Tourism Industry: Adoption of Information Communications Technology (ICT) in implementing E-Tourism

Muhamad Syihabuddin Naufal\(^1\), Ummi Salamah\(^2\)

\(^1\) Mahasiswa Pascasarjana Ilmu Komunikasi, FISIP, Universitas Indonesia, e-mail: syihabnaufal@gmail.com
\(^2\) Tenaga Pengajar Pascasarjana Ilmu Komunikasi, FISIP, Universitas Indonesia, e-mail: ummisalamah15@ui.ac.id

Abstract
This conceptual paper will discuss the use of information communication technology (ICT) in the industry of e-tourism. It is undeniable that at present with the development of Industrial Revolution 4.0 again traditional technology becomes more interactive. It also changed the behavior patterns of people in traveling or tourism activities. Tourism organizations or institutions have also undertaken various efforts to adapt to these technological developments. There are a variety of new online-based media that provide facilities to travelers to access and plan the trip easily and quickly. The impact of ICT usage becomes clearer where future e-tourism development will trigger consumers to be more proactive and reactive, and e-tourism will focus more on customer-centered technology that will support organizations to interact with their customers dynamically.

Keywords: tourism industry, information communications technology (ICT), E-Tourism

Introduction
The tourism industry is one of the most important aspects in improving a country’s economy. This leads to the multiplier effects, which one of the simplest instance is the income could be generated and circulated from the tourists who visit certain places or specific locations (Rusu, 2011). As a matter of fact, we know that people not solely go travel in a place without any side sectors as complement. Tourism could establish the wide effect of economy to society in a region especially around tourism attraction. Each country must have objects and attractions that can attract local and foreign tourists to visit. The tourism attraction is a public site and is used to provide experiences, goods and / or services intended for visitors or non visitors, with the facilities and products for tourists (Frew, 2000). Therefore, potential tourism attractions can lead the industries to manage them as an effort to develop the potential source in a region.
Currently, the tourism industry has been leading in business development through the emergence of internet. It also presents a new challenge for industry actors engaged in tourism sector. The growing of industrial revolution 4.0 prompted traditional companies to invest in more modern strategies such as e-commerce and thus emerging new online agents (Stockdale, 2007). Moving from traditional information dissemination initially and now consumers can interact directly to the content on the Website. The administrator of tourism organizations can involve the desire and participation of consumers, to get their preference. Therefore, by using the information industry players can provide personalization of communications and services to consumers. Content from Websites serving tourist destinations is important because it can directly influence consumers by providing a virtual experience and an impression toward tourism destinations (Doolina, Burgessb, & Cooperc, 2002).

Over the last decade, technological developments and innovations have improved the traditional marketing strategies and greatly modified the distribution network (Hjalager, 2010). The development of industry 4.0 made the tourism industry need to adapt to the technological developments. These days, information and communication technology (ICT) which utilized in tourism industries would generate a new system called E-Tourism. Through the use of modern information and communication technology, traveler could now utilize their own devices to make their own travel plans. Research conducted by Stockdale (2007) examined the self-service technology in E-tourism which states that now people can plan and order all the necessities for their own journey. Later research by Sahli and Legoherel (2015) mentioned that the Internet is already a part of the Tunisian society, so they predicted that the future of tourism product booking via internet in Tunisia will increase.

The development of ICT has an undeniable impact on the possibility of developing a tourism company, either in local or global scale. It was estimated that the world's 40% turnaround in the tourism sector results from the adoption of ICT techniques, most often associated with the web side of travel agencies or aggregators of these advertising offering which provide electronic transactions and online booking systems for hotels and airlines (Januszewska, Jaremen, & Nawrocka, 2015).

E-tourism concept is interesting to explore further because it is possible for Indonesia which has many potential of tourism attraction would adopt and utilize the information and communication technology. In this conceptual paper, the authors will describe the concepts related to the tourism industry along with information and communication technologies, and their implications in the implementation of e-tourism within the organization or the institution of tourism industry.
Literature Review

Tourism Industry

According to Dirk Glaesser (2003) tourism is a phenomenon in the modern era and describes in general that related to travel activity. Generally, there are three constitutive characteristics in tourism which are location change, temporary residence and there are motives. Glaesser also cites the definition of the World Tourism Organization (WTO) and the United Nations (1994), tourism should be understood as ‘an activity of people traveling to a place and living in places outside the neighborhood they normally occupy for no more one year in a row for holiday, business or other purposes’ (Glaesser, 2003).

Services in tourism According to Pease et.al (2007) includes transportation services, auxiliary activities (eg travel agents and tour operator services), accommodation and food services (eg hotels and restaurants), entertainment and recreation services (eg historical sites, museums, amusement parks, etc.), as well as related products and services (eg retail, manufacturing, finance, and property-related services). These sectors are the various industrial structures, environmental competitions, business models, value chains, and the factors of success in the tourism industry (Pease, Pease, Rowe, & Cooper, 2007).

Theoretically the depiction of the tourism system can be said to be quite complex, it is characterized from interpersonal relationships and various other relationships with the environment. This is related to organizational theory about organizational relations with the environment. According to Glaesser citation from Ulrich and Probst (1995) defines a company as a productive social system for maintaining relationships with its environment as an open structure. Different parts of the system are so related to each other that no part is independent of other parts and the overall behavior is affected by the combined effect of all parts. Hatch (1997, page 38) has an additional statement that an open system within an organization can be seen from how an organization's mechanism can take energy sources from its environment as input and then transform the process to create an output that can maintain the sustainability of an organizational system. All elements outside the enterprise system are part of the environment, which can be divided into dimensions and institutions such as ecology, technology, economic, social, and even expanded to the scope of politics and law. The chart below illustrates the system in the tourism industry cited by Glausser from Kaspar (1998) (Glaesser, 2003).
The image above may provide an institutional explanation of the environment within tourism system that separate the institutions or groups of individuals, such as states, customers, competitors, capital investors, suppliers and employees. Meanwhile, as a subsystem in tourism, the subject of tourism in this case is the tourists / tourists can be distinguished from the institutional subsystem ie ‘destinations’, ‘tourism companies’, and ‘tourism organizations’.

**Information Communication Technology (ICT)**

The term of information communication technology (ICT) was widely used in the 1990s in the 20th century as a consequence of the emergence of the Internet and used by the public. The using of web and e-mail has begun to develop at that time. Therefore, for that reason the term ICT is usually associated with computer and Internet applications (Uwin, 2009). According to Niebel et al. (Niebel, Kopp, & Beerfeltz, 2013), information communication technology (ICT) covers all equipment and technical facilities that transform, process, store and transfer various types of information in digital form. This includes voice telephony, data communications and computers, radio, television and similar technologies. Copper cables, fiber optics and various wireless technologies can be used for disclosure and for the exchange of context data.

Based on Hatch’s point of view (1997), technology is everything that is used to achieve a desired outcome, or target, is usually conceptualized with a product or service. In a modernist perspective, technology is divided into three forms:

1. Physical objects (artifacts): this shape is like the products and tools used in production.
2. Activity or process: includes methods in production.
3. Knowledge needed to develop and apply equipment and methods in producing specific outputs

Research conducted by Aston said that technology has a great significance to the relationship of structural performance when either the organization is small or large. The explanation emphasized that when an organization comprises a technical core that transcends the boundaries, the technology has significance and is likely to determine the effect in the social structure. But as the organization gets more complex then the relationship will disappear (Hatch, 1997).

A study has revealed that there is an increase in internet penetration by 10% points in low- and middle-income countries. It will have the potential to boost economic growth by 1.12% points. Economic growth generated through minimal ICT is caused by two factors, for example telecommunication technology, internet and email have significantly reduced the expenditure in communicating, and then able to stimulate life change and human interaction. ICT also plays an important role in enhancing innovation capacity of an economy that enhances the knowledge base. The following diagram of the growth impact of ICT in percentage points conducted by Worldbank in 2009.

![Growth Effect of ICT in percentage points](image)

The results of the above research explain that the axis (y) represents economic growth per 10% in increased telecommunication penetration. The diagram explains that all statistically significant results have an average increase of 1% points except for broadband in developing countries which is significant at 10% points (Niebel, Kopp, & Beerfeltz, 2013).

**Discussion**

**ICT in implementing E-Tourism**

The concept of e-tourism is basically as a result of the emergence of information and communication technology (ICT). Begun in the 80s, information and communication technology (ICT) changed the domain of tourism globally.
Achievements in the ICT domain change undeniable practices, business strategies, but also structurally industries (Porter, 2001).

According to a journal written by Iulian Condratov (2013) in 2000, he can observe that ICT domains are said to be the main trigger for the development of a wide range of instruments and services that facilitate interaction among market participants at a global level. The development of search engines, transport capacity and network speed has affected the number of tourists from all over the world who use technology for planning and documenting their travel.

Social media is increasingly important to help consumers plan and enjoy travel when they switch to online and mobile technologies. Travelers are socially connected not only before and after but also increasingly during their trip thanks to mobile devices. In response, the tourism industry must use social media much more intensively (IPK-International, 2012/2013).

A literacy review from a previous study explains some of the key advantages in the use of ICT in companies or agencies engaged in tourism, as explained in the table below (Januszewska, Jaremen, & Nawrocka, 2015).

<table>
<thead>
<tr>
<th>No</th>
<th>Advantages</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In the tourism sector, ICT has opened a new opportunity of <strong>engagement</strong> between members on one distribution channel, as well as providing new management solutions that enhance this relationship. The intensity of information exchange among companies operating in the same distribution channel has resulted in improving of <strong>efficiency</strong>, due to the enhancement of information exchange, it could highlights shared interests and goals, which ultimately facilitate collaboration.</td>
<td>(Berné, Margarita García-González, E. García-Uceda, &amp; M. Múgicad, 2015, hal. 188-198) (Spralls, Hunt, &amp; Wilcox, 2011)</td>
</tr>
<tr>
<td>2</td>
<td>Offering the <strong>easy, real time access</strong>, data and information can quickly identify customer needs and reach potential clients with comprehensive, personalized and up-to-date information and forge new ways to satisfy consumer needs, as it enables to provide information from across the entire value chain tourism.</td>
<td>(WTO, 1998)</td>
</tr>
</tbody>
</table>
Conclusion and Suggestions

The impact of ICT usage becomes clearer where future e-tourism development will trigger consumers to be more proactive and reactive, and e-tourism will focus more on customer-centered technology that will support organizations to interact with their customers dynamically. The development of new and more powerful ICT applications will

<table>
<thead>
<tr>
<th>No</th>
<th>Advantages</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>ICT makes the tourists more knowledgeable, demanding, empowered and plays an active role in planning, designing and determining services and products, tourism companies can use consumer knowledge to make their offerings on one side and not forgetting tourists as an important part of the tourist value chain.</td>
<td>(Prahalad &amp; Ramaswamy, 2004)</td>
</tr>
<tr>
<td>4</td>
<td>ICT helps out the tourism companies to gain competitive advantage because: access to reliable and accurate information or to large sizes and global markets, greater market share, build closer relationships with suppliers and customers, maintain price leadership on the market or / and differentiate and improve their products.</td>
<td>(Buhalis, e-Tourism: Information technology for strategic tourism management, 2003)</td>
</tr>
<tr>
<td>5</td>
<td>Allow promotion and distribution of tourist products directly to consumers, reduce dependence on intermediaries (disintermediation) and sales commissions paid to intermediaries and access information directly and almost free of charge, ICT reduces transaction costs (finding information, distribution, promotional costs) and increasing profits.</td>
<td>(Buhalis, 1998 )</td>
</tr>
<tr>
<td>6</td>
<td>Increase social inclusion for tourist mobility (eg share knowledge of points of interest worth visiting, easy access, evaluation of accommodation facilities etc.)</td>
<td>Januszewska, Jaremen, &amp; Nawrocka, 2015</td>
</tr>
<tr>
<td>7</td>
<td>Accelerate management procedures and support efficient tourism company functions</td>
<td>Januszewska, Jaremen, &amp; Nawrocka, 2015</td>
</tr>
</tbody>
</table>
empowers providers and tourism destination managers to improve efficiency and refine their communication strategies.

In the field of marketing, the distribution of tourist services undergoes considerable modification in technology. So that organizations or agencies engaged in a tourism midwife should continue to develop their own science base and to improve management and marketing functions. Because it is not possible, the use of modern devices in tourism organizations in the future will be more widespread. By using the internet as a marketing tool, tourism organizations will benefit greatly as it reduces operational costs, thereby increasing revenue. Marketing research and development of customer knowledge and maintenance base must also be done to maintain organizational stability.

The development of modern technology in human life can not be denied. No exception to the tourism sector that will continue to adapt and will never have a dead point. It is likely that tourism industry actors will continue to update their work system by replacing human laborers with ICT devices. Based on author point of view, it will have a positive impact and also negative. In addition to the various advantages that have been submitted above, be aware to adapt to the latest technology in the implementation of E-tourism takes a short time. In particular, Indonesia needs considerable effort to manage human resources to shift from traditional systems into modern systems. It needs a special technical program to provide facilities to human resources in Indonesia to be able to adapt to the development of ICT so that they could maximize the implementation of E-tourism.

References


