Using OTC Model to Drive the Development of Shanghai's Economy

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ABSTRACT

OTC (Open Tourism Consortium) is a consortium of companies, government agencies, individuals, and universities participating in the open development of publicly available standards to support tourism. The goals of the project are to develop a standard data model, TourML, and TourML parser. The OTC project team plans to target on the top five countries with the biggest tourism industry. These countries include America, France, Italy, Spain, and China. Our project team OTCTC (OTC Team in China) looks at issues involved with China. OTCTC plans to consider the implementation of OTC in Shanghai first, the biggest city in China. This paper presents how the OTC model can be used to effectively enhance Shanghai's international image to the outside world, and how the OTC model can also be used to drive the further development of Shanghai's economy, especially in its tourism, information systems, and telecommunication industries.

Keywords

OTC (Open Tourism Consortium), tourism, OTC model.

INTRODUCTION

Shanghai is the center and power-house of China's economic development; also it is a "window" of china to the outside world. To implement Shanghai's ambitious internationalization program successfully, one of the key issues is to establish an excellent new international image of Shanghai to the outside world and to take advantage of the rich cultural heritage in Shanghai's and the surrounding region (e.g., Suzhou and Hangzhou). We can obtain this result through tourism. It is a good way to make more foreigners realize the favorable development tendency of Shanghai's economy and its investing surrounding.

Tourism is the fastest facing-sun industry of the economic development in today's worlds. The networks (e.g., the Internet and GSM) make the world "smaller" and it have never been so easy and effective to reach the world within seconds in email and web technology, without the need to invest huge amount of money to reach out to the outside world as it would about 10 years ago. This gives Shanghai a golden opportunity to implement its ambitious internationalization program within a shorter time period in a more cost-effective way.

Tourism and electronic business are ideal partners. The flexibility of E-business for tourism will attract more international tourists, and make tourism know more about the tourism products. E-business for tourism will provide abundant information, reasonable management model and more benefit. According to the traditional management model of tourism, e-business will reduce sale middlemen, lessen the cost of products, enhance the work efficiency, and provide high quality service for the tourists. So, to build a convenient, rapid, detail, high quality tourism E-business system, will greatly promote the economic development of Shanghai.

Our OTC model is developed with XML and TourML, which we will introduce later. OTC project is an integration of current tourism E-business websites, but have more impressive extendibility, better compatibility, more human-friendly, more selective, and more comprehensive functions, etc. OTC project will provide more detailed and selective tour agenda to the

tourists who want to visit the showplaces and historic sites in Shanghai, and present more sensible vision to the potential tourists by the websites using TourML.

THE PROSPERITY OF THE E-BUSINESS FOR TOURISM IN SHANGHAI

According to the country's National Tourism Administration predicted China is poised to dominate the tourism industry in the year 2020 by becoming the world's largest tourism destination and the fourth major source of travelers. China has maintained a near double-digit growth in both overseas tourist arrivals and tourism revenue over the past two decades [www.cnn.com]. It predicts a good chance for the development of Shanghai and its surrounding regions (e.g. Suzhou and Hangzhou) that have rich cultural heritage and tourism resources. Since the opening of China, the number of the international tourists who visit Shanghai has being in an increasing tendency. Especially in recently years, there were181.40 (10,000 person-times) in 2000, and it increased to 204.26 (10,000 person-times) in 2001. When it comes to 2002, the number adds up to 272.53(10,000 person-times). The increasing amount in 2002 is more than three times than last year. We can see this tendency from Figure 1.

The statistics for 2003 have not come out yet. Though the impact of SARS in the last year is a great blow for tourism, but it cannot stop the tourism to go ahead. It is only a haphazard.

Following the increase of the number of international tourists, the foreign exchange earnings also augment. Figure 2 describes this tendency (source: China Statistical Yearbook). Though the earning fell a little in 1998, but it soon return to 1364 (USD million) in the next year, and continues rapid augment in the next three years. Its increasing percent are 12.0%, 18.3%, 12.1%, 25.8% respectively in 1999, 2000, 2001, and 2002.
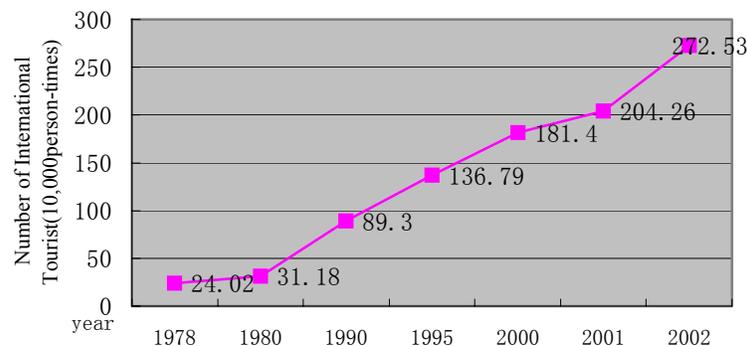

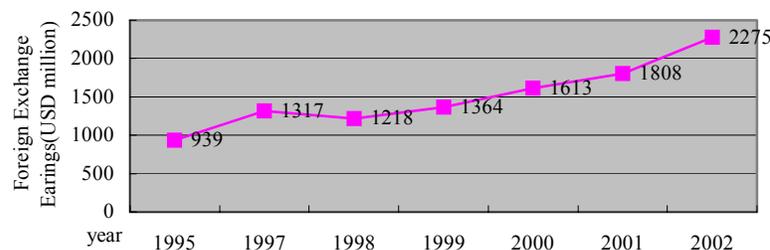**Figure 1。   Number of International Tourist of Shanghai***

Figure 2。   Foreign Exchange Earings of Shanghai*

Worldwide receipts for international tourism amounted to US$ 477 billion in 2002; China is US$ 20.4 billion, recording 14.6% growth in 2002 (Table 1) (source: www.world-tourism.org). And according to the statistics from CNN and CGR research company in America, the global annual sales of tourism E-business is 630 US$ billion in 2000, which is 360 US$ billion more than the sales in 1999. We have not yet found out the special statistics on tourism E-business of China, but through the data we state above, you can see the prosperity of the tourism and the great business chance indicated in E-

business tourism. Therefore it is important and urgent for China to develop its E-business for tourism. Shanghai metropolis recently brings forward its main demand in the plan of tourism development in next three years: to enhance the tourism informatization, put the emphasis on develop the E-business for tourism, to improve all kinds of booking service, build the tourism information network and tourism forecasting system, provide the excellent service of tourism market information.

Rank	2002	Change (%) 2002/2001	Share (%)
World	474	3.2	100
1 United States	66.5	-7.4	7.1
2 Spain	33.6	2.2	7.1
3 France	32.3	7.8	6.7
4 Italy	26.9	4.3	5.7
5 China	20.4	14.6	4.3
6 Germany	19.2	4.0	4.0
7 United Kingdom	17.8	9.5	3.8
8 Austria	11.2	11.1	2.4
9 Hong Kong (China)	10.1	22.2	2.1
10 Greece	9.7	3.1	2.1

Table 1. International Tourism Receipt (US$ billion)

THE PROBLEMS OF TODAY'S E-BUSINESS TOURISM

Because of the prevalence of network and the prosperity of tourism, a lot of Chinese tourism enterprises have already built websites to propagandize themselves, provide the information about the spots where tourists can tour. Correspondingly, they also provide the service about book tickets or book rooms from Internet. Take the websites of Fujian China Comfort International Travel Service CO. Ltd for example (www.fjcct.com), it is a good model for tourism E-business. It site services include: tours, hotel bargains, flights and trains, keyword search, and reservation page. The information layouts are: the introduction of company, China Info, city in China, new journey, popular China tours, special interests tours, and relevant links. Its site map helps the tourism to find the information about hotel, tickets, etc, classified by city. It also provides a forum to tourist for communication. Another advantage is that it has three language editions: Chinese, English, and Japanese, which for tourism to choose. But it still exist some shortcomings. The hotel information is not integrated, just under construction. And its network bargains need human to confirmation at last, not an integrated E-business. As to another two bigger websites www.ctrip.com and www.elong.net, Ctrip.com put emphasis on hotel information, its aim is to leading the consolidator of hotel accommodations and airline tickets in China. It also has the introduction of the travel points, but the points are not whole and the introduction is too simple, just word description and few pictures. Elong.com has the same question with Ctrip.com. E-business for tourism is only in its beginning phase in China, there are many problems that should be solved in the later development.

Problem 1: the information is disorder and unsystematic.

In recent years, the Web has significantly augmented the traditional sources of tourist guides and travel services. More and more tourism enterprises enter the E-business for tourism, which result that all kinds of tourism websites emerge. Now, tourists suffer from a surfeit of planning information. The glut of information is overwhelming and trying to find relevant information is time-consuming and frustrating. The user decision-making process in Web environment is generally information intensive, if not properly filtered and pre-processed, this amplitude of information can easily "overload" users (Shaw et al. 1997). For example, a Google search on the keywords 'Shanghai tourism' gives over 200,000 hits. Facing to these hits, the tourists always do not know how to choose the right ones. What they only can do is to see these results one by one, and sometimes just wasting time, gets useless information. In one word, this phenomenon is called "information overload". That means people are overwhelmed by the abundant information, and they cannot become selective and find out the favorable ones.

Problem 2: the information is single and pale.

Almost all the tourism websites, the service they provide is only browse, lacking of interactivity. On every websites homepages, it contains some information like this: the simple introduction of the travel bureau, for instance, the name of the travel bureau, address, telephone number, fax, linkmen's name, etc; the introduction of the travel spots: such as history origin, literary quotation, also some picture are presented. The more detail, to give the place where can eat the local snack and its consume price. This information just meets a part of the demands of the tourists, and cannot give the sensible information to those who have no time or no chance to visit the showplaces. As to arrange travel scheduling and routing, the assistant provided by the websites is very pale. Some of them are in building and improving states; others even have not opened this service. It is very inconvenient to the self-help tourist.

The excellent page layout contrast unfavorably with the lean contents. They lack of the interactive with the tourist. They do not give a place for tourism to express their thought about the travel spots. They are just pre-tourism, and ignore the continued influence of after-tourism. Except these shortcomings, the websites pay little attention on internationalization. Most of them have no English edition for foreign tourist. This may limit the development of tourism in some extent.

Problem 3: less relationship with the relevant industry or department

Though some tourism websites provide the service of booking tickets or rooms on Internet, the little prevalence of credit card make this service unsuccessfully. The people do not accept the E-payment measures. In other side, the rapid development of mobile telephone close the relationship with network, more and more people though the mobile telephone to accept/send the information on Internet, this make people can get the information in anytime, anyplace. But E-business for tourism has no good performances on this point. Otherwise, the tax who plays a very important role in the tourism incoming is still an outlier in E-business tourism. Therefore, the successful E-business tourism needs more parts to enter its course: bank, telecom company, government, etc. When all of these departments coordinate uniformly, the good E-business tourism system will be build.

For solving these problems, we need to build a set of standard of E-business tourism. It gives a criterion for websites' building, information service. Let E-business tourism exert its real usefulness.

The Open Tourism Consortium in China

What is Open Tourism Consortium and OTCTC

The open tourism consortium (OTC) was created in the first half of 2003 with the goal of establishing a consortium to participate in the open development of publicly available standards and software to support tourism (Watson 2003). OTC's goals are to support information services for the three phases of tourism: pre-tour (planning), touring, and post-tour (reminiscing). OTC's goals are to develop:

TourDM — a standard data model for tourism objects and events;

TourML —an XML based data exchange language for objects and events of interest to tourists;

TourML parser —an open source program to parse TourML files and insert the data into a relational database based on the standard data model;

TourStyle —a set of stylesheets for transforming output to a device's characteristics;

TourCMS —a content management system for tourism authorities;

TourImplement —guidelines and tools to assist implementation.

All specifications (e.g., TourML) and software (e.g., TourCMS) will be created by distributed, collaborative efforts, placed in the public domain, and freely downloadable.

OTCTC (OTC Team in China) takes on the part of China. OTCTC plans to implement it in Shanghai first. And we want set up a standard that have the advantage in technology. We hope the criterions can be directly used in Internet; impressive extendibility, support all sets of applications, for example: tourism tax, phonic service, weather forecasting, electronic guide, and mobile phone application, etc; easy to program and implement; good compatibility, can coexist with the present system. It has no relationship with operation system, can work well in all operating environment.

The three phases in which tourists could benefit from information systems

There are three phases in which tourists could benefit from information systems: planning, touring, and reminiscing. The information systems opportunity differs by phase (Table 2), as we explain in the following discussion.

Phase	Opportunity
Planning	Data management
Touring	Data delivery
Reminiscing	Data sharing
Table 2. Tourism phases and information systems opportunities	

In the planning phase, prior to the trip, the tourist collects information about destinations. Tourists require an overarching meta-organizing information system that provides them with a well-organized starting point for their search. A data warehouse (Inmon 1996) is a corporate solution for information disorganization. A standard data model could have a similar effect for the tourism industry. TourDM is a conceptual model for a database to supports a tourist's information search.

Touring, the second phase of tourism, defines the period when a person is visiting sites, wandering around museums, attending a festival, and so forth. During this phase, the tourist needs location-based information services to inform them about the tourism attractions within their environs. They might, for example, seek information about objects within their immediate vicinity (e.g., what is the history of the Jade Buddha Monastery?) or find out what is available (e.g., what is the nearest open art gallery).

At various stages after a trip, reminiscing ensues. On returning from a trip, travelers recall the highlights and often share these with relatives and friends. Also, they might want to comment on places they have visited. Hence, there is a need to support creation of a personal electronic trip album so that the traveler can relive and share memories, and potentially increase tourism through this electronic variation of word of mouth.

In our OTC project, OTC Model is based on these three tourism phases. We have summarized our perception of the link between OTC model and Simon's problems solving model (Miles et al. 2000) in Table 3. These three stages form a circle course. If we build a excellent tourism system by using OTC model for Shanghai, the benign circle will attract more people into touring Shanghai so that can promote Shanghai's new and modern international image to those foreign tourists and those foreign citizens who have not had a chance to visit Shanghai and China. This will form a gyroidal-ascending course for tourism in Shanghai, also for economic in Shanghai. Figure 3 describes this course. Every new course means bringing more people to visit or acknowledge Shanghai so the loop become larger and larger.

OTC Model	Simon's Model	Comments
Planning	Intelligence	Thinking about where to visit
		Collection of relevant information
	Design	Arranging scheduling
		Booking room and tickets
Touring	Choice	Enjoying the trip
		Comparisons showplace with the image getting from the information
Reminiscing	Intelligence	Reviewing the decision
		Sharing the trip experience
Table 3. Comparison of OTC Model and Simon's Models		

Current technology and solutions support the three phases previously described, but it is left to the tourist to integrate the many sources of information and available systems. There is a need to take support for tourism beyond the current state where the Web is a daunting mound of information that imposes heavy searching costs upon the tourist. The old model forces tourists to integrate information, when this is a task for which information technology is highly suited.
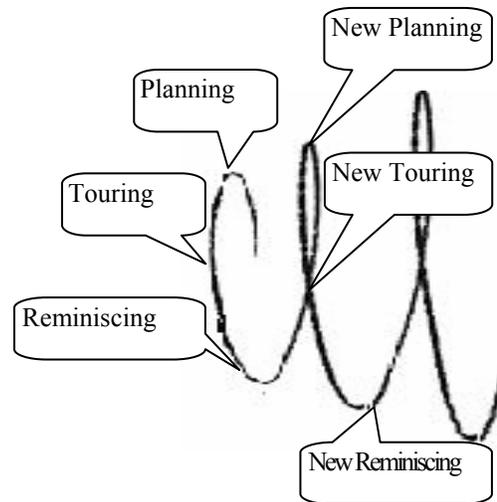

Figure 3. The gyroidal-ascending course for tourism in Shanghai

Mainly Functions of OTC in China

OTC wants to use the TourML to develop the standard of the E-business for tourism. So the websites building by TourML will include all aspect of the service that E-business for tourism can provide. In generally, it mainly consists of the three following functions:

1). Provide the detail exact information for tourist

There are so many concerned department join in the OTC, thus the websites who use the TourML can provide the comprehensive information for tourism. The information includes: the introduction of travel spots, the price of tickets, the rank of hotels and their consumption level, etc. These are not new information needs, but typical of the queries for which tourists have sought answers for many years. What is new is the capacity to deliver answers to such questions, and many more, to tourists as they tour. Thus, the central information systems concern is the delivery of relevant, context-sensitive, tailored information to the tourist wherever they are, or perhaps more specifically, exactly where they are and exactly what they doing. We will layout this information sensibly and actively. For example, scene demo by flash, voice service, electronic map, etc. TourML will classify the information clearly. The tourist can easily get the travel information they needed, stop the information overload, and save the energy of tourist for preparing the trip.

Shanghai can though this way to layout its development and progress for the people all over the world. And attract more tourists and investors come to Shanghai.

2). Excellent interactive

TourML will realize the true interactivity between the tourism and websites. The concrete example is to stipulate for the travel schedule. You just need to input the number of days you want to stay, the place you want visit, the money you can afford, the websites will provide a favorable scheduling for you. It is a good reference for you trip, and you can modify it according to you own conditions.

Also, adapting the book review model of Amazon, tourists should have a convenient method of sharing their thoughts on tourist objects they visited with those planning a trip. One of the strengths of both the printed guides and of the Internet version of the Lonely Planet series1 is that the content is added by ordinary tourists who like to contribute, thus providing credible content that can be used by others. And to support creation of a personal electronic trip album so that the traveler can relive and share memories, and potentially increase tourism through this electronic variation of word of mouth. The tourists will get big fun in this interactive course.

3). Real E-business for tourism

Because of the bank and hotels joining in the OTC, they use a common standard, so that the business by network is early to realize. Booking ticket, booking room and electronic payment will be a certain service for websites. Also, TourML is a standard has a good compatibility with the mobile phone criterion. Mobile phones are increasingly gaining features that make them mobile information appliances. Because newer phones come with an operating system, they have the potential power of a current computer. Furthermore, these information appliances have the capability to determine their location using techniques such as uplink time difference of arrival (U-TDOA) (Zhao 2002).

The technology is in place to deliver information to the mobile tourist, and now we need the imagination and market research to determine profitable services. The mobile phone can support the same the functions as support by computers. Tourists can seek the information they needed though the mobile phone anytime anyplace. This will be a great advantage when they are touring, to get information in time.

Besides, the government can utilize the websites to complete their tax and management work. The common standard is a big convenient for doing these things. It saving time, people, and money, and increase the work efficiency, which can leave a good impression for tourism and add the income of tourism.

Though these measures, OTC conform the planning, touring, reminiscing smoothly. Tourism will become a relax thing, never mind its overloads and details. The several tourists who benefit from the OTC will tell others, the others will tell more people, after this spiral circle. The tourism economic will have a good prosperity. You should realize one point: the tourism websites is not just websites that provide information for tourism; it is also a good window for those who want to acknowledge other countries but have no choice to visit them.

Conclusion

When OTC is complete, its benefits are listed as follows:

1) Normalize the management of the China tourism websites, improve the extent of opening of the big or middle city in China, promote Shanghai, Beijing, other cities and regions develop to be international cities and tourism areas.

2) Attract more tourists, shorten the time for application design, and provide the more convenient, more in time service for tourists.

3) Reinforce the management of tourism tax and convenience the management of government. Let the tourism make more contribution for economic development.

In the end, the OTC will help to establish an excellent new international image of Shanghai to the outside world and promote its economic development:

1) Effectively promote Shanghai's new and modern international image to those foreign tourists who are visiting Shanghai or other cities in China, so that they will become "free salespersons" for promoting Shanghai's new and modern international image after they go back to their home countries and share their experiences with friends and family members about their trip to China/Shanghai.

2) Effectively promote Shanghai's contemporary international image to those foreign citizens who have not had a chance to visit Shanghai and China, but they are interested in China or Shanghai and want to know about Shanghai or China. This aspect is especially important currently. There are always more people in foreign countries that may not have a chance to visit Shanghai or China than those have the chance.

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