

Collaborative-Based Web Recommender System for Homestay Program: A Bridging Tool in a Tourism Supply Chain

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Abstract - Homestay Program (HP) initiatives play an important role in Community-based Tourism (CBT), especially for Malaysian tourism industry. HPs offer activities that are catalysts to the community development, focusing those in the rural areas. However, due to technological advancements, promotion and marketing strategy for the unique CBT initiative needs a new and inventive move. This leads to the proposed technology-based framework for a system as part of the specific CBT supply chain (CBTSC), known as the Collaborative-based Web Recommender (CBWR) system or simply, website. The CBTSC is further intensified to emerge the CBWR sub-supply chain model. As part of the CBWR model, the CBWR website is able to essentially promote the CBT effort of HP worldwide, thus supports community development and livelihood.

Keywords - Homestay Program, Collaborative-Based Web Recommender System, Community-Based Tourism Supply Chain, Technology-Based Promotion and Marketing, Rural Community-Based Tourism

1. Introduction

Tourism has become one of the instrumental forces for certain countries' socio-economy progress, nowadays. The prospect of tourism industry is amazingly bright as reported by the United Nation World Tourism Organization (UNWTO) that about 1.235 million of international tourists traveled around the globe in [1] and the number showed an increase from the previous year. Subsequently, for the Asia and the Pacific region, there was more than 8% growth in international tourist arrivals in 2016, which is being driven by strong demand from both intra- and interregional source markets [2]. Evidently, the industry is advancing rapidly and contributing to the

growth of not only developed countries but developing countries as well, such as Malaysia. It is also found that tourism and its potential in developing countries have been determined to be a significant predictor for the growth of global tourism [2]-[4].

In Malaysia, tourism is one of the main contributors to its economy. The efforts taken by the authority of Malaysia for the growth of and in promoting tourism have produced notable outcomes, as evidenced by the UNWTO list as the ninth most visited country in the world [5]. Tourism has made an impact in Malaysia for quite some time, and the reason behind it is because most of its products are nature and culture-based, especially in the rural areas. These related initiatives and activities are catalyst to the community development [6], which can directly improve the economy in the rural or non-urban areas. This strategy is a component of the community-based tourism (CBT) [7], where one effort is through the homestay program (HP).

The HP is unique to Malaysia since it was the initiative of the Malaysian government, where many HPs have been established around the country with the intention to attract local and foreign visitors. However, it can be generally seen that not many significant changes have taken place since the inception of the novel idea some 40 years ago. Obviously, there are some challenges to operate a HP in Malaysia.

One of these challenges is related to promotion and marketing [8]-[9]. Consumers who are potential tourists are turning away from the traditional sources of advertising, such as radio, television, magazines and newspapers [10]. These consumers also consistently demand more control over their media consumption [11]. They require on-demand and immediate access to information at their own convenience [12]-[13]. Hence, promotion-related role of technology-based media is important [14] and essential in this era of internet of things (IOT). This brings the attention to the focus of our paper, which is the technology-based

promotion of CBT. The technology-based effort is a new and crucial part of the tourism supply chain (TSC), specifically the CBT supply chain (CBTSC). Therefore, the objective of this paper is to introduce a model for the CBTSC, where an architecture for one of the components in the CBTSC is the crucial part. This component represents the inventive move for a technology-based tool in promoting the unique CBT initiative embedded in the TSC.

Subsequently, the organization of the rest of the paper is as follows. The next section continues with the discussion and reviews on the CBT supply chain. The following section 3 presents the proposed CBT supply chain model for the HP initiative, where the CBWR supply chain structure and CBWR system architecture are emphasized. Discussion is described in the following section. The final section concludes our work on the technology-based tool for CBT supply chain along with some potential future works.

2. Community-Based Tourism Supply Chain

CBT is a tourism initiative which involves participants of a community with the aim of improving the livelihood of the community [15]-[16]. In order to improve tourism in a manner which is more appropriate to the rural community, CBT has to be taken as an active effort as suggested by [17]. The involvement of the community under CBT includes many strategies, such as in the aspects of tourists and demand, community and location, fortification of atmosphere and tourism destination, which can help the non-urban areas particularly to grow and partake in the tourism sector nationally [18]. As is known, one of the active CBT initiatives in Malaysia is the HP as also being studied by [6]-[7], [19]-[20].

On the other hand, supply chain management (SCM) is a concept that originated and flourished in the manufacturing industry. However, it has started to be given the attention in relation to the tourism industry by [21] - [27]. Evidently, these studies are aware of the potential benefit of the tourism value chain.

Certainly, CBT as a more specific initiative of the tourism industry could take advantage of this value chain, which includes e-Tourism functions. Due to that, it is important to promote the community-based product to the appropriate market segment as suggested by [28]. This can be strategized by increasing the competitiveness of CBT through effective tourism SCM as recommended by [26]. Since there has been considerable growth in the implementation of technologies and the development of new commercial formats, such as content management system (CMS) [9] or commonly known as website and other internet-based technologies, the CBT SCM need to be reexamined.

Furthermore, the emergence of ground-breaking technologies have somewhat changed the landscape of the

supply chain in this service typed of industry. Internet-based technologies have rapidly advancing in many aspects [29]-[31]. Therefore, the CBT strategy needs to take advantage of any relevant technology, which could be employed in the effort to promote and market, specifically the HPs in Malaysia. Thus, in parallel of these development and change, there seems to exist a new value chain in the CBTSC.

3. Proposed CBT Supply Chain Model

In the earlier work, [26] constructed the landscape of the TSC as shown in Figure 1. With the current development, we then reconstructed TSC to adapt to the CBT condition and thus proposed the new value chain as the CBTSC as shown in Figure 2. As a result, a technology-based tool in the form of a system (i.e., recommender website) is included in the CBTSC as one of the impactful chain. Based on the initial work by [8] and [9], this specific new chain or component is known as the Collaborative-based Web Recommender (CBWR) system or website, which is further intensified to emerge the CBWR sub-supply chain model.

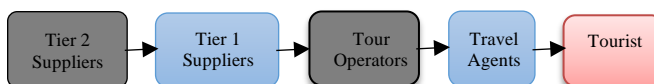


Figure 1. The Conventional Tourism Supply Chain

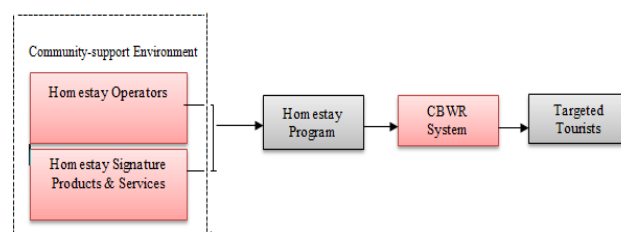


Figure 2. The proposed CBTSC for a HP Business Initiative

3.1 CBWR Supply Chain Structure

Subsequently, the emerged sub-supply chain or simply SC in its specific functionality, helps to explain the role of the new value chain, i.e., the CBWR system. This system has its own value chains involving users (i.e., potential tourists), CBWR website, individual HP websites and homestay operators, who communicate about the signature products and services offered by their HPs. This unique CBWRSC is exhibited in Figure 3. In this specific chain arrangement, the CBWR system is better known as the CBWR website.

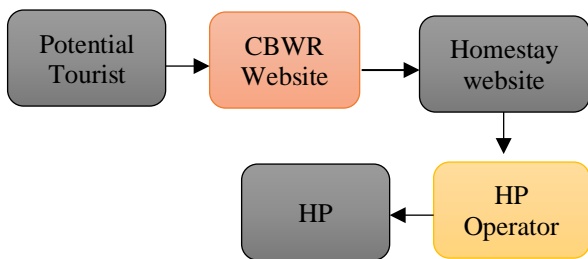


Figure 3. The CBWR sub-supply chain structure

3.2 CBWR System Architecture

Specifically, the CBWR system or website was developed with the special Collaborative-based Web Recommender Algorithm [9] embedded to function effectively in the CBTSC. The architecture for this CBWR system is as shown as in Figure 4. The system captures users’ preferences and then recommends suitable HP websites to new users using collaborative strategy.

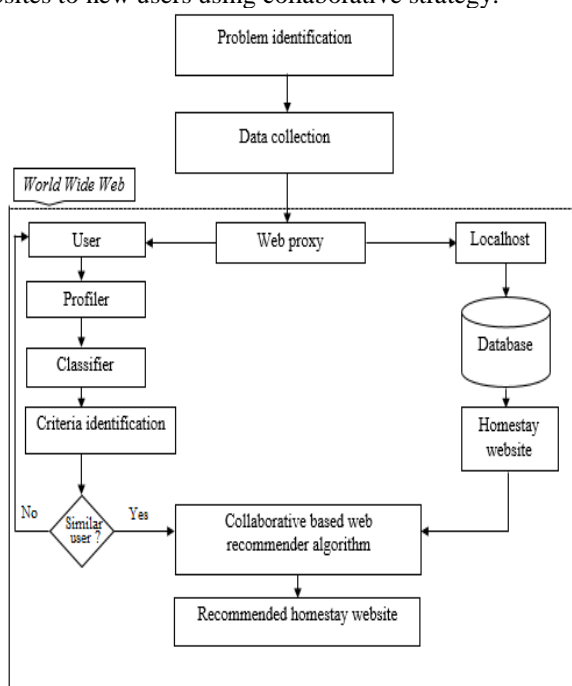


Figure 4. CBWR System Architecture Embedded in the CBTSC

4. Discussion

CBWR website is an online information platform designed to promote homestay programs as one of the tourism destinations around the globe which acts as a technology-based promotion engine for the CBT. The technology-based effort is a new and crucial part of the CBTSC. As a result of this technological advancement, a website with a recommending ability was developed to promote the Malaysian HPs to users and operators. Users are normally potential tourists or visitors trying to browse the World Wide Web (WWW) or simply the internet to see

what are available for them to experience at a certain locations throughout the world.

Of course, the location and attraction of interest greatly depend on their allocated budgets. Hence, the recommender type of website is beneficial to these users, where they could obtain varieties of information to assist them in making decision on the choice of their vacation and exploration. They can view current information, either in the form of text, visual or even audio that are provided by the keen operators in the effort to promote their tourism initiatives.

Likewise, the proposed CBWR website provides varieties of information relating to the participating HPs along with their signature products and services. The main page of the CBWR website shows the HP information, where a user could dive into several pages to learn more about a particular HP through its individual website. It can be accessed through www.homestaykedah.com link and the caption of its main page is as in Figure 5. This CBWR website and the participating individual HP websites stand as a medium to promote CBT through one of the emerging electronic marketing platforms.

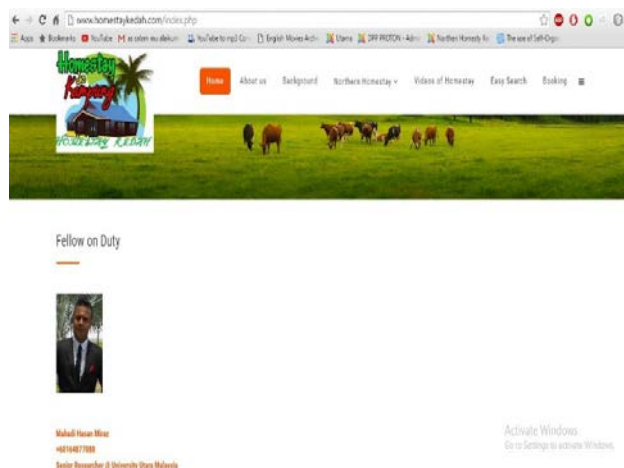


Figure 5. The main page of CBWR Website

5. Conclusions

Conclusively, an architecture for the technology-based tool used in promoting the unique CBT initiative, i.e., the HP was established, along with its related SC model. The SC and CBWR website emphasized on the technology-based effort, which is a new and crucial part of the CBTSC. As the new value chain in the CBTSC, the CBWR website is able to essentially promote worldwide the CBT even if the destination of interest is in the rural areas. This effort is in accordance with the significant development of the internet technologies.

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