Realizing Smart City Through Jababeka Smart Township Super Apps

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Abstract – The community service activity, which is a combination of three President University flagship research about the creation of a Smart Ecosystem that will be outlined in the Jababeka Smart Township application, allows students and the community to work together to build a Smart city in the Jababeka area. The goal of this community service project is to create a smart city that involves everyone. The strategy employed is direct community implementation by involving President University instructors and students. According to the findings, Jababeka Smart Township Super Apps invites the community and students to participate in and contribute to this application. According to waste management studies, there is a need for timely and accurate information about the presence of garbage and the availability of waste processing facilities. Waste processing facilities were discovered as a result of waste management research. According to the findings, Jababeka Smart Township Super Apps invites the community and students to participate in and contribute to this application. According to waste management studies, there is a need for timely and accurate information about the presence of garbage and the availability of waste processing facilities. Garbage processing and waste management facilities can be visited by the general public, according to waste management studies. The trash management app on display at Jababeka Smart Township Super Apps will assist the community in garbage management while also allowing them to participate in waste management. President University's flagship tourism development research will provide information on tourist locations and all accessible tourist facilities, as well as accessibility to these tourist attractions. Furthermore, the need for information on the tourism industry might lead to the formation of tourism-related start-ups.

Keywords: Jababeka Smart Township Super Apps, waste management, tourism development, start-up

Introduction

One of the modern human requirements is accurate and timely information. As a result, smart city development is the best decision in this modern period. The availability of information that is quick and easy to get is critical to the development of smart cities. One of President University's main research projects is a study on the establishment of an integrated region through the design of an industry 4.0-based Smart Ecosystem.

This research in 2020 is in accordance with the Indonesian government's desire to improve community services through the notion of digital-based integrated services. More than merely offering services, the Smart Ecosystem can also allow the community to participate in the growth of the integrated service.

A smart ecosystem is an environment that allows people from all walks of life to contribute to the development of a better world. Smart Ecosystem is an environment that allows all aspects of society to participate in developing a smart environment based on digital technology. One form of the Smart Ecosystem is a digital platform that is open to the joining of various innovative applications to form an integrated service.

Several locations in Indonesia have adopted the Smart Ecosystem idea to provide integrated intelligent services, often known as Smart City. DKI Province, Bandung City, Makassar City, Surabaya City, Semarang City, Yogyakarta City, and Denpasar City are among the Smart City initiatives now underway. Given the success of Smart City implementation in many places, a team from President University would be unable to do this. As a result, President

University will select a strategic partner to assist in the implementation of the Smart Ecosystem. As the manager of industrial, commercial, and residential zones in Bekasi Regency, PT Jababeka was chosen. It is envisaged that by collaborating with PT Jababeka, the Smart Ecosystem can be implemented to its full potential, resulting in a clear impact, notably faster and better community services. Sustainable living would provide a higher quality of life for society.

Long-term sustainability and development are well-known concepts. However, just a few people are familiar with its content and debate (Kuckarts, 2004). The word "sustainability" comes from the Latin sustinere, which means "to keep going." For humans, sustainability refers to the capability for long-term management, which includes environmental, economic, and social aspects, as well as resource users' responsible management. Sustainability in ecology refers to the ability of biological systems to stay diversified and productive across time (Magee et al., 2012).

Sustainable development, on the other hand, is a pattern of urban, social, and economic expansion that is able to "meet current requirements without jeopardizing future generations' ability to satisfy their own needs" (World Commission on Environmental and Development, The Brundtland Report, 1987). As a result, sustainability is the long-term aim of life on Earth, and it is linked to the resilience of biological and social systems, while sustainability development is the path to long-term sustainability (Anon, 2020).

The term "sustainability" could be defined in a variety of ways. It is commonly acknowledged that in order to achieve sustainability, there must be a harmonious balance of economic, environmental, and social considerations. Figure 1 depicts this.

Figure 1. Triple Bottom Line for Sustainability Development
Source: Roger, Kazi, and John (2008)

The ability of a society, or any social structure, to achieve good social well-being throughout time is referred to as social sustainability. Meeting people's basic requirements, such as human rights, health, education, and equality, could lead to social sustainability. (Fisk, 2010) Economic sustainability necessitates that a company or country use its resources wisely and responsibly in order to run profitably and continuously. A company's operations cannot be sustained without an operating profit. A company's activities will not be sustainable in the long run if it does not operate properly and efficiently with its resources. People can only attain true sustainability by balancing economic, social, and environmental factors (Anon, 2020).

The purpose of this community service activity is to build Jababeka Smart Township Super Apps which will be one of the applications built and utilized by the community, put solid waste management as one application in Jababeka Smart Township, and put the tourism development in Jababeka area as one of application in Jababeka Smart Township.

Method

In this community service activity, an application was built that will provide information to students and the public to participate in making the applications needed to build a smart city. The Hackathon Competition was held to invite the participation of the community and including students.

In addition, from the results of other research that has been carried out by President University, namely research on community-based waste management and research on tourism development in areas managed by Jababeka, several application requirements have been obtained to simplify and improve the quality of life of the community.

Results and Discussions

From the beginning, Bekasi to Karawang has been recognized as a rice barn. This is a technical rice farming area, with rice fields watered by the Jatiluhur Dam's irrigation system. Rice production in Bekasi Regency still has a surplus of 200,000 tons, according to www.dkpp.jabar.go.id (2015), despite significant shifts in land use from agriculture to other uses. In Bekasi Regency, changes in the categorization of agricultural land as industrial districts happened quickly. PT Jababeka began the development of the industrial area in 1988 with the construction of the Jababeka industrial area, which was followed by the construction of other industrial areas. Jababeka 1, Jababeka 2, Delta Silicon 1, Delta Silicon 2, EJIP, BIIE, and MM 2000 were the seven industrial areas in Bekasi Regency in 2018. There are hundreds of enterprises with thousands of employees in every industrial sector. Thousands of workers in industrial districts must meet their fundamental needs, such as food, clothing, and housing, before moving on to secondary and tertiary needs. As a result, the growth of industrial estates will be followed by the growth of other necessities of life, and a new metropolis will emerge that will provide all of human existence's necessities. The agricultural and industrial sectors' contributions to GRDP (Gross Regional Income) in Bekasi Regency have fluctuated from year to year. During the period 1983–2016, the industrial sector's contribution to GRDP increased,

while the agricultural sector's contribution stayed relatively steady (Figure 2).
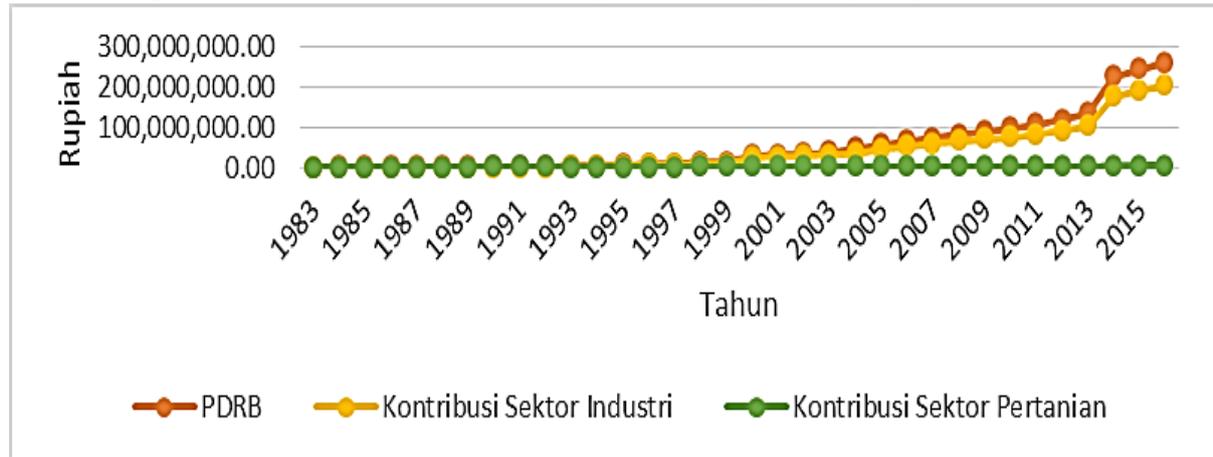

Figure 2. GRDP Development based on Current Prices, Contribution of the Agricultural Sector and Contribution of the Industrial Sector in Bekasi Regency, 1983–2016
Source: BPS Bekasi Regency (2017)

When people have a better life, one of the indicators is a higher level of income, and when people have a higher level of money, they are more likely to work more in order to preserve and increase their standard of living. The researcher's interpretation is similar to that of Marais (2010), who discovered that CSR in education allows communities to engage in the decision-making process that affects their lives, allowing them to gain more long-term control over their quality of life. People who preserve their quality of life will be able to involve themselves in helping others and making the world a better place to live. They will act responsibly based on a future-oriented, sustainable approach if they want to live in a better world.

Household waste creation can be managed by reducing waste generation and properly treating the waste generated. Waste creation can be reduced by the community itself, for example, by always reusing (rather than discarding) packaging materials, particularly those made of plastic (Aliu, Adeyemi, and Adebayi, 2014). Another endeavor is to recycle the garbage that is generated. Reduce, reuse, and recycle (the 3R movement) must be improved. Reusing garbage as a raw material is an excellent solution since, in addition to decreasing waste's environmental impact, it can also bring economic value to waste. According to Omran and Robinson (2009), the community's willingness to recycle waste is influenced by the facilities available for waste management, and one strategy that can be used is to provide trash bins for recyclable waste.

It is time to ditch the waste management paradigm that is based on the final approach and replace it with a new one. The new paradigm views waste as a valuable resource that can be used in the manufacturing process to create other products. Energy, compost, fertilizer, and industrial materials are examples of resources that can be generated. Waste management is carried out holistically, beginning before garbage is formed from items that have the potential to make waste and ending downstream, after the product has been used and produces waste that is disposed of into the environment. This is in line with the definition of waste management outlined in Law Number 18 of 2008 and Government Regulation Number 81 of 2012, which includes systematic, comprehensive, and long-term actions such as trash reduction and

management. Garbage management aims to promote public health and environmental quality while also turning waste into a resource. Household garbage can be used to create resources such as fertilizer (liquid) and planting material (compost). Household trash including organic elements will always be present, given that household activities such as cooking and gardening require a lot of organic resources. Making non-organic trash into a resource can be accomplished in a variety of methods, including re-melting waste with certain materials, such as paper, glass, and cans, to create new commodities created from raw materials. However, the trash must be classified according to its composition. As a result, waste management must begin with waste sorting according to waste material.

Sorting, collecting, transporting, processing, and concluding processing will all be part of domestic trash management. The realization of all of these operations necessitates the cooperation of numerous parties and cannot be accomplished on an individual basis. The importance of the community as a whole and accomplishing things together is crucial. By including the community in the management of household garbage, the goal of enhancing health and environmental quality will be achieved. This is due to the fact that the community generates its own garbage. The importance of community awareness in trash management is critical because community participation in household waste management will begin with community awareness.

Several factors influence the implementation of community waste management, according to Riswan, et al. (2011), based on the results of research in Daha Selatan Subdistrict, South Hulu Sungai Regency, South Kalimantan, including education level, income level, behavior toward environmental cleanliness, knowledge of waste regulations, and willingness to pay waste restitution. According to Maskey and Mrinila, (2017), household income, the head of the family's education, environmental consciousness, and garbage collection facilities all influence the extent of the willingness to pay the public for waste management.

One of the most significant generators of economic growth is the tourism industry. It is demonstrated by the fact that international tourism generated USD 1.7 trillion in export earnings in 2018. After the chemical and fuel industries, but ahead of the food and automotive industries, it may be argued that international tourism is one of the top five economic sectors in the world (UNWTO, 2019). As a result, the tourism industry encompasses a wide range of enterprises in order to service local and foreign visitors for a variety of goals ranging from business to leisure. Accommodation and transportation are among the supporting industries, as are food and beverage, retail and culture, and sports and recreation. As a result, the true benefits for all countries, particularly local people, are the potential for workforce and entrepreneurship development (WTTC, 2017).

Tourism studies have been increasingly popular in recent years as the tourism sector has brought greater benefits to nations. Despite numerous experts' studies on tourist themes, they lacked an explanation of the industry's fundamental qualities. Most studies examine tourism performance directly, such as visitor happiness and loyalty (Gnanapala, 2015; Chiu, Zeng, and Cheng, 2016; Ying, Jusoh, and Khalifah, 2016), which leads to the formation of competitive advantage (CAC) (Liang, 2008; Sheth, 2001).

The platform of Jababeka Smart Township Super Apps gives a piece of information about solid waste management in residential and out-of-residential and tourism development in the Jababeka area. Table 1 showed all applications made by the contestant in Hackathon.

Table 1. The list of all Applications from Hackathon 2021

No	Theme	Function
1	News	Applications for residents to see news by category or important announcements for residents in the Jababeka area
2	Event	Applications for residents to view, search, and register for events in the Jababeka area
3	Public Facilities	An application for residents in the Jababeka area and its surroundings to view schedules and make reservations/reservations using golf, swimming pool, tennis, etc.
4	Public Transportation	Application to view public bus schedules (damri, primajasa, etc.), bus position (by GPS), and booking/reservation
5	Housing	Application for residence seekers to find new homes or rentals in the Jababeka Residence area based on user specifications. Applications are also used for homeowners to rent out their homes.
6	Telemedicine	An application for residents in the Jababeka area to find the nearest health service location and also view service schedules. Users can also do online health consultations
7	Industrial	An application for potential investors to view industrial map locations in the Jababeka area. Users can also view logistics/supply chain paths
8	Lifestyle	Applications for residents, especially students or college students to search for products
9	Education	Applications for residents, especially kindergarten and elementary school students to be able to access independent learning. This application can also be used by providers of learning materials to share with the public
10	Waste Bank	Applications for residents to get information about Waste Banks and waste processing technology
11	Panic Button	Applications for citizens to provide emergency reports instantly / in real-time
12	Crowd Funding	Application for citizens to make donations and track the distribution of donations
13	Tourism	An application for Jababekak residents to book rooms, promotional info, and other info related to tourist destinations in Cikarang, Tanjung Lesung, and Morotai.
14	Payment	Application for residents in Jababeka to check water bills and environmental bills. Residents can also pay by transfer
15	Feedback and Report	Application for Jababeka residents to file complaints or reports.
16	Seni Budaya	Applications for Jababeka residents as well as visitors to find out about art and cultural attractions scattered in Bekasi Regency, especially in Jababeka, Morotai, Tanjung Lesung

From Table 1, there is 1 application about waste and 1 application about tourism, which means still have an opportunity to improve this platform with more applications about waste and tourism.

Conclusions and Recommendations

The Jababeka Smart Township Super Apps is a platform that could improve the quality of life of society through the application. Society could participate in making the application

and could accommodate the need of society. The solid waste management application and the tourism development application already showed in this platform but could improve and make complete.

Acknowledgments

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