfer are related to its very nature. It is dominated by small enterprises, fragmented across a variety of activities, and has vocational reinforcers, such as poor human resource practices militating against the continuity of absorption. As a result, there is a lack of trust between the knowledge creators and those who might use it, due to the different cultures and vocabularies of differing communities of practice (Hjalager 2002).

■5.0 CONCLUSIONS

In the past, tourism was considered a luxury. It was reserved for the social elite, and traveling to known destinations was traditionally promoted. Technology created opportunities for emerging destinations, irrespective of their economic status. Profiling destinations and promoting disadvantaged segments expand their commercial reach. Such transformation impacts the rapid economic development of the Developing and Least Developed Countries (LDCs). Such changes will justify the universal promotion of tourism and decrease discriminatory effects in global travel and tourism industry. This is all influenced by technology and knowledge transfer and its adoption. In short, technology transfer is absolutely important and beneficial to Malaysian tourism industry, since the trend of globalization of the world economy has increased. The world has become more integrated via increased trade investments and capital flows, as well as labor movements. However, there are still barriers faced by the entrepreneurs, but if there is government help, these barriers and challenges can be overcome.

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