Using Internet Multimedia to Promote the Local Business:---A Case Study of Alishan

Tingsheng WENG
Department of Management Information Systems
National Chiayi University
580 Sinmin Rd., Chiayi City 600
Taiwan

Abstract: - Values created by business and individual activities, such as e-commerce, digitalized lifestyle, and online learning, have gained high expectations with the worldwide popularity of information and network technologies. As a result, the digitalized society has been vigorously created. In this study, we used the keyword “Alishan” to search related information via Yahoo and Google, and did not found any websites built by 3D digital technique. The rise of globalization has caused the reproduction of foreign culture and sightseeing areas as well as the competition of tourism in the world, which urges the promotions of tourism in Taiwan. People have become aware of the importance of tourism, and the government has started to promote local cultural and recreational activity. By using the internet and multi-language to present local history, humanities, and nature, the government can sufficiently present local county’s abundant features and effectively attract tourists. This paper combines the multi-media technology to build an interactive 2D/3D website for Alishan tour guide. It offers multi-languages options, including Chinese, English, and Japanese. This website presents the sunrise by dynamics 3D technology, and provides 3D guidance of each Alishan railway station. It also offers e-book to introduce the indigenous Tsou people’s festivals and particular eco-sightseeing source. By introducing Alishan to the world on the Internet, we also provide e-book that enhances the e-learning activity, and information about digital life. The richness of information will promote Taiwan in international culture development and tourist market.

Key words: - Multilanguage website, 3D, International, Alishan national scenic area, e-Learning, flow

1. Introduction
The Internet has brought unlimited possibilities of development space to business applications, and the travel guide application combined with the Internet, can improve additional value and appeal to tourists. The Internet’s pluralism and multimedia network offer plenty of space to fulfill the demand of tourism which is designed for individual needs. And the travel guide combines with the digital content, and becomes a new trend.

In the era of information explosion, there are abundant online information available on traveling guide. Information Richness (Daft & Lengel, 1984) theory suggests only the right amount of information could reach the goal of optimal dissemination.

The amount of information on scenic spots has increased constantly, from sources of newspapers, magazines, and the Internet. Such as internationally renowned forest recreational area – Alishan Forest Park, and Kenting international park, etc. Daft and Lengel (1984) propose the information task in an organization make the appropriate information demand and reduce equivocally. Because under the situation of high task uncertainty, the increasing amount of information becomes ineffective. The administrator in an organization needs to identify the problems, instead of presenting more information. Internet browsers are facing the same situation as the administrator does, namely to digest and utilize the massive information available, instead of searching for information. The information richness should focus on the appropriate amount of information that contributes to the comprehension of information, which is beneficial to the achievement of information task. What marketing should emphasize is explosion; in other words, the popularization of products to increase the people’s acceptance of the products. So it is necessary to understand if the content of the online information would be comprehensible and acceptable by the browsers. Daft and Lengel’s theory is applied to the design of online travel guide to change the traditional concept that the more amount of information, the better.

2. Websites for Alishan
People can plan the trips to Alishan more effectively if useful and abundant information could be provided via multimedia. Presenting an interactive website, can attract browsers to visit Alishan, which would enhance the local economy and better preserve the
local ecology and culture.

The keywords related to Alishan can include: humanity economy, geography, scenic spots, traveling schedule, etc., and are detailed as follows:
1. Humane economy: Introducing the culture, economy, and historical background of Alishan.
2. Geography: Introducing the weather, animals, plants, and geographical location of Alishan.
3. Scenic spots: Introducing the popular scenic spots in Alishan, including sunrise, sea of clouds, divine tree, and forest railway, etc.
4. Traveling schedule: Taking into consideration of the seasons, in order to offer most appropriate traveling schedule to the visitor.

The followings are the 10 most popular websites for Alishan in Taiwan. This research utilized 2 largest portal sites, Yahoo and Google to sort out keywords regarding to Alishan between January to March of 2007 which is the peak of traveling occasion due to the Chinese New Year vacation and winter break of schools. The top 10 websites are shown in Table 1 and Table 2.

<table>
<thead>
<tr>
<th>Website's name</th>
<th>Website address</th>
<th>Website's description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Alishan national scenic area administration official site</td>
<td><a href="http://www.ali.org.tw/">http://www.ali.org.tw/</a></td>
<td>With 3 languages available, the contents contain animations.</td>
</tr>
<tr>
<td>2. The Alishan forest railway</td>
<td><a href="http://railway.forest.gov.tw/">http://railway.forest.gov.tw/</a></td>
<td>Abundant content with a series of introductions to humanity and history of Alishan.</td>
</tr>
<tr>
<td>5. Forest traveling area of Alishan</td>
<td><a href="http://recreate.forest.gov.tw/forest.php?init=05&amp;char=big5&amp;forest=3">http://recreate.forest.gov.tw/forest.php?init=05&amp;char=big5&amp;forest=3</a></td>
<td>Introducing the scenic around Alishan by presenting beautiful photos</td>
</tr>
<tr>
<td>7. Tourist service network of Alishan</td>
<td><a href="http://www.ali.org.tw/tc-index.php">www.ali.org.tw/tc-index.php</a></td>
<td>The content contains both pictures and the music</td>
</tr>
<tr>
<td>8. Stroll in the clouds</td>
<td>alishan.cyc.edu.tw</td>
<td>It provides interactive guide on direction and others.</td>
</tr>
</tbody>
</table>

(Data collected from January to March, 2007)

<table>
<thead>
<tr>
<th>Website's name</th>
<th>Website address</th>
<th>Website's description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Alishan national scenic area administration official site</td>
<td><a href="http://www.ali.org.tw/">http://www.ali.org.tw/</a></td>
<td>With 3 languages available, the contents contain animations.</td>
</tr>
<tr>
<td>2. Tourist service network of Alishan</td>
<td><a href="http://www.ali.org.tw/tc-index.php">www.ali.org.tw/tc-index.php</a></td>
<td>The content contains both pictures and the music</td>
</tr>
<tr>
<td>3. Traveling area of national forest</td>
<td><a href="http://recreate.forest.gov.tw/forest.php?init=05&amp;char=big5&amp;forest=3">http://recreate.forest.gov.tw/forest.php?init=05&amp;char=big5&amp;forest=3</a></td>
<td>Introducing the scenic around Alishan by presenting beautiful photos</td>
</tr>
<tr>
<td>5. Alishan house</td>
<td><a href="http://www.alishanhouse.com.tw">www.alishanhouse.com.tw</a></td>
<td>Introducing the scenic around Alishan by presenting beautiful photos</td>
</tr>
</tbody>
</table>
We searched 34 websites from these 2 portal sites on Alishan and listed 10 top websites on each portal site. However, not all the 20 websites linked from portal sites are effective sources. For example, 3 websites, including “Alishan National Scenic Area Administration Official Site”, “the Alishan Forest Railway” and “Stroll In the Clouds” are repeated on both portal sites. Furthermore, the website of “Tourist Service Network of Alishan” actually links from “Alishan National Scenic Area Administration Official Site”, thus they are the same source. In addition, “Ying Shan Hotel in Alishan” provides only presentations of hotel itself rather than the introductions of Alishan sightseeing information. The study took the following 3 popular websites into investigation:

2.1 Alishan National Scenic Area Administration Official Site
The official website of Chiayi tourism bureau presents information on humane economy, natural resources, and geographical locations of Alishan to visitors, with features of short film, sound book, and virtual tour. Other information available includes local resorts, traffic information, and local specialties, so as to attract more visitors. The website offers Chinese, English, and Japanese versions, allowing foreign visitors to utilize the website and learn more about Alishan.

2.2 The Alishan Forest Railway
The websites mainly introduce the railway in Alishan, including the history and features of the forest railway, including the locomotive engine, in order to attract more visitors. There are also films on the Alishan railway and local bat species for interested tourists.

2.3 Stroll in the clouds
This website is design like a forum, with interactive feature for online discussion, so that browsers can express theirs opinion and thoughts, as well as upload photos or films of Alishan. The multimedia technology and virtual tour have presented the beauty of Alishan to visitors.

The 3 websites discussed above all have interactive features, photos, short film. Among all 34 websites studied by this research, none presented 3D technology. Thus, this research attempted to develop a 3D website and e-book to present the nature and beauty of Alishan.

3. Literature Review

3.1 Present situation and features of online tour
Beside the suggestions for money-saving trips, in order to appeal browsers, the online tour websites should offer services, such as information collection and design of travelling plans for individual needs. With the change of lifestyle and family type, the trend of traveling has become popular. Thus, if service quality can be improved, including shortening the transportation time, reducing cost, providing more useful information, consumers would be more willing to travel.

Browsers would undergo 5 steps in order to select the optimal travelling location: forming the idea, information collection, evaluation of the plan, making the choice, and action. The most influential step depends on whether the information collection is convenient or not (Kotler, 1984). Browsers are concerned more about functions of the introductions to the scenic spots and display of real pictures on a website.

Online travel information has become abundant, but also makes users more confusing. The Economist magazine (2002) in Britain advised that traditional travel agency should become customer service oriented by providing individualized information and suggesting customers to choose the
uncertainty can be reduced.

By providing service and various amount of information demands have different needs on Users with different objectives, experiences, and their uncertainty and help them making decisions. In the behavior of browsing, the website provides the function of informing and the browser plays the role of evaluation. Therefore, the browser obtains large amount of information from the website for personal evaluation.

Most online browsers in Taiwan are using the Internet for shipping, thus information could reduce their uncertainty and help them making decisions. Users with different objectives, experiences, and information demands have different needs on different. By providing service and various amount of information for individual needs, equivocation and uncertainty can be reduced.

With Internet technology, a large amount of information can be transmitted on the Internet, and multimedia technology brings more variation to Internet usage. Therefore, this study introduced 3D animation to provide the environment of education and entertainment.

3.2 Search behavior on the Internet

According to the network report, the main purpose of Internet browsers is to browse/search information. And over 70% (Institute for Information Industry, 1999) network browsers thought that there is lack of useful information on shopping or selecting a service. In the behavior of browsing, the website provides the function of informing and the browser plays the role of evaluation. Therefore, the browser obtains large amount of information from the website for personal evaluation.

Most online browsers in Taiwan are using the Internet for shipping, thus information could reduce their uncertainty and help them making decisions. Users with different objectives, experiences, and information demands have different needs on different. By providing service and various amount of information for individual needs, equivocation and uncertainty can be reduced.

With Internet technology, a large amount of information can be transmitted on the Internet, and multimedia technology brings more variation to Internet usage. Therefore, this study introduced 3D animation to provide the environment of education and entertainment.

3.3 Information enrichment theory and media richness theory

The information enrichment theory offers the method and skill to information users, in order to help the communication. Information enrichment theory (Daft & Lengel, 1984) contains 4 constructs: Information enrichment task complexity, uncertainty, and equivocation. The information richness is associated with the learning ability of communication. As soon as the information is highly filled with uncertainty and equivocation, the information needs to cooperate with the media that can pass abundant information in order to effectively deal with the information. Therefore, the association between information richness and media depends on the media’s ability of transmitting information. This is the concept of Media Richness.

3.4 Flow theory

Flow theory suggests that an individual is attracted by the activities the one is engaged, and incorporates one’s experience to centralize and narrow down the thoughts. The individual makes independent consciousness and thinking neglected, only react to concrete goal and clear feedback because of forgetting me, and produce the sense of controlling through the control of the environment (Csikszentmihalyi, 1975). Susan and Csikszentmihalyi (1999) identified the following factors that influence individual flow and fundamentals: (1)Challenge-skill balance: Challenge-skill balance is the golden rule of flow. In order for an individual to reach flow, not only the balance of challenges and skills should be reached but the balance has to exceed the individual’s standard ability. If an individual has strong skills but faces weak challenges, the individual would be bored. If the skills are inferior to the challenges, anxiety would occur. (2)Actions-awareness merging: It means that consciousness is integrated into actions, and all actions are carried out spontaneously by the individual, such as natural breathing with heartbeat. (3)Clear the goal: Clearing the goal can make individuals focused, and the goal is the work that the individual wants to finish instantly and has the control over the feedbacks of the work. (4)Unambiguous feedback: The feedbacks vary with individuals. An individual experiences fun only if the feedback is associated with individual’s investment. (5)Concentration on the task at hand: The individual should neglect other independent consciousness and information when there is task at hand; when there is no noise, the goal can be reached without obstacles. (6)Sense of control: The sense of individual control on the surrounding environment makes the individual believe that everything is under control and he/she is powerful. (7)Loss of self-consciousness: The individual lose the sense consciously, thus, all negative consciousness (bear) are disappeared. (8)Transformation of time: The changes of the sense of time is that an individual perceives the length of time differently, and experiences it through the realistic environment, such as the individual perceives several hours in reality as only several minutes, or perceives several minutes in reality as only several minutes in reality as an imaginary or empty dream. An individual would more easily to experience flow if the restriction of time is gotten rid of. (9)Autotelic experience: The individual would invest full efforts as soon as he or she does not pursue other feedbacks in the future but doing itself.

While experiencing, the skill with challenge is the most important about influence factor among them, the two must be balanced, hasten to make the individual march towards higher level. 'immerse' experience and is shut oneself humorously by an individual, enjoy actions-awareness merging in experiencing feeling. Because of individual being in the activity with single-hearted devotion, chasing can finish the task that can't be finished usually, but the individual has not realized at all the challenge that the activity brings already can exceed the intensity in the
place. ’immerse’ the one that experienced and enabled individuals was affirmed oneself, impelled it to study the new skill hard (Csikszentmihalyi et al., 1988).

3.5 Internet flow

After the internet network grows vigorously, a lot of scholars also begin to study the individual ‘internet network flow’ to experience. Hoffman and Novak (1996) as the thing that the user involves Computer-Mediated Environment(CME) Network interactive, it define four kinds ‘immerse internet network ‘ disease, it include: characterized by a seamless sequence of response facilitated by machine interactivity, intrinsically enjoyable, accompanied by a loss of self-consciousness , self-reinforcing. Scholars such as Hoffman, etc. think the internet network flow that is influenced by the following factors: High skill and perceived control, high challenge and arousal, the focus attention, interactive, telepresence. The ones that take shape are strengthened, etc. Thereafter a lot of research reveals the internet network flow that experience and indulge in the main reason why the network uses for the internet browsers (Novak et al., 2000). User entering experience, thinking and consciousness its involved in website function that is using definitely, but totally fall into in experiencing with the interactive of websites.

Scholars (1996) such as Hoffman, etc. Put forward the internet network flow it after the concept structure of the state, and read the scale of developing that is according to its literary composition, the factor of the state is as follows, that influences users to enter the internet network immerse that canal, etc. are put forward arousal, challenge, perceived control, the focus attention, interactive, involvement, playfulness, skill, telepresence, time distortion etc. (Novak et al., 2000).

People’s interest in promotion activities or their responses may differ according to ages, younger people tend to have greater interest (Webster, 1965) to the advertisement. Those with higher educational level tend to be more open to new products or new things/information, and absorb and understand the new information easier. In terms of careers, students may be prone to higher promotion due to consumption capacities (MeiQi Liu, 1995). If we consider incomes, the high income person has higher promotion to react (Blattberg and Sen, 1978).

Users of travel websites are mostly consisted of younger generations. Regarding occupations of the users, Lu et al. (2006) found that students and business men are the most 2 populations. Therefore, this research intended to employ the modern multimedia technology to construct an interactive travel guide website specifically for the younger generation, such as white-collar workers or business men. The website built by this study targets users of two major populations and applies the flow theory. The users would spend their leisure time to browse the website; in the meanwhile, they would enjoy the interactive information provided by our website.

3.6 Tourism value of Alishan

Alishan was first developed at the end of the 19th century by setting up forestry regulations and administration under Japanese occupation. In 1986, a large area of Chinese juniper was found in Alishan, and it is still the largest area of Chinese juniper in Taiwan. The railway from Chiayi to Erwanping was constructed 1911, and the section from Erwanping to Tashan, Mianyue was constructed in 1912, which led to over 30 years of lumbering history (Koniti Tokuda, 1996), as well as economic prosperity.

The tourism theme for Alishan in 2001 was “Green hill, green water, and cool paradise”. For environmental production purpose, the function of Alishan forest has transformed from lumbering to eco-tourism and plantation today. The forest railway of Alishan is now the most well-known tourist attraction, and has accelerated the development and prosperity of local tourism. The local government now pays serious attention to protecting the resources of Alishan to make it a true world-class tourist spot.

Bring Alishan forest railway into the tour could show visitors the history and present of Alishan. By promoting Alishan forest railway, the beauty of Alishan can be promoted to the world. The train stations of the railway are presented in a 3D drawing, as shown in Figure 1. Based on the searching behaviors of the browsers, the website developed introductions of plant ecology, animal ecology, economy crops and aboriginal Zou race along the Alishan railway line (Alishan mountain railroad/ らさんとうざんてつどうろ) in order to accord with Information and Media Richness. In the meanwhile, we also study the flow theory and extend the personal flow to network flow.

Fig.1 Stations of the Alishan railway
This research attempted to identify the user groups of the travel guide website, and apply the information enrichment theory to the information content of the website. In Kil Soo Suh’s (1998) research of the influence of information, Media Richness was used very often. The outcome of a task would be improved if the information demand corresponds to its carrying ability. In other words, only the appropriate amount of information would be helpful to the task. Over or under information would not achieve best results.

This research used Chinese, English, and Japanese versions of the multimedia websites (sunrise, station, ecology, tribe, etc.), and incorporated 2D/3D multimedia animation and audio-visual effects for Internet around the world to access the website.

4. Design

4.1 Target

The cultural resources of Alishan forest railway are listed in Table 3, and local industries are listed in Table 4. The purpose is to promote local industries and economy.

This research intended to use the online multimedia technology, and information enrichment theory to construct an interactive websites for Internet users. The website structure is shown in Figure 2.

<table>
<thead>
<tr>
<th>Particularity</th>
<th>Fixed local festival celebration</th>
<th>Visit resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alishan forest railway, and the ne festival, etc.</td>
<td>Sunrise, sea of clouds, mini train, natural ecology (sakura, firefly, frog, etc.)</td>
<td>The sun rises, a sea of clouds, mini train, natural ecology (sakura, firefly, frog, etc.)</td>
</tr>
</tbody>
</table>

Table 3: Tourism resources in Alishan

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Production and marketing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wasabi japonica Matsum, tea, Jelly Fig (Awkeotsang), bamboo shoot, phalaenopsis, etc.</td>
<td>Alishan tea, Wasabi japonica Matsum product, orchid, coffee, etc.</td>
</tr>
</tbody>
</table>

Table 4: Local industries in Alishan

4.2 Tools

In this research, Microsoft Windows XP was used as the basic operating system, and Macromedia Studio MX 2004 edition. Other software used included: Macromedia Dreamweaver MX, Macromedia Fireworks MX, Macromedia Flash MX, and Autodesk 3Ds Max. The hardware used included: CPU: Intel(R) Celeron(R) CPU 2.40GHz, host computer board: GIGABYTE 8S648 FX-RZ (-C), Storing device: 512MB, network card: SiS 900 PCI Fast Ethernet Adapter, hard disk: Hitachi HDS728080PLA380 (82 GB), Display card: MIS NX6200 AX (CNVIDIA GeForce 6200 AX).

5. Result

The multimedia website was constructed in Chinese version, and titled “Multimedia Network” (Figure 4).
Dreamweaver was used to create 2D/3D multimedia effects to present the dynamics of Alishan forest railway with 3D technology. The multimedia information provided on the website are as beow:

1. Naturally (Natural/しぜん) Environment: Because the elevation of Alishan is high, it contains tropic, subtropic, and temperate zone, which formed a vertical environment, and nurtured abundant species, making Alishan a perfect place for eco-tourism.

2. Plant (Alpine/しょくぶつ) Ecology aspect: tropical forests grow at elevation below 800 meters, and include banyan, areca, longan, Taiwan acacia, and bamboos. The forests of the subtropics zone, between 800-1800 meters, include Taiwan incense cedar, redwood, and cryptomeria. The five most precious woods in Alishan are Taiwan juniper, Taiwan cypress, hemlock, Taiwan fir, and Taiwan pine, which can be found at elevation of 1800-3000 meters. They have very high economic value. The most popular season to visit Alishan is during the cherry blossom season, when a festival is also held. The species of cherry blossoms include prunus serrulata var, chitori cherry-tree(sakura), Yoshino cherry-tree, Osima cherry-tree, and Double-flowered cherry-tree.

3. Animal (Animal/どうぶつ) Ecological resources: The abundant forests in Alishan have provided habitats for animal and insect. The indigenous species are valuable for researches. The mammal species include: Formosan black bear, Formosan macaque, gem-faced civet, red belly squirrel, etc. The bird species include: Syrmaticus mikado, Lophura swinhoii and Regulus goodfellowi, etc. The reptile species include: Ovophis monticola makazayazaya, Trimeresurus stejnegeri and oyster clam wooden lizard, etc. The Amphibia species include Hynobius formosanus, Rana sauteri Boulenger and oyster's frog. The fish species include Taiwan climb fish, etc, loach of rock and mouth of horse. The butterfly species include: Small and some red powder butterflies, phoenix's butterflies, etc. There are over 194 species of butterflies in Alishan.

4. Economy (Economy/けいざい) Crops: Due to the cloud and mist, as well as high mountain terrain, Alishan is known for production of quality tea, such as oolong tea/せいしんウーロン Tea), Julu tea, and Jinxuan tea. It is commonly known as Alishan tea. Alishan is also place for the production of Wasabi japonica Matsum (わさび) because of the low temperature and high mountain terrain. It is a type of plant with high economic value, and can be used for medical purposes. Wasabi japonica Matsum has spicy, sweet, sticky, and anti-bacterial characteristics so it is widely used as a side of seafood.

5. Aboriginal (Indigene/げんじゅうみん): Aboriginal culture (Fig3) is the most invaluable asset of Alishan, it includes Tsou tribal culture, traditional ballad, ritual ceremonies, traditional costumes, and mythical legend. These can Alishan a more attractive tourism place.

The tour guide website cooperates with the promotion of ecological sightseeing and develops themes of tourist activities and forest trials which will increase the attractiveness of Alishan. The ecological tours, such as bird watch, firefly watch, frog watch, and butterfly watch would be the materials for education. Furthermore, it provides those ecology-lovers to have a close look of the ecology of Alishan.

This website showed every major station of the Alishan forest railway with 3D virtual tour, as compared to other websites that display only photo(Fig.4), so that browsers can view the railway from all angles and even for sunrise and sunset view (Fig. 5), the first rays of the morning sun (Fig. 6) and the railway station (Fig. 7). The interactive e-book provides educational tour on ecology, including birds species (Fig. 8), fish species, crops, and aboriginal culture. Users of all age can access the information on the natural ecology of Alishan easily. At the same time, the website is available in Chinese, English, and Japanese, so that visitors from around the world can use the website.
This 2D/3D interactive websites on tourism of Alishan can attract more tourists from around the world. The e-book is available in 3 languages, and provides information on the history, culture, and ecology of Alishan. It is convenient to digital life, and provides educational values, promotes local industries, and flourishes the development of the society.

6. Annotations
Annotations 1: This research searched Yahoo and Google to obtain 34 relevant websites based on the keyword of “Alishan”. The results are shown in the Reference.

Reference:
[12] Institute for Information Industry, Focus evaluation and analysis- Online tourist market develops a business opportunity of evaluation and analysis and challenge from North America, Market Intelligence Center, 1999.

Consult websites
[29] Stroll in the high in the clouds, Data collected from January to March, 2007, alishan.cyc.edu.tw.