Tourism Mobile Recommender Systems: A Survey

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Abstract— The growth in tourism industry shows a positive trend in Indonesia because of human needs, infrastructure, and the Internet to support it. To link these aspects, tourists need mobile recommender systems to make everything handle and control easily. From one system tourists can get access to the information, plan their itinerary, get the suggestion, and share the experience. The collaborative, content and hybrid method become the source to enjoy the journey. This paper will show the progress in the last ten years, and what future research that still open to explore.

Keywords — tourism; recommender system; mobile device; m-government; Orienteering Problem

I. INTRODUCTION

Traveling become one of the popular hobbies that growth very fast in this decade. Human needs traveling as the way to entertain, to skip for a while from the routine activities, and to get inspirations. The entire things that they want to enjoy push them to plan it well and make it controllable. That is why they need good information, because usually it takes their time but they have never come to the destinations. It becomes a gambling and they try to reduce the risk.

Government and private company as the administrator of the destination has a big job to coordinate, facilitate and run this business seriously. Tourism becomes one of the prospecting fields besides mining and export commodity that give most of the foreign exchange in a country. The World Tourism Organization’s [1] predicts on 2020 international arrivals will almost 1.6 billion, which 1.2 billion of it is from the neighbour countries and 378 million will be long-haul travellers. The top three regions are Europe (717 million tourists), East Asia and the Pacific (397 million) and the Americas (282 million), followed by Africa, the Middle East and South Asia. This good thing is also happened in Indonesia, especially East Java while this province got the highest percentage on total traveling amount from all the provinces in Indonesia in 2014.

Increasing of the wealth of local people, awareness to appreciate the beauty of Indonesia, and improvement in infrastructure make citizen change the tourist’s role. The government reduce the irregularity that makes tourists uncomfortable and unsafe in their own country. Government also promotes frequently on media about destinations in Indonesia. The government repairs the access to get there, improve the transportation mode and network, develop a better regulation, and evaluate the private company who can run the tourism business in specific standard.

Information is the important key to fulfill the tourists’ expectation. The more positive information that tourists get, the more interesting to visit that destination. It will be better if the responsible organization like the government by using m-government can handle the information. Even though sharing is good because the data will be very dynamic and update, in other hand it can spread the negative experience that maybe not every people feel it. With a growing fast of the Internet penetration and the life style using a gadget, it will encourage tourists to get access to the information frequently. This is become a challenge because if too many websites shows the information, it will be more difficult for the tourists to filter it. Another challenge is how to make the websites more valuable, not only shows the data.

This is the time for tourism mobile recommender systems to come. The growth of the internet era and mobile device make the user easier to access the information and operate some traveling applications. Brown and Chalmers [2] did the ethnographic study of the city. They tried to classify the technology needs, from how the tourists work in group, share their knowledge about surrounding on maps and guidebooks, and places that they visit in pre and post destination. The interest thing that concludes from this research is good tourists’ technologies are not only those that make tourists more efficient, but also make them enjoy to use it. Sharing is important too because tourist as a human need social interaction. This research continues with Liu et al. [3] who used travel information from the internet for personalized travel recommendation. They built Tourist-Area-Season Topic (TAST) model, using a Bayesian network and follows a hybrid recommendation, combination of collaboration and content resource. It is the same with Sharma and Gera’s research [4] that classified recommendation techniques into three major categories: Collaborative Filtering, Content Based and Hybrid Recommendations. The collaborative will filter the process work by collecting user feedback. The content-based recommendation system will consider user’s interest and profile, while hybrid recommends combine multiple recommendations techniques. Vansteenkoven and Oudheusden [5] started their research by building model that consider changes in weather condition suddenly or modification in opening hours. So they created Next Generation Electronic Tourist Guide or ETG. The ETG will