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“Optimizing Innovation in Knowledge, Education and Design”

EXTENDED ABSTRACT



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Assalamualaikum warahmatullahi wabarakatuh,



First and foremost, I would like to express my gratitude to the organizing committee of i-Spike 2023 for their tremendous efforts in bringing this online competition a reality. I must extend my congratulations to the committee for successfully delivering on their promise to make i-Spike 2023 a meaningful event for academics worldwide.

The theme for this event, 'Optimizing Innovation in Knowledge, Education, and Design,' is both timely and highly relevant in today's world, especially at the tertiary level. Innovation plays a central role in our daily lives, offering new solutions for products, processes, and services. By adopting a strategic approach to 'Optimizing Innovation in Knowledge, Education, and Design,' we have the potential to enhance support for learners and educators, while also expanding opportunities for learner engagement, interactivity, and access to education.

I am awed by the magnitude and multitude of participants in this competition. I am also confident that all the innovations presented have provided valuable insights into the significance of innovative and advanced teaching materials in promoting sustainable development for the betterment of teaching and learning. Hopefully, this will mark the beginning of a long series of i-Spike events in the future.

It is also my hope that you find i-Spike 2023 to be an excellent platform for learning, sharing, and collaboration. Once again, I want to thank all the committee members of i-Spike 2023 for their hard work in making this event a reality. I would also like to extend my congratulations to all the winners, and I hope that each of you will successfully achieve your intended goals through your participation in this competition.

Professor Dr. Roshima Haji Said
RECTOR
UiTM KEDAH BRANCH



WELCOME MESSAGE (i-SPIKE 2023 CHAIR)



We are looking forward to welcoming you to the 3rd International Exhibition & Symposium on Productivity, Innovation, Knowledge, and Education 2023 (i-SPIKE 2023). Your presence here is a clear, crystal-clear testimony to the importance you place on the research and innovation arena. The theme of this year's Innovation is "*Optimizing Innovation in Knowledge, Education, & Design*". We believe that the presentations by the distinguished innovators will contribute immensely to a deeper understanding of the current issues in relation to the theme.

i-SPIKE 2023 offers a platform for nurturing the next generation of innovators and fostering cutting-edge innovations at the crossroads of collaboration, creativity, and enthusiasm. We enthusiastically welcome junior and young inventors from schools and universities, as well as local and foreign academicians and industry professionals, to showcase their innovative products and engage in knowledge sharing. All submissions have been rigorously evaluated by expert juries comprising professionals from both industry and academia.

On behalf of the conference organisers, I would like to extend our sincere thanks for your participation, and we hope you enjoy the event. A special note of appreciation goes out to all the committee members of i-SPIKE 2023; your dedication and hard work are greatly appreciated.

Dr. Junaida Ismail

Chair

3rd International Exhibition & Symposium Productivity, Innovation, Knowledge, and Education 2023 (i-SPIKE 2023)

MAJLIS PERBANDARAN HANG TUAH JAYA SMART APPS (myMPHTJ)

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Suharto bin Teriman, Muhamad Irham bin Mohd Zukifli, Mohamad Daniel Mustaqim bin
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ABSTRACT

Websites, and online applications have widely been used either in local authorities or private sector agencies. However, there are issues highlighted in the Malaysia Smart City Framework (2018) under the smart government tier, citing lack of public information sharing from the government, low quality in e-government services, and lack of information and data sharing in and between government agencies. The aim of this study is to propose an integrated application that is user friendly and highlights all the information that is needed by the public as well as tourists. This study adopts content analysis method to explore data attributes particularly on websites and online applications developed by the local authority of Majlis Perbandaran Hang Tuah Jaya (MPHTJ). Interview sessions were held with tourists and local people to identify the information they usually need to be included in the application. Findings revealed that there is plenty of information sought by local people and tourists such as information about tourism, land use, traffic, and transportation as well as infrastructure and utilities. Unfortunately, there is no integration between all the existing websites and applications. Hence, an application called myMPHTJ was proposed to integrate these websites and applications from the various departments within MPHTJ. The integration is expected to offer ease of use by the local people as well as tourists in MPHTJ. It is hoped that the development of this application would benefit not only Majlis Perbandaran Hang Tuah Jaya authority but also other local authorities as well.

Keywords: Smart Application, Local Authority, Integrated Application

INTRODUCTION

Several applications have been developed by the government to ease the community and to provide sufficient information to the public. However, there are issues where users need to search from one application to another to get information. The public needs to download every application such as parking apps, tax payment apps and websites to ease their business appointment with the local authority. Tourists on the other hand, need to use google maps, online ticketing, accommodation and other websites or applications to facilitate their vacation experience.

In addition, there are issues highlighted in the Malaysia Smart City Framework (2018) under the smart government tier which are lack of public information sharing from government, low quality in e-government services, and lack of information and data sharing in and between government agencies. One of the critical issues is the lack of integration on the various systems implemented by the local authority (Pihak Berkuasa Tempatan) (Tuan Hazam Sharifah Robiah, Noorhayati Mansor & Asniati Bahari, 2020).

The aim of this study is to propose an integrated application that is user friendly and highlights all the information that is needed by the public as well as tourists. This idea is realized in the form of an integrated local authority system called myMPHTJ. The idea of myMPHTJ is to achieve the concepts of Smart City Globally which are using information, communication, and digital technology to address urban challenges, improve urban management and quality of life, sustainability, efficiency, and security. Secondly, is to increase economic and business activities. Finally, the concept also includes continuous public participation and urban innovation. (Malaysia Smart City Framework, 2018)

METHODOLOGY

This study adopts content analysis method to explore data attributes for the application as suggested by Kim & Kuljis (2010). The study intends to analyse the availability of websites or online applications developed by the authorities in MPHTJ. Besides that, interviews were done with tourists and local people to identify the information they usually need to be included in the application.

FINDINGS

For government website, only the local authority website, which is Majlis Perbandaran Hang Tuah Jaya, and supported by other government websites such as MelakaPay, PLANMalaysia@Melaka and other websites belonging to neighbouring local authorities. Hence, the information provided for the community in MPHTJ through this website is not as comprehensive as one would have hoped for. Tourists for example can visit the Tourism Melaka website for information such as tourist attractions, accommodation, food, and shopping spots. Unfortunately, there is no integration between all these websites.

From the interview session conducted, it was found that most of the community and tourists agreed that they have difficulties in obtaining information and dealing with websites and online applications regarding booking, identifying location and other matters that are useful to enhance tourism experience. The analysis revealed that there are five main sectors involved in the proposed integrated system, namely tourism, land use, transportation, and infrastructure and utilities where each of these sectors will have its own attribute (Table 1).

Table 1: Sector and Attribute in an Integrated Local Authority Application

No.	Sector	Attribute
1	Tourism	Tourism Spot & its Location which is linked with Google Map, Ticketing, Accommodation
2	Land Use	Lot Finder, Existing Land Use, Elevation & Street View
3	Traffic and Transport	Traffic status, Micro Mobility, Parking, Bus, Ticketing
4	Infrastructure and Utilities	Information on natural disaster such as flood, schedule waste information, road conditions

It can be generally said that there is plenty of information that is needed by tourists and local people. Hence, the integration of all this information in one smart application will ensure the application is more robust, accessible and easier to be utilized by these users.

PRODUCT DESCRIPTION

myMPHTJ is an integrated application that is developed for the ease of local people as well as tourists of MPHTJ and those from the surrounding. This application integrates the information under the Town Planning Department which includes information regarding tourism, land use, transportation, as well as infrastructure and utilities. This application can be utilized primarily on mobile phones and can be downloaded from the Apple Store or Google Play Store. The application, however, can also be accessed from the website.

Image 1, 2, 3, 4 and 5 shows the interface of myMPHTJ smart application. The application will offer interactive information as follows:

Tourism: The Adventour (Tourism Spot & its Location which is linked with Google Map), Ticketing, The Travel In (Accommodation), Easy and Safe Tourism (Facilities), Easy Move (Transport such as eHailing and Public Transport), Promotion Zone (Tourism Package), The Peace of Art (Info on Local Handcraft business)

Traffic & Transport: myInfo Smart Parking, Link Bike (e-bike rental service), Great Moving (Schedule and ticketing of Bus Singgah-singgah)

Land Use: Lot Finder, Existing Land Use, Elevation & Street View

Infrastructure and Utilities: myInfo Smart Flood, mySmart Digital, mySmart e-Waste

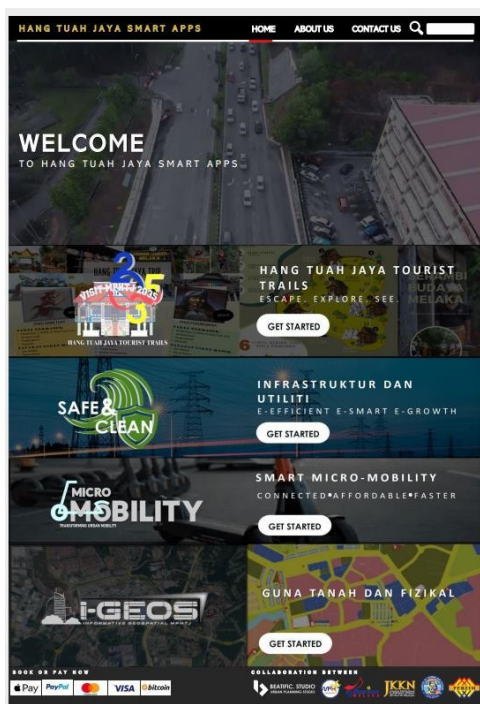


Image 1: Home interface of myMPHTJ

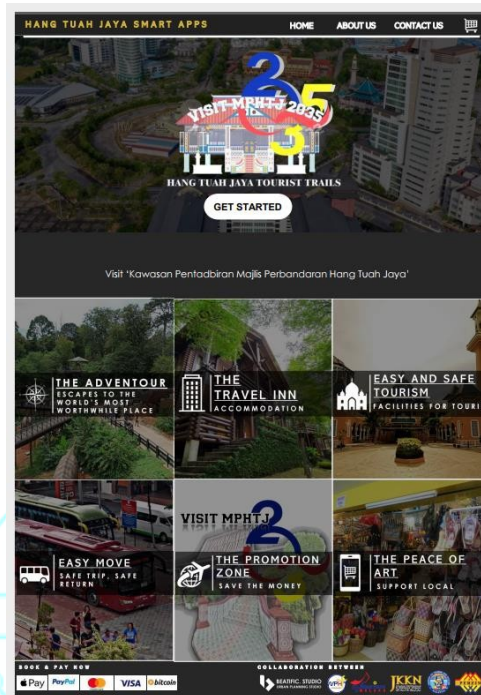


Image 2: Interface of Tourism sector

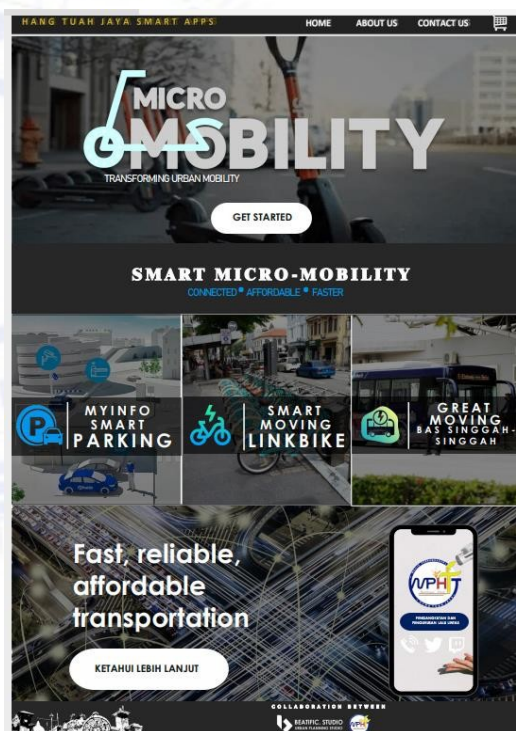


Image 4: Interface of Traffic & Transport Sector



Image 3: Interface of Land Use Sector



Image 5: Interface of Infrastructure & Utilities Sector

NOVELTY AND COMMERCIALIZATION

myMPHTJ has uniqueness, especially in terms of integrating the information of each department under MPHTJ jurisdiction. It does not only act as a database, but the development of myMPHTJ may ease every level of local people and tourist as it provides relevant information such as payment services for ticketing, tax, location, availability and much more.

Furthermore, the interface was design straight forward and robust so that it is user-friendly and can be used by all ages and education level. Hence, this application becomes a centralized database for the community and tourists that came to Majlis Perbandaran Hang Tuah Jaya, Malacca.

myMPHTJ should be promoted on social media platforms, and QR code should be available on billboards and attraction area such as RNR Ayer Keroh, Pengkalan Batu, bayou Lagoon, MITC Malacca, Kolam Ayer Panas, as well as all tourism spots in Ayer Keroh. myMPHTJ will becomes a centralized application for MPHTJ and the product can be promoted and develop in another local authority as well.

CONCLUSION

In conclusion, innovation of mobile applications has the potential to improve accessibility, and convenience in various sectors of our society, and could be very helpful for the community and tourists. However, the application should integrate all useful information in one friendly application. It is hoped that the development of this application could benefit notonly MPHTJ Jaya authority but also the other authorities.

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