

The convenient traveller: using technology to enhance tourism in Papua New Guinea

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Abstract

Potential travellers who do last minute bookings have one problem in common, they do not have the luxury of 'time'. Most travel web portals and destination websites provide similar types of information which creates information overload and makes it difficult for new-comers to decide which travel products or combination of travel products they want. In this paper we discuss a theory to assist the potential traveller to make the most convenient travel decision through the use of technology. We suggest an application and business model to determine the most convenient travel decision.

Key words: tourism industry, information and communication technologies, Internet, websites, e-ticketing, e-reservations, consumer travel information, destination management organizations, new opportunities, convenient traveller

Introduction

International trade, development of resources and consumption at both local and international level is becoming fast and competitive. What the world does not have is 'time' and the dilemma it is grappling with is 'scarce resources', maximization of opportunities, increased satisfaction and lowering any signs that will bring about discomfort. This has been enhanced by developments in information and communication technologies (ICTs). Responses to new and sophisticated consumer demands and awareness of society's ills and guilt-feelings in the tourism industry has seen initiatives to produce more 'greener' results such as 'energy-efficient' airplanes like the Airbus A380 and Boeing B787 Dreamliner, ecotourism, e-ticketing, e-reservations and environmental checklist guidelines, to create more convenience for the traveller and reduce any discomfort. The use of ICTs has greatly enhanced the tourism industry's ability to achieve the goals of these initiatives.

These developments have brought about more opportunities and greater competition. In Papua New Guinea (PNG) well-known tourism products such as accommodation, destination management organizations, airlines, rental cars, travel agencies, tour operators and tourist attractions, are thinking about having a presence on the Internet by developing websites to take advantage of opportunities provided by the developments in ICT. Current trends in website development and online marketing indicate that PNG's purpose in applying ICT is no different from the international travel trade and other destinations. Much of the consumer travel information that is provided by the different

suppliers and destination management organizations is similar: comparing what is offered within the country and outside the country. This increases the level of competition and does not make it easier for new travellers trying to decide on a travel choice. In this paper we discuss a proposal for a comprehensive travel decision making mechanism to assist tourists decide on a travel route and to assist tourist operators and support industries to market their products and serve their customers better.

The 21st century visitor

According to Schröcksnadel (2008:245) the 21st century visitor is likely to make significant use of information and communication technologies to assist in travel planning and decision making. There are now more experienced and sophisticated travellers than before, yet they do not have the luxury of time to do all those travel planning and decision making themselves. 'The more support and service customers receive, the more satisfied they are' (Wenzel & Kirig 2006, cited in Schröcksnadel, 2008:245).

In this paper we suggest that despite the multitude of needs that the average traveller has and despite the multitude of services, activities and destinations available, it is possible to create a decision support mechanism that benefits both the traveller and the organization seeking to entice the traveller or to make his or her travel more pleasurable and less stressful. We suggest such a solution and describe its implementation.

Identifying traveller decision criteria based on traveller needs

Let us assume that a potential tourist wants to travel. The potential traveller has certain needs and expectations such as being welcomed at the reception, being assisted with the luggage and shown to a seat or room, a hot bath, a good meal and reliable service. The person could search the Internet or visit the nearest travel agent to collect information and make travel arrangements. Say, the potential traveller chooses to fly as the mode of transportation. The potential traveller's travel information needs may comprise the following:

- Cheapest fare
- Direct or in-direct flights
- Number of stops
- In-flight information and entertainment
- Reputation
- Aircraft size, configuration, fare classes
- Onboard meals
- Seat comfort and leg-room
- Duty free shopping
- Journey time
- Frequent flyer points and other customer loyalty programs
- Facilities and amenities on board
- Staff professionalism and friendliness
- Convenient travel times and onward connections.

The above may be primary needs. The secondary needs of the potential traveller could comprise the following:

- Destination information provided by the airline
- User friendly and easy access to information provided by the airline
- Packages and other travel arrangements provided by the airline, e.g. hire car, accommodation and sightseeing packages.

Using the ideas behind minimum spanning trees as a branch of mathematics and computing science, a system may be developed to give the different travel needs a rating based on a perceived satisfaction rate of how well that service is performed to the satisfaction of the travel customer as perceived by system analysts, which would be updated periodically. To demonstrate this in tabular form, a traveller wants to travel to PNG from Singapore and uses the following travel criteria to choose a carrier.

Table 1: Query table and weighted responses

Query	Airline	
	Air Niugini PX	Qantas QF
Non-stop flight	5	0
Duty free	4	5
Journey time	5	1
Onboard entertainment	3	5
Onboard meals	4	4
Total rating (weight):	21	15

From Singapore (SIN) to Port Moresby (POM)

For the convenience of the potential traveller the system would return the total rating (weight) based on the five queries entered by the traveller. In this case Air Niugini has a total weight of 21 compared to Qantas with a total weight of 15, which shows that Air Niugini is the recommended carrier based on the five queries that have been entered into the system. The system can be designed in a way that the potential traveller can also see at the click of a button the individual weight components as shown above or in a graph form if the traveller is more concerned about a particular query. This would save time and resources for the potential traveller, and give the power and confidence in travel decision making back to the client. This would not diminish the role of travel agents, and potential travellers can always visit one if they are seeking personal assurances, but the system would tremendously increase travel convenience.

The same system can be applied to destinations in relation to destination management and even comparing various means of travel such as road, train, air and sea transportation. This can also be applied to the different sectors of the tourism industry at the domestic and international levels.

A synergistic and customized approach

The proposed system is ideal as it integrates a level of synergy and customization based on the travel needs of the potential traveller. Based on the query input by the potential traveller, the system will output the highest total weight thereby increasing the likelihood of customer satisfaction and increasing the synergy between the different query components. The proposed system will also provide for a customized result outlaying the weight to individual query components so that potential travellers have more control over their travel decision making.

A strategic approach

Potential travellers are not only looking for travel means but are also interested in other services and products provided along the journey and what awaits them in the destination. Therefore a strategic approach is to look at the whole thing as an 'experience'. The concern in this case is to provide the potential traveller with the best options for his or her travel needs so that the total experience is a satisfactory and memorable one that will sustain future business.

This is also good for businesses as those doing well above average to meet customer needs will retain satisfied and loyal customers who will continue to give good business. This will influence the weight allocation and can further generate new business for the travel trade like the airlines and destinations. It will also create competition amongst the different travel companies and destinations to improve their services and product offerings so that customers are better satisfied.

Destination management organizations

Buhalis (2003) indicates that destinations that provide timely, appropriate and accurate information to consumers and the travel trade are most likely to succeed compared to those destinations that are ill-prepared. Destination management organizations need to promote their accommodation, transportation, tourist attractions, natural environment, events, culture, etc. to bring in tourists. The use of the Internet is fast becoming desirable as a means to promote and access useful information for efficient and effective travel planning and decision making in the tourism industry. The Papua New Guinea Tourism Promotion Authority's (PNGTPA) 2009 survey results demonstrate that;

The use of Internet by international visitors to source information on PNG is growing rapidly. More than 37 percent of the visitors responded to have used Internet as their source of information. This result continues the upward trend of Internet use from year 2003 and the highest use observed to date, which confirms the importance of the Internet as a source of information. Therefore, well detailed and easily

accessible websites should be developed by those involve[d] in the tourism business and linked to the TPA website for effective distribution of the information to consumers.

Improvements to destination management organizations' websites associated with special functionality for accommodation websites include language options, integration of hotel and attraction videos, online credit card payments and booking options, and sending non-binding information online. What the destination management organizations are less concerned about is comparing and ranking those facilities and services by according them some kind of weight based on a perception of satisfaction levels, which will benefit potential tourists and other travellers. If destination management organizations and the individual product-based websites (e.g. hotels, attractions) provide similar types of information then that makes it quite difficult for new-comers to make their individual choices. 'For most tourists using the Internet for travel preparation, the overload of offers is perceived more like a burden than an assistance' (Egger and Wörndl, 2008:60). What most travellers do not have is time, and for most travellers who make their travel bookings at the last minute, having access to a system that makes those comparisons and provides the best option for decision making is welcomed.

E-mediaries and destination management organizations systems

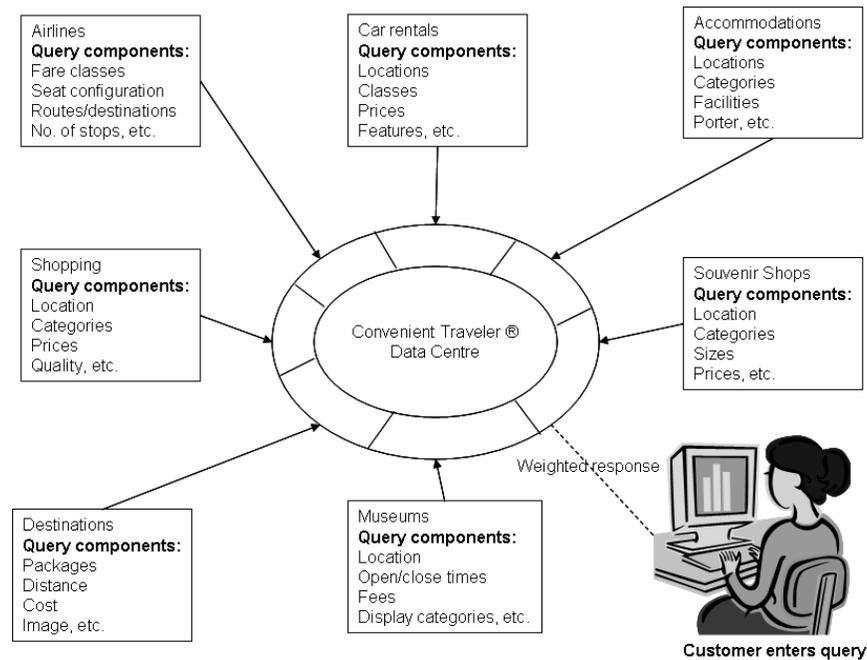
The term e-mediaries is used to refer to electronic intermediaries that promote and market travel and destination products and services for airlines, accommodations and destinations such as expedia.com, opodo.com, lastminutetravel.com, booking.com, venere.com, hrs.com, pngtourism.org.pg, south-pacific.travel, and fijime.com, which mainly offer last minute deals, cheap offers, recommended choices and destination/product information. Although some of them try to combine several products, such as a flight, hotel and hire car and grade accommodation services, none of them try to compare different facilities and rank them as proposed here, according to the different products and services that are offered to clients. What is being experienced now is the bulk of similar information being fed to potential travellers and products/services already recommended to potential travellers without the potential travellers making those choices themselves based on some of their own travel decision criteria.

Destination management organizations' systems products such as Desklina, Eurosoft and darWIN by Feratel Media Technologies provide advantages to management organizations and destination businesses to market and manage development of their products and services. This facilitates business efficiency and effectiveness for a maximum return on unit investment. There are advantages for potential travellers such as improvement in the performance and functionality of websites however the personal confidence in travel decision making based on individual decision criteria is limited, hence it could be said that the potential traveller has less decision making power.

Business model

A proposed business model is to develop a web portal supported by a data centre that will collate all query components from various categories of products and suppliers and that will be compared and ranked by according weights (a number) based on a perceived customer satisfaction level by system analysts. When the queries are entered, the system will provide the response with the highest aggregate weight. The system can also outlay the weight to the different query components for the system user to see and make their decisions. Below is a model to demonstrate this.

Figure 1: Application of business model to determine the most convenient travel decision.



The Convenient Traveller is the system that is backed by the data centre which contains queries from the different categories of potential traveller needs. As shown here, these include airlines, car rentals, accommodations, shopping, souvenir shops, museums and destinations. All queries will be given a weight, a number say, between 1 and 5; 1 representing a weak satisfaction level and 5 representing a strong satisfaction level. The weight is given on a query based on the perceived satisfaction levels of all rivals that are entered into the data centre. Let us say a user is interested in souvenir shops in a certain destination and enters a number of queries according to the user's preferences like location (closer to the airport), categories (sells printed T-shirts, stationery and portable artefacts), sizes (medium, large and small items), prices (low to medium range and affordable), etc. The system will respond with a museum that is the most

convenient for the user with the highest aggregate weight for all the queries entered. The user can also enter queries combining several categories such as queries on souvenir shops and museums, or souvenir shops, museums and shopping, etc. in a destination. Dealing with one category or several categories in one destination will be manageable. Dealing with several categories in several destinations will require more input and more effort in modifying the system and managing it over time.

System challenges

There are several concerns related to this proposed system. The system will require information input in terms of queries entered into the data centre for all participating travel related products and services concerning a destination. It means that information has to be collected and supplied. A weight will be given to each query by an independent opinion of system analysts on a perceived delivery of customers' satisfaction level by participating rivals, or through an independent review team which might take into consideration independent consumer reports and online customer reviews of facilities and service providers. The proposed system could also incorporate its own online ranking platform whereby experienced customers can rank facilities and services which will then be assessed and incorporated by system analysts.

The system will need to be updated periodically with changes in the travel trade, which will again require compilation and supply of the needed data for the data centre and reviewing of the weight. The challenge is how to gather that information and to define the queries so that it applies across the board for a similar product or service. The other challenge is in maintaining and updating the system and getting the needed information for the update. There is also the issue of system credibility that it provides an honest, reliable and unbiased ranking for its user.

The system becomes more complex if it incorporates several categories of travel related products and services in several destinations. It will create challenges for system design and maintenance.

Possible implementation of this system

A simple system design can incorporate tourism products and services by working with the idea of travel packages. This can be implemented, for instance, at airports on touch-screen monitors or on computer workstations. A criterion that can be used is cost. A potential traveller will compare the cost of one package against other rivals in competing destinations offering the same package. This idea can be demonstrated in tabular form, as indicated in Table 2. It highlights a simple travel package decision by a potential tourist at Port Moresby's Jackson's International Airport, who enters five queries into the system, comprising airline travel to the destination (location), hire car for sightseeing, lodge type accommodation, doing diving and watching a traditional village singing, based on unit cost per day.

Table 2: Query table and independent ranking

Query	Location		
	Madang (PGK)	Kimbe (PGK)	Alotau (PGK)
Airline	500	614	549
Car	400	600	500
Lodge	300	400	270
Dive	360	380	320
Village singing	300	500	250
Independent ranking:	1	3	2

Simple travel package components comparing three destinations on cost

The system will match the search and return the lowest cost based on registration from the different locations, in this case, towns, and provide independent ranking based on design by system analysts. The example in table 2 shows Madang has the ranking 1, as the recommended destination based on the lowest total package cost. This is only a hypothetical situation. If such a travel package already existed in different locations by various suppliers then the system would reveal the outcome of the package cost from different locations/suppliers. Such a system would enable potential travellers to change decision criteria, check on individual products and services and create their own travel package rather than buying from an existing one. Other possibilities can also be incorporated into the system to provide more convenience for the traveller.

This system cannot answer all travel queries and provide perfect solutions to travel queries. A traveller might need to use his or her own judgment and other methods based on personal need. To explain this we refer to ideas presented under table 1 for instance, a transiting passenger who has to decide on a non-stop flight from Singapore to Port Moresby which departs at 23:25pm in the night and has to wait six hours to catch this flight, as compared to another flight that departs in one hour to Port Moresby via Australia. Another case with the ideas presented under table 2 is when comparing accommodation types in a certain destination that the system will provide the lowest cost but that is no guarantee for satisfaction or value for money, but the intention here is for the system to make it more convenient for the traveller to ease the burden of travel decision making.

This system can be implemented at locations in tourist information centers or visitor bureaus, other ports, airline offices and travel agencies in each of the provinces. This will make it convenient for the travellers and will enhance the reputation of a destination's image as being conscious of the needs of travellers and dealing with the issue in a creative way using ICT.

Conclusion

We have tried to show how technology can be used to enhance tourism in Papua New Guinea. Technological changes have created new opportunities and challenges which can be turned into further opportunities for tourism. The 21st century visitor is more sophisticated and demanding, and wants to enjoy more pleasure and less stress. We have suggested a solution whereby a system can be designed to incorporate different tourism product and service offerings by different destinations and suppliers which would be available in electronic system for selection by potential travellers based on different travel buying decision criteria. The potential travellers using the system would be assisted in their travel decision making from independent rating and ranking of these products and services as designed by system analysts.

We have explained from both a synergistic and customized approach and a strategic approach to dealing with this topic. We have discussed destination management organizations, e-mediaries and DMO Systems, the types of similar systems that are in use and their workings, and we have shown how this could be done through a business model. In addition, we have highlighted some of the system challenges and possible ways of implementing such a system. We end it here, but certainly this is not a conclusion to this discussion, as it can be expected, there will be other papers on this or related issues may be forthcoming.

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