Virtual Collaborative Community to Increase the Participation of Purworejo's Diaspora to Realizing Purworejo Smart City

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ABSTRACT

Community member is an important part of realizing the development of a region. Purworejo is included in the 100 smart city plan and is preparing innovations to go to Purworejo smart city. The potential of the Purworejo community outside Purworejo is very large. Many Purworejo people who migrate outside the region hold important positions in their respective fields. The platform to be developed is the Virtual Collaborative Community so that the Purworejo diaspora can actively participate in the development of smart cities in Purworejo. Virtual Collaborative Community is an online platform to facilitate the Purworejo community and the Purworejo Diaspora to collaborate. Based on the results of the discussion and planning of minimum features in the virtual collaborative community, at least 5 main features are obtained. These features are member features, group features, forum features, event features, and knowledge sharing. The member feature allows all communities and diaspora to register as members on the platform. The group feature allows members to join groups according to their respective interests. The forum feature allows members to discuss based on certain topics. The Event feature allows members to hold events either virtually or which will be planned offline. And the knowledge sharing feature allows the exchange of knowledge between members.

Keywords: *Virtual Collaborative Community; Diaspora; Purworejo Smart City*

1. INTRODUCTION

A smart city is an innovative city that uses information and communication technology (ICT) and other means to improve quality of life, the efficiency of urban operations and services, and competitiveness, while ensuring that it meets the needs of present and future generations with respect. on economic, social, and environmental aspects [1]. So, the main goal of developing a smart city is to improve the quality of life of its people. In other words, the development of a smart city must be based on the needs of the city and the people in it.

The dimensions of the smart city are divided into 11 areas [2]. These dimensions include smart economy, smart governance, smart people, smart environment, smart infrastructure, smart technology, smart living, smart mobility, smart water and waste, smart security, and smart agriculture. The adoption of these dimensions to suit the needs that exist in Indonesia is summarized in 6 dimensions. The dimensions of the smart city are summarized in a framework known as the Smart Sustainable City Framework (SSCF). In SSCF, the dimensions of a smart city include smart mobility, smart governance, smart environment, smart living, smart people, and smart economy [3]. In the Garuda Smart City Model (GSCM) framework, these dimensions are only divided into 3 service domains, namely smart economy, smart environment, and smart society [4]. The Garuda Smart City Model is shown as in Figure 1 (obtained from Firman Anindra and reprinted with permission). Smart society is an important part of the development of smart cities, even in GSCM, it becomes a priority service domain.

Smart Society or in other development frameworks referred to as smart people, is a very important component to pay attention to. Society plays an important role because the main goal of smart city development is the quality of life of the people [1]. Smart society is defined as one of the successes in utilizing the potential of digital technology and connected devices as well as the use of digital networks to improve people's lives [5]. Smart societies harness the power and potential of technology to make people more productive, to enable us to focus our resources on the activities and relationships that matter, and ultimately to improve health, well-being,

and quality of life. Therefore, the role of society is very important in developing the realization of a smart city.

Purworejo is one of the districts included in the national program of the 100 smart city programs. The national program was promoted by the Ministry of Communication and Information of the Republic of Indonesia. This makes Purworejo must be able to maximize its resources to realize the creation of Purworejo Smart City.
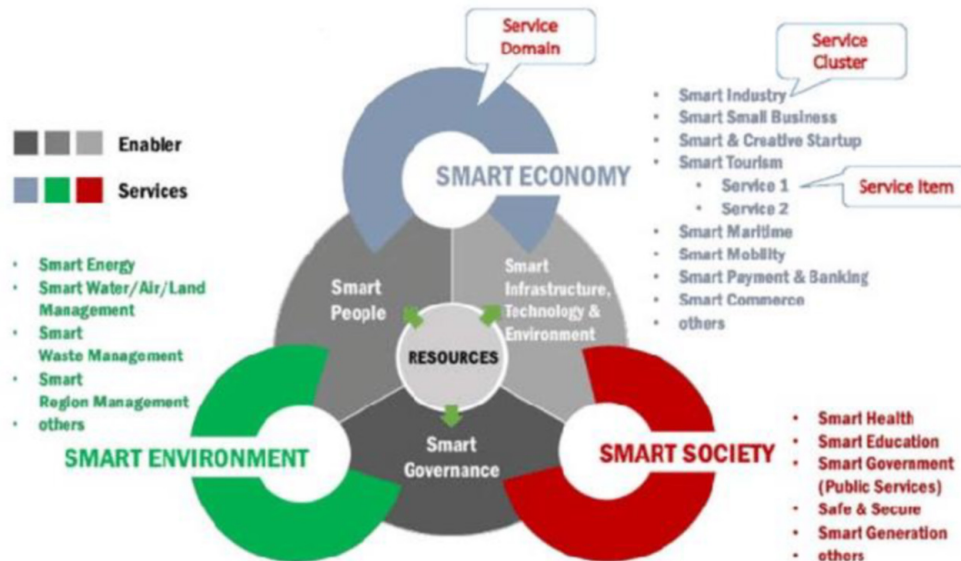

Figure 1 Garuda Smart City Model 2.0

One of the strengths of Purworejo's resources is the large number of indigenous Purworejo people who become diaspora. The Purworejo Diaspora has very strong solidarity. These diasporas have unity through the *Cah Perantauan* Purworejo (CPP). Currently, the Purworejo diaspora administrator has been officially inaugurated by the Regent of Purworejo [6]. The potential of the Purworejo diaspora can be utilized by making the diaspora a collaborator for the local government in realizing the Purworejo Smart City. Diaspora experiences gained overseas can be input for city development.

From the potential of the diaspora and the desire of the Purworejo district towards a smart city, there is a need for media to collaborate. Due to the limited distance and time between the diaspora and the government in communicating and collaborating, a more flexible collaboration media is needed. Therefore, this study proposes a virtual collaboration system design that can be used as a medium to work together and exchange knowledge.

The proposed information system is a virtual collaborative community that aims to increase the active participation of the Purworejo diaspora to contribute towards the Purworejo Smart City. The virtual collaborative community will bring together all Purworejo residents, both those currently in Purworejo and residents who are diaspora. This makes this system not only a medium of communication but also a virtual gathering place. In this virtual media, there will also be an exchange of information and the exchange of knowledge through knowledge sharing between citizens. Virtual collaborative community allows the community to create preferred commutation groups so that they can improve skills and exchange related to the same interests.

In this study, we will describe what needs are needed in a virtual collaboration system. And how these needs can be accommodated through the features that will be provided in the virtual collaborative community.

2. METHOD

The method used in this study is a discussion with Regional Apparatus Organizations (OPD) related to the Smart Society Dimension, identifying the needs of the virtual collaborative community, and formulating the minimum features that must exist in the virtual collaborative community.

2.1. Discussion on the Dimensions of Smart Society

The development of a virtual collaborative community begins with a discussion with the team who are members of the Dimension Smart City discussion group. This group consists of related OPD, namely Department of Communication and Information Technology, Department of Youth and Sports Education, Department of Archives and Libraries, Department of Ministry of Industry, Department of Transmigration and Manpower, Department of Social, *Polisi Pamong Praja*

(Municipal Police) and from academics, namely the University of Muhammadiyah Purworejo. Broadly speaking, this group discusses the sub-dimensions of smart society, namely community interaction, learning/education ecosystem, and community security. The smart society dimension group discussion activity is shown in Figure 2.

Figure 2 Discussion with the Smart Society Dimensions

2.2. *Feature Requirements Identification*

In the discussion with the Smart Society Dimension discussion group, try to identify what feature needs are needed in the virtual collaborative community system that will be developed. The purpose of identifying this feature is that the features that will be designed are by the needs that are needed by users, namely the Purworejo diaspora and the public.

2.3. *Feature Requirements Design*

The results of the discussions carried out in the smart society dimension group and literature studies became the basis for designing the feature requirements that needed to be in the virtual collaborative community system. This design already displays the form of real features that exist in the system.

3. RESULT AND DISCUSSION

3.1. *Result of System Requirements Discussion*

Discussion of system requirements aims to identify existing problems and solutions to needs and what features are needed in the information system to be developed. Based on the discussion on identifying feature needs with the smart society dimension team, it can be seen in Table 1.

Table 1 Requirements for features in the system

Problem	System Requirements
Need a flexible information system	An online system that can be accessed flexibly anywhere and anytime.
Need a system that can accommodate the needs of all stakeholders	Can be accessed and used by all stakeholders which can support the creation of good collaboration.
Some communities are still independent and use different platforms	Allows all communities to create groups for each community and can see the activities of other communities and all groups are on the same platform.
People find it difficult to share information between communities because they use different platforms	Any information on events, activities, and additional knowledge will be notified through notifications or information pop-ups.
Need a platform that allows everyone to share new knowledge	Knowledge sharing provided for all members and can be accessed freely and interactively for everyone
The current platform allows to create of events but those who can participate are limited due to limited information dissemination	A virtual collaboration system that was developed that allows wide-open information and all events held by a community, event information can be known by all members in the system so that all can participate.
Because the communities are on different platforms and sometimes it is difficult to detect which groups are official, so it is	The virtual collaborative community is managed by the local government so that it is on one official platform. Therefore, all data

Problem	System Requirements
difficult for the government to get input or other information.	and information, as well as input, can be used as input for the development of the Purworejo area.
Ways to increase engagement so that users want to keep interacting in the developed system.	One that can be used as a solution so that users want to use the system is if the system has benefits. In the system that will be developed, there are facilities to create paid events and can be monetized. For future development, it will continue to feature buying and selling forums between members or members in the system.

3.2. System Feature Design

Based on the results of the discussion in the smart society dimension group, information on problems and solutions was obtained. The results of the discussion are used as a reference for designing features that can be realized in the Virtual Collaborative Community system. The design is described in the following features. To make it more local and easier to remember, this system was given the name Silaturhami Purworejo.

3.2.1. Member Features

The member feature allows all stakeholders to join as members of this system. All elements must be incorporated both from the government, academia, business, people, and the community both in Purworejo and as a diaspora. The member display is shown in Figure 3.
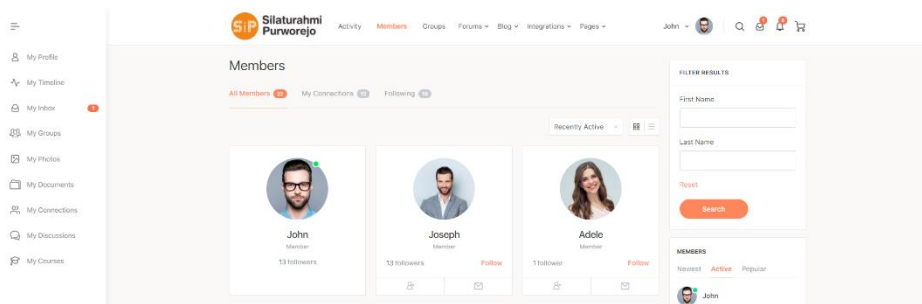

Figure 3 Member Features in Silaturahmi Purworejo.

3.2.2. Group Features

The Group feature allows all members who have the same hobbies and interests to join the Group. This feature allows collaboration between members to exchange information and hold joint events. All verified members have access rights to create a group. Verified members have the right to comment in the group and reply to comments in the group. The group display can be seen in Figure 4.
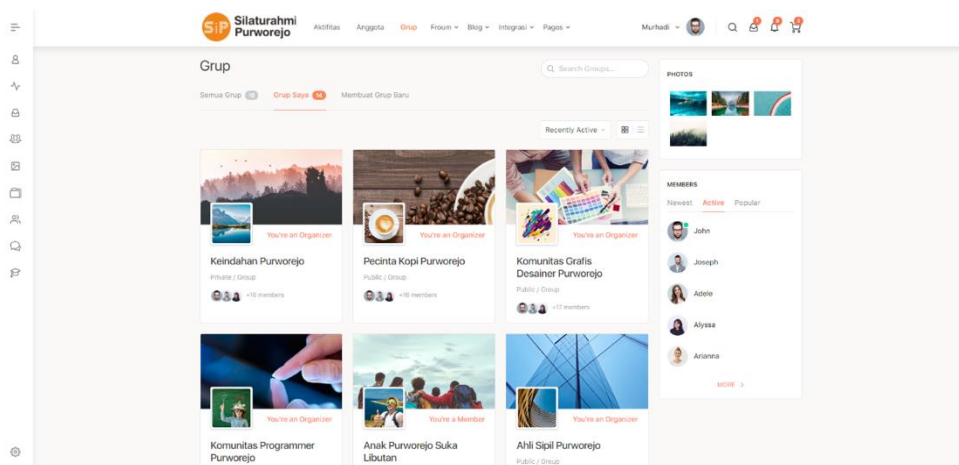

Figure 4 Group Features in Silaturahmi Purworejo.

3.2.3. Forum Features

As a place for collaboration, the Purworejo Gathering system allows all members to discuss everything. Whether related to Purworejo or other general matters. Members who can create new forums, leave comments, and reply to comments are already verified. The forum display can be seen in Figure 5.

Figure 5 Forum Features in Silaturahmi Purworejo.

3.2.4. Event Features

The event feature is the main attraction because it can be a place to strengthen friendship and collaboration. Events may be held by one community or can collaborate with other related communities. Events are also possible to be held offline or online. In addition, events can also be paid or free. By providing these paid features it allows events to be carried out professionally and can generate income. The event display can be seen in Figure 6.
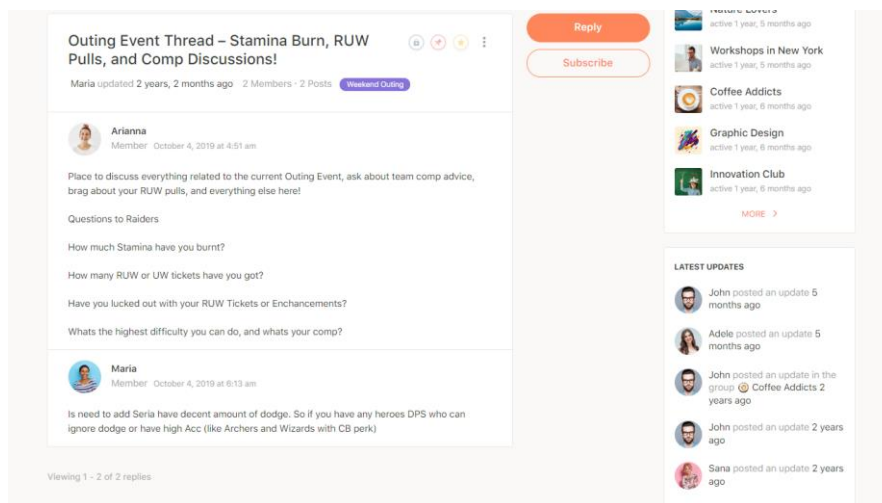
Figure 6 Event Features in Silaturahmi Purworejo.

3.2.5. Knowledge Sharing Features

The collaboration feature planned in this virtual collaborative community is not only a medium for discussion forums and events but is designed to be a medium for sharing knowledge. This feature allows members to create a course that can be used as a place to share knowledge and new knowledge. This course feature can also be developed in the future to provide paid knowledge sharing media for knowledge that is specific and requires great effort in its development. The display of sharing knowledge can be seen in Figure 7.
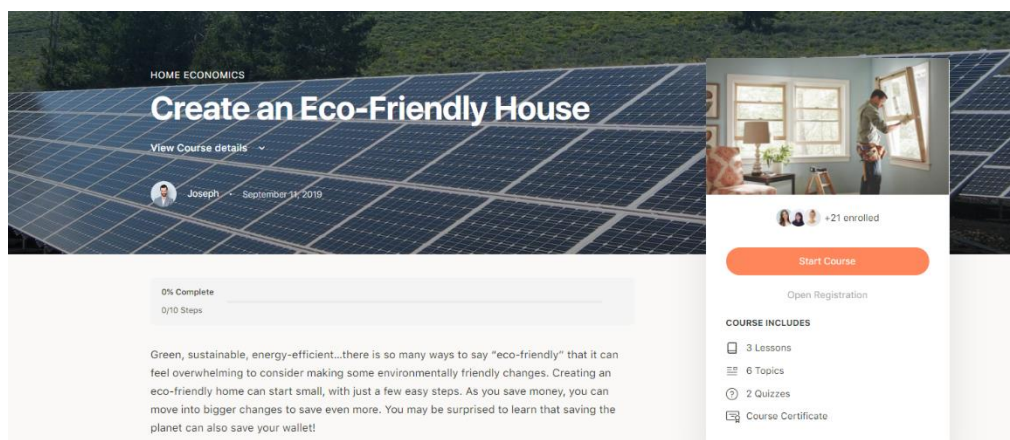

Figure 7 Sharing Knowledge Features in *Silaturahmi Purworejo*.

3.3. Discussion

Research conducted by Crook suggests that 72% of respondents agree that social media can be used as a powerful medium in regulating social action. As many as 40% of respondents stated that social media contributed to strengthening democracy [7]. The hope is that by involving the residents of Purworejo getting together, even though virtually it will encourage social action to jointly advance Purworejo. Democratically, social media will increase public awareness of the importance of collaboration in the development of Purworejo district

Virtual Collaborative Community is an online platform to facilitate the Purworejo community and the Purworejo Diaspora to collaborate. This platform allows the Purworejo diaspora to be able to directly contribute to supporting Purworejo Regency towards Purworejo's smart city. This virtual collaborative community solution was initiated by a joint discussion in the Smart Society Dimension group. In this discussion, one of them is to formulate problems related to the obstacles of collaboration between the community and the government. Including collaboration with the Purworejo Diaspora which was hampered due to communication problems. So that with this platform it is possible for all parties to make a real contribution to the development of the Purworejo Regency.

The study of the problem of the need for a flexible information system, which can be accessed from anywhere and anytime, was overcome by the existence of an online and real-time platform developed. With this form, Purworejo residents can contribute directly wherever they are and become a solution for the Purworejo diaspora to communicate.

This system also makes it easy for all stakeholders to communicate, work together and discuss so that they can provide direct input. If you use a platform such as social media, the government does not directly get input or information because the information is separate and exists on various platforms. The existence of this media allows the government to get information more easily and faster.

Based on the results of the discussion and planning of minimum features in the virtual collaborative community, at least 5 main features are obtained. These features are member features, group features, forum features, event features, and knowledge sharing. The member feature allows all communities and diaspora to register as members on the platform. The group feature allows members to join groups according to their respective interests. The forum feature allows members to discuss based on certain topics. The Event feature allows members to hold events either virtually or which will be planned offline. The knowledge sharing feature allows the exchange of knowledge between members.

4. CONCLUSION

Virtual Collaborative Community is an online platform to facilitate the Purworejo community and the Purworejo Diaspora to collaborate. Based on the results of the discussion and planning of minimum features in the virtual collaborative community, at least 5 main features are obtained. These features are member features, group features, forum features, event features, and knowledge sharing.

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