The Role of Online Travel Agents in the Experience Economy

Anton Bogdanovych [a], Marc Esteva [a], Ning Gu [b], Simeon Simoff [a],
Mary Lou Maher [b], and Greg Smith [b]

[a] Faculty of Information Technology
University of Technology Sydney, Australia
{anton, esteva, simeon}@it.uts.edu.au

[b] Key Centre of Design Computing & Cognition
University of Sydney, Australia
{n.gu, mary, g_smith}@arch.usyd.edu.au

Abstract

Our society has evolved through the product economy and the service economy to the experience economy. Due to this fact the value of a travel product, nowadays, is far beyond the goods and services. Experiences are driving the travel industry and make the travel product more and more diverse. Moreover, not only the travel experience itself, but also an experience of buying a travel package becomes extremely important for tourists. In such new economical circumstances it is necessary for travel providers to understand the desires, motivations and requirements of the travellers, as well as unique features of the tourism product. This paper provides a detailed analysis of the above-mentioned factors and suggests that online travel agents have the highest potential to exploit the benefits of the experience economy. The presented "World Trotter" travel agency prototype addresses the identified drawbacks of existing travel providers and gives motivation for future development of online travel agents.

Keywords: 3D Electronic Institutions, Online Travel Agents, Experience Economy.

1   Introduction

During the last decade our society became extremely experience focused. Through the product economy and the service economy it evolved to the experience economy (Pine & Gilmore, 1998). Today's consumers unquestionably desire experiences, and more and more businesses are responding by explicitly designing and promoting them. In industries like entertainment and commerce, experiences are bought and sold together with products and services or even separately from them. One of the paradoxes of this new economical phenomenon is that those experiences sometimes become much more valuable than the products or services they adhere to. As the tourism product is ultimately nothing but a range of experiences and services, the

influence of the experience economy over the tourism industry is much more significant then elsewhere. Today's situation in the travel market is totally different from both product and service economy times.

In 1950s and 1960s, when the product economy still dominated, tourism was mostly seen as the time of the family togetherness. Back then, there were no scheduling problems and international travel was the preserve of business people and the rich (Vladimir 1989, p. 40). In 1960s and 1970s (service economy takes over) consumers started to seek personalized products, selecting more remote destinations and demanding a better service. They wanted someone else to bring the frozen daiquiri to the poolside – and it should better be well made (Vladimir 1989, p.41). Today, when the experience economy matures, there is a shift of customers' preferences from goods and services to experiences. For many travellers a service became secondary, and it can even be sacrificed for a better experience. It is time when providers have to stage the customer experience beyond basics; just a good service is not enough anymore. Moreover, the travellers of today decide to buy or not to buy based upon the quality of experience they receive during the trip selection (Yeoman et. al. 2005).

Satisfying the growing customer demands in the experience economy requires clear understanding of the features of the tourism product as well as motivations and desires of the customers. As the travel product becomes more and more diverse, it becomes harder and harder for consumers to choose the right packages, as well as for the travel providers to create these packages. We argue that experience economy increases the demand for travel intermediaries, which can provide information, reduce the diversity, offer professional advice and stage the ultimate customer experience.

Online booking is currently taking over the travel market, because with Internet travellers have received the possibility to access the information about prices, deals and schedules in the comfort environments of their homes and create travel packages themselves. However, the amount of this information is so huge, that the majority of travellers to previously unvisited destinations would use traditional travel agents for filtering this information (Bogdanovych et. al, 2006). The amount of time a traveller spends for creating a trip package online is significantly higher than the time an experienced travel agent would spend for this task. Moreover, the online booking in its current form is not concerned with providing a good customer experience and is unable to cope with the uncertainty in the requirements of the travellers. In this paper we emphasise the importance of online travel agents, as the subclass of travel intermediaries that have the highest potential to take over a significant amount of the travel market by addressing the complex requirements of the travellers and exploiting the sophisticated nature of the travel product. We advise how the travel agents should evolve in order to be able to keep up with the changes in the industry and how should

they employ cutting-edge technologies to stage customer experiences and reduce customer's exposure to complexity in package selection.

The remainder of the paper is structured as follows. Section 2 explores the tourism product in terms of its characteristics, describes what motivates tourists to decide on a particular package, and suggests how online travel agents can successfully utilize this knowledge and which technology should they use. In Section 3, the "World Trotter", a prototype of an online travel agent built on this technology, is outlined. Finally, Section 4 summarizes the contribution and gives an overview of the future work.

2 Tourism Product Features and Consequences for Travel Agents

Based on a detailed literature review we selected the following important characteristics of tourism, magnified by the experience economy:

- Tourism product is intangible in nature (Jackson, 1997), none of the components of a tourism product can be seen or touched before purchase by neither a buyer nor a seller (Jackson, 1997). For this reason, tourists need to get as much correct information as they can feel confident that their desires and expectations will be fulfilled. That is the reason why information, along with price and customer service, is one of the key competitive factors and an element that affects the tourist-receiving society and the quality of the travel experience (Britton, 1978).
- It is remote in nature with the person selling a product possibly never having seen the destination sold and yet being the prime source of advice (Jackson, 1997). This has a consequence that the collective intelligence is required to provide customers with correct information about the trip.
- The description of a product is always subjective (somebody's perspective) and background related (Gee et. al, 1997). This suggests that the more real is the travel product presentation the less uncertain is the customer about its characteristics.
- The product is delivered by many different firms, which are typically different in terms of their functions and capabilities (Palmer & Bejou, 1995). For the customer this means that the more components are present in the desired package, the harder it is to order the package without help from travel intermediaries.
- Few other industries link so many diverse and different kinds of products and services as the tourism industry (Edgell 1990, p.7). The list of all travel-oriented "commodities" is too large, so a catalogue is not feasible to produce (Rugg, 1973).

Apart from the above characteristics, in order to complete the picture about how the demands of the customers have changed with the experience economy and what the tourism providers need to improve, it is also necessary to understand which

motivations today create the need for a person to travel. According to (Sirgy and Su, 2000), when searching for a place to go, tourists create a stereoscopic image of the kind of people who typically visit a given destination (destination visitor image), which is then compared with the actual self-image (how travellers see themselves) and an ideal self-image (how they would like to see themselves). This comparison is a crucial deciding factor in the destination selection, but in order to make it accurately, a certain level of the customer involvement needs to be reached. One possible way of estimating the self-image is creating the user profile of the traveller, which helps to classify different customers into most typical categories and further facilitates the reduction of diversity in the proposed package (Gee et. al, 1997).

Additionally, Gee at al, (1997) summarize the factors that influence the travellers' choice of a particular destination. These include: scenic beauty of a place, pleasant attributes of the local people, suitable accommodations, rest, relaxation and airfare. Existing travel providers are very successful in presenting the fare-related information and are moderately successful in regards to the destination presentation, which is currently limited to 2-dimensional images and textual description. However, the rest of the motivations (which are mostly social and experiential in nature) are usually not addressed, as those factors are hard to present in terms of catalogues.

The above findings confirm and extend the outcomes of our research study on the drawbacks of current travel providers (Bogdanovych et. al, 2006). This study identified a number of features that are highly desired by travellers, but are not yet implemented by the travel providers. On the one hand, gathering as much information about the destination as possible helps tourists to feel confident that their desires and expectations will be fulfilled. On the other hand, the travellers wish to reduce the information overload. Both goals can only be achieved by employing travel agents as experienced advisors, who are able to filter the information for the customers. The study also tried to understand the differences in perception of the interviewed subjects towards online booking and travel agents. The results suggest that the most successful model is an online travel agent (rather then pure online booking or brick and mortar travel agents). This is mostly due to the fact that the convenience of online booking as well as convenience of the human expertise is similarly appreciated by travellers.

Although they have a great potential, online travel agents are not widely used for a number of reasons. With the traditional web technology it is very hard to deal with the complexity of the travel product (as comprehensive catalogues are infeasible). The complexity can be reduced through discovering the preferences of the customer and filtering out the product components that are not likely to be interesting for the user. However, the classical web interfaces are very limited in this sense. The profile of a user is still updated on the basis of online surveys and click-through statistics, forcing the customers to be explicitly involved with the preference collection process. The

information presentation is limited to isolated images and descriptive text, which decreases the involvement of the travellers. Another significant drawback of online travel agents is that the interaction with customers is usually limited to exchanging emails. The email messages take significant time to be processed and many travellers are being forced to switch to more traditional ways of communication (telephone or face-to-face) in order to have their questions answered. Moreover, our study showed that customers value social interactions, group booking and support of impulse decisions, which are currently not properly addressed in the online booking portals.

In order to successfully eliminate the drawbacks of online travel agents, we propose the utilization of 3D Electronic Institutions technology (Bogdanovych et. al, 2004) for their development. This technology supports the 3-dimensional interactive visualization (which proves to be one of the most appropriate technologies for conveying experience-related information) and provides strict institutional control over interactions between the travellers and travel intermediaries (helping to have a high level control over security issues). The employment of 3D Electronic Institutions has the following advantages (for more details see Bogdanovych et. al, 2006):

- It provides a 3-dimensional virtual experience, which is entertaining and also most informative. Due to the immersive nature of the environment the user involvement is much higher. The communication between participants is chat-/multimedia-based, rather than e-mail based, and the conversation context is visualized.
- Due to the fact that a 3-dimensional space has as many degrees of freedom as the real world it offers a best possible way to observe the behaviour of a customer and create a user profile. Moreover, the architecture of 3D Electronic Institutions provides facilities to make it implicitly (without any customer involvement).
- The self-images (especially the ideal ones) are easier to discover, as the users design their representation, in terms of avatars, and in this way directly reveal a part of the ideal self-image.
- Information overload is reduced due to more diverse presentation facilities (text and 2-dimensional images vs. text, 3-dimensional images and models, sounds and movements) and due to personalized presentation. This also makes it easier to satisfy impulse travellers.
- Support of social interaction is an emergent property of 3D Electronic Institutions.
- Group booking experience is supported.
- The 3D Electronic Institutions offer mechanisms for an efficient collaboration of humans and software agents on behalf of the travel agent (helping to save human resources and provide users with more accurate suggestions).
- The 3D visualization does not only help the travellers to create stereoscopic images of a destination, but also offers travel agents the mechanisms to have influence over these images by exploiting the collected user profile.

- Detailed visualizations give a more objective description of the destination than catalogues with text and photos only.

The above discussed issues and requirements have been taken into account in the design of the "World Trotter" – a prototype of an online travel agency that is based on the 3D Electronic Institutions technology, which we present in the next section.

3 The "World Trotter" Travel Agency

To assist the understanding of how 3D Electronic Institutions technology addresses the major problems of travel providers and highlight the main features of the "World Trotter" application we provide the following two typical consumer scenarios:

Fig. 1. Booking Room

Scenario 1. Michael and his wife are planning their honeymoon trip. They want to escape from a cold winter and go to some exotic destination, but are not sure which place to select. Their requirements are not very precise: they need a small but romantic room somewhere in a tropical paradise with coconut trees on the beach, where they can enjoy warm temperatures and swim in the ocean. Searching the web with such vague requirements requires sophisticated search skills and is time-consuming. Unfortunately, they currently work in different cities and it is hard to physically attend a travel agent's office together and make use of the human expertise. Therefore, they decide to visit the "World Trotter" travel agency. After registering they both proceed to the booking room (see Fig. 1) and start searching for the destination there. Michael has already been to the agency a couple of times, so the travel agent in the booking room knows his preferences. The preferences of his wife

are yet to be discovered. After a couple of virtual tours to different places and local hotels they finally decide to travel to Tahiti and reach an agreement about a particular hotel there. Newlyweds are satisfied; both his and her requirements are fulfilled and the price is very competitive. Michael exits and continues with his work, while his wife decides to spend some time in the virtual shop. As suggested by the travel agent, she participates in the free presentation about the bargaining techniques on Tahiti. She also walks through the shop to check the prices and see what can be bought or rented there, so that some space in their bags can be cleared.

Scenario 2. David is up to a short adventure on the coming weekend. On Thursday he enters the "World Trotter" to see if he can acquire a cheap ticket to some unvisited destination in Australia. He registers and moves to the auction room. There he quickly finds a cheap last minute ticket to Darwin. In search for an accommodation he enters the booking room. There he describes his requirements and, together with the travel agent, visits a couple of hotels using the visualization service of the institution (see Fig. 2). From the proposed choices, pretty much similarly priced, he selects a small but comfortable room close to the airport. The travel agent also makes a very competitive offer on the 4-wheel drive rental, which David accepts. To check that he didn't forget anything, he enters a virtual shop, which is a 3D visualization of one of the local Darwin stores. He starts a conversation with the shop assistant agent. As he wants to visit the Kakadu National park, the shop owner recommends him to buy a particularly strong mosquito repellent. David puts the mosquito repellent into the shopping basket and continues walking around the store. He finds himself a nice hat, a sunscreen, water and some snacks for the long driving trip. On arrival all the purchased products will be delivered to David's hotel room.

Fig. 2. Hotel Visualization Service

The above scenarios are developed on the basis of the system requirements, generated from the outcomes of previously conducted sociological study (Bogdanovych et. al, 2006). In order to implement those we applied the 3D Electronic Institutions methodology to the development of the "World Trotter Institution" prototype. The main steps of this methodology include: formalization of requirements (specification), generation of a 3D Virtual World from the specification and deployment. Further in the paper we describe these steps in more details.

3.1 Formalization of requirements into an institution specification

The first step in specifying an institution is determining the set of roles that users will be allowed to play. In this context a role defines a pattern of behaviour establishing what actions participants playing the role will be allowed to do. The "World Trotter" contains the following roles:

- Customer: participants entering the institution to acquire travel products
- Travel Agent: devoted to assist customers in looking for destinations and products, and booking them.
- Auctioneer: in charge of governing the auction scene.
- Receptionist: in charge of controlling which customers enter the institution.
- Shop assistant: in charge of managing the shop.

From the set of roles of an institution we distinguish between the internal and external roles. As an institution delegates their services, duties and tasks to internal roles, we do not allow external participants to play them. Hence internal roles can only be played by institution employers. Thus, external users are only allowed to play external roles. In the "World Trotter" there is only one external role, the Customer role, while the rest are internal roles.

The activities in an institution are the composition of multiple, distinct, and possibly concurrent, dialogical activities, each one involving different groups of participants playing different roles. For each activity, interactions between participants are articulated through group meetings, called scenes that follow well-defined communication protocols. The protocol of each scene models all the possible dialogic interactions between roles, and it can be multiply instantiated by different groups of participants. The "World Trotter" has the following scenes:

Reception: where customers are asked to identify themselves by their login and password. Furthermore, in this scene customers can ask the receptionist about the different scenes in the institution and their location.

Booking and Destination Search: where customers can search and book travel products through interaction with a travel agent. Customers can ask for destinations using different criteria, for instance, activity or location and get back the destinations that fulfil their requirements. They can also move to a virtual representation of a destination (as on Fig. 3). Moreover, the travel agent can also make suggestions or inform them about current special deals taking into account customers' preferences. This scene covers all the issues related to the searching and booking of travel products except for the hotel selection, which is carried out in the Hotel Room scene.

Fig. 3. Virtual Amsterdam tour as implemented in Second Life technology

Hotel Room: helps customers to book their hotel. As a starting point, a customer is presented with an opportunity to explore a 3D reproduction of a suggested hotel room. If the user is satisfied with it the travel agent can book it straight away. If not, another hotel room will be presented to the customer. The process continues until the customer finds an appropriate accommodation or decides to leave the scene without booking a hotel. While searching through hotels customers can inform the travel agent about their preferences and explain why they do not like a particular offer. Thus, the travel agent can use this information when selecting the next hotel room to show.

Auction Room: where last minute products (flights, hotels etc.) are sold by the auctioneer following the downward bidding protocol.

Shop and renting: where users can buy or rent useful items for their trip. The decoration and the goods shown in the shop depend on the destination. Customers choose between getting acquired goods delivered to their home or to specific points of their destination (e.g. to their hotel room).

While a scene models a particular multi-agent dialogic activity, more complex activities can be specified by establishing networks of scenes, so-called Performative Structures. These define how participants can legally move among different scenes depending on their role. Scene connections are mediated by transitions, which permit to express synchronization and parallelization, and choice points.
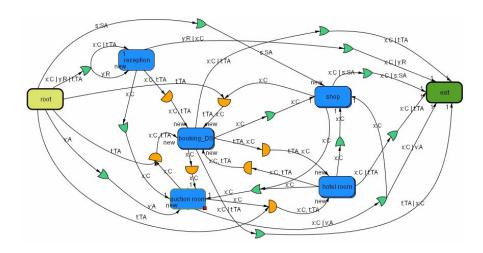

Fig. 4. Performative Structure of the World Trotter Institution

Figure 4 depicts the Performative Structure of the World Trotter Institution., where rectangles represent scenes and semicircles (synchronisation and parallelisation points) and triangular shapes (choice points) are transitions. Labels on the arcs determine which roles can move among them. Besides the scenes presented above the figure also includes the root and exit scenes, which represent the institution entrance and exit. Notice that customers (C) are required to start in the Reception scene, where they have to identify themselves. After the registration, they can progress to the Auction Room or the Booking and Destination Search scenes. Once in any of them they can freely move among these two scenes and the Hotel Room and Shop scenes. In the case of internal roles, receptionists (R) can go to the Reception, auctioneers (A) to the Auction Room, shop assistants (SA) to the Shop, while travel agents (TA) can access the Reception, Booking and Destination Search and Hotel Room scenes.

3.2 Generation of the 3D Virtual World

On the generation step of the methodology the 3D representation of the specified institution is created. To make this process more efficient, the specification from the

previous step is automatically transformed into a 3D design in Second Life1 (the 3D Virtual World platform used for the current implementation). The scenes and transitions become 3D rooms; and the arcs that connect them in the Performative Structure are transformed into doors between those rooms. For achieving such automation, we adopt a computational approach using design grammars (Gu and Maher, 2005). Design grammars utilize a set of design rules, which illustrate and describe the forms and functions of each design element in the institution. The design rules are selectively applied by a software program to generate suitable 3D designs for the institution as needed. This process provides a linkage that translates the "specification language" of the institution into the "design language" of 3D Virtual Worlds. The generated designs are stored in a Design Database whose format can be flexibly adapted to suit different 3D Virtual World platforms for implementation.

This approach has a number of advantages. Firstly, the changes of the specification and of the runtime environment can be automatically addressed through the grammar application (by alternating the choices and order of the design rules during the application). Secondly, the use of the Design Database makes the system platform independent. Using a different 3D Virtual World platform for design implementation will only require a simple re-mapping between the elements of the database and basic primitives of the Virtual World, without undergoing any major system changes.

Fig. 1 and Fig. 2 illustrate the capabilities of the design generation technique applied to Booking and Hotel rooms. The designs of the virtual destinations are not generated by design grammars. Second Life is a joint environment, designed and shared by thousands. Our prototype makes references to existing virtual attractions (i.e. virtual Hawaii, Paris, Amsterdam - Fig. 3, etc) when illustrating the destination tours.

3.3 Deployment

For the deployment of the "World Trotter" prototype we use a 3-layered infrastructure. First layer is called AMELI (Esteva et. al, 2004). It regulates the interactions of participants by enforcing the institutional rules established by the specification. AMELI keeps the execution state of the institution and uses it along with the specification to guarantee that participants' actions do not violate any of the institutional constraints. Second layer is the 3D Virtual World, generated on the previous step. Finally, the third layer is the Causal Connection Server (Bogdanovych et. al, 2004), which causally connects AMELI and the 3D Virtual World. This means that every action executed in the 3D Virtual World results in a change of the institutional state in the AMELI layer and vice-versa. This 3-layered structure ensures

---

1 http://secondlife.com

the enforcement of the institutional rules during business activities in the 3D Virtual World and is essential for the security, scalability and interoperability of the system.

4 Conclusion and Future Work

This paper has presented the characteristics of travel products, motivations of the customers to travel and the drawbacks of existing travel providers. Based on the acquired knowledge we proposed an online travel service implemented as a 3D Electronic Institution. The characteristics of being experience economy focused have been demonstrated through the prototype of an online travel agency. This prototype is still under development. The future work includes the refinement of the system architecture and a user study. The refinement of the system will proceed from two different perspectives: to improve the services of the institution and to improve the qualities of 3D Virtual World designs. The user study will provide an opportunity to further test the system in practical situations and collect important usability statistics.

References

Bogdanovych, A. Berger, H. Simoff, S. and Sierra, C (2004) E-Commerce Environments as 3D Electronic Institutions. *Proceedings of EC2004 conference*, Lisbon, Portugal: 237-242.

Bogdanovych, A. Berger, H. Simoff, S. and Sierra, C (2006) Travel Agents vs. Online Booking: Tackling the Shortcomings of Nowadays Online Tourism Portals. *Proceedings of the (ENTER'06) conference*, Lausanne, Switzerland: 418-428.

Britton, R (1978) The Image of the Third World in Tourism Marketing. *Annals of Tourism Research*, v.6, n.3: 318-329.

Edgell, D. L. (1990) *International Tourism Policy.* Van Nostrand Reinhold. New York.

Esteva, M., Rodríguez-Aguilar, J. A., Rosell, B. and Arcos. J. Ll. (2004) AMELI: An Agent-based middleware for Electronic Institutions. In Proceedings of the Third International Joint Conference of Autonomous Agents and Multiagent Systems: 236-243

Gee, Chuck. Y., Makens, James C. and Choy, Dexter J.L. (1997) *Travel Industry. Third Edition*. Van Hostrand Reinhold Publishing.

Gu, N. and Maher M.L. (2005) Dynamic Designs of 3D Virtual Worlds Using Generative Design Agents, *Proceedings of Computer Aided Architectural Design Futures 2005*, Springer, Dordrecht, Netherlands: 239-248.

Jackson, Ian. (1997) *An introduction to tourism*. Melbourne: Hospitality Press Pty.Ltd.

Palmer. A. & Bejou, D. (1995) Tourism destination marketing alliances. *Annals of Tourism Research*, 22(3): 616-629.

Pine, B.J. II & Gilmore, J. (1998) Welcome to the experience economy, *Harvard Business Review*: 97–105.

Rugg, D. (1973) The Choice of Journey Destination: A Theoretical and Empirical Analysis. *The Review of Economics and Statistics*, vol. 55(1), MIT Press: 64-72.

Sirgy, J. M. and Su, C (2000) Destination Image, Self-Congruity, and Travel Behavior: Toward an Integrative Model. *Journal of Travel Research*, Vol. 38, May 2000, 340-352.

Vladimir, A. (1989) *The Complete Travel Marketing Handbook.* NTC Business Books, USA.

Yeoman, I. Durie, A. McMahon-Beattie, U & Palmer, A (2005) Capturing the essence of a brand from its history: The case of Scottish tourism marketing. *Journal of Brand Management*. Vol 13, No 2: 34-147.