Design and development of information technology-based e-participatory application in participative development planning

Nunu Nugraha*, Dadan Nugraha, Dadang Hamdani, Roni Nursyamsu, and Jerry Donald Rahajana

Computer Sciences Faculty, Universitas Kuningan, Kuningan, Indonesia

*nunu.nugraha@uniku.ac.id

Abstract. The application of information technology is a supporting instrument in the administrative process as well as the provision of useful information for all groups to improve performance, one of which is in government. Governments around the world are currently facing "pressure" from various parties to improve the quality of public services and to increase active participation in providing information for the public and it is demanded to be more effective. E-Government can expand public participation where people are allowed to be actively involved in decision-making and policies held by the government. Kuningan District is one of the sub-districts in Kuningan Regency, the obstacle that arise related to community participatory development planning is that there are still many proposals from the sub-district that the Kuningan Regency government has not approved. It needs a means to monitor the progress of its implementation, including the use of information technology to accommodate development planning proposals based on participatory and active roles of the community in the form of e-Participatory application design. This research uses Waterfall system method as system development method. The programming language used in the system is PHP programming language and its database management uses SQL. By implementing the e-Participative application, the Kuningan district government can accommodate suggestions from each village in the Kuningan district area. Besides, this research can be a material consideration for Kuningan District to synergize policies and regulations through strategic plans and development planning proposals in the Kuningan sub-district based on effective and efficient community participation.

1. Introduction

The application of information technology is a supporting instrument in the administrative process as well as the provision of useful information for all groups to improve government performance so that it is following predetermined goals. This is to ensure the use of information technology that can truly support the objectives of governance while at the same time it is taking into account the efficient use of resources and risk management which becomes the basis for information technology governance. Electronic government is the use of Information and Communication Technology in government transformation; primarily aimed for increasing accessibility, effectiveness, and responsibility. This is based on information dissemination and information policy developments [2].

Electronic participation (E-Participation) has a positive impact on participants' trust in influencing government decision making and their assessment of government transparency. There is a positive
relationship between the electronic participant's assessment of government transparency and their trust in local governments that provide e-participation programs. [3]. The use of cellular technology is used as an instrument in embedding cellular technology as part of the e-participation strategy [4]. Governments around the world are currently facing "pressure" from various parties to improve the quality of public services and increase active participation in providing information for the public and is demanded to be more effective. This causes e-Government or electronic-based government to play an increasingly important role for all decision-makers. Traditional government which is synonymous with paper-based administration is starting to be abandoned. The transformation of traditional government into electronic government (e-Government) has become one of the hotly discussed public policy issues today.

In Indonesia, e-Government has just started with an initiative launched a few years ago. Definition and objectives of e-Government and provide examples of best practices/rules or best practices that have been carried out by countries in Europe are quite advanced in implementing e-Government. The challenges and steps that the government must take in the era of globalization will be the conclusion of this paper. Based on the definition of the World Bank, e-Government is the use of information technology by the government (such as Wide Area Network, Internet, and mobile computing) which allows the government to transform relations with the public, business world, and other interested parties (www.worldbank.org). In practice, e-Government is the use of the Internet to carry out government affairs and the provision of public services in a better and service-oriented manner.

In brief, the goal to be achieved by implementing e-Government is to create online customers and not in-line. e-Government aims to provide services without the intervention of public institution employees just to get a simple service. In addition, e-Government also aims to support good governance. The use of technology that makes it easier for the public to access information can reduce corruption by increasing the transparency and accountability of public institutions. e-Government can expand public participation where the public is allowed to be actively involved in decision/policy making by the government. e-Government is also expected to improve the productivity and efficiency of the bureaucracy and increase economic growth. The concept of e-Government is to create friendly, comfortable, transparent, and inexpensive interactions between government and society (G2C-government to citizens), government and business enterprises (G2B-government to business enterprises), and inter-governmental relations (G2G-inter-agency relationship).

E-Government initiatives in Indonesia have been introduced through Presidential Instruction No. 6/2001 date. 24 April 2001 concerning Telematics (Telecommunications, Media, and Informatics) which states that government officials have to use telematics technology to support good governance and accelerate the democratic process. Furthermore, e-Government must be introduced for different purposes in government offices. Public administration is one area where the internet can be used to provide access for all people in the form of basic services and simplify the relationship between the community and the government. One of them is in Kuningan Regency which is currently improving facilities to increase the efficiency and effectiveness of governance as well as the accessibility of information and services to the public. e-Government implemented in the Kuningan district government can help improving operational efficiency and costs in the implementation of both administrative and technical activities. Improving public services make them more efficient; comfortable; and minimal costs in accessing information and services in the Kuningan district government.

2. Methodology
In this research, the system development method used is the waterfall system development method, this method is a simple classical method with a linear system flow. This method is a method often used by system analyzers in general. The essence of the waterfall method is that the work of a system is carried out sequentially or linearly. So, if step 1 has not been done, then you will not be able to carry out steps 2,3 and so on. Automatically stage 3 will be carried out if stage 1 and stage 2 have been carried out.
2.1 E-Participative

In city management, the way of people participation is transformed. Marres (2017) states that currently, narratives about openness, inclusion, and collaboration take various forms in a digital society. However, the spirit of this idea is that society experiences a shift from just being an audience to being actively participating (from the audience to participation). This development is, of course, very much influenced by the level of technological development, especially ICTs. In this case, technology has become a mediator for participation in the digital era. Technology itself refers to changes in the quality of life that are produced or changes in the character of social life resulting from technological activities. According to Ellul (1980), technology is an individual's ability to manipulate various existing tools for improvement. In this case, technology is not an object but it is an ability.

Participation (public) itself is closely related to how the democratic process is carried out. This means that participation is a component of democracy. Meanwhile, a smart city is only a means for society and the government to carry out participatory democracy. Participatory democracy is a decision-making by involving community participation in various fields, including politics, economics, and social. It provides a forum for the exchange of ideas and priorities, an assessment of public interest in dynamics, and the acceptance of planning proposals. Community participation or active involvement of local communities in planning, decision-making, or implementation of development projects for the community are needed in the process of development.

Participatory democracy, where the community is involved in the decision-making process includes in the development planning stages at various levels. Thus, it is hoped that a sense of belonging and a sense of shared responsibility of whole community for the development in their area is expected. There are several basic principles of participatory democracy which can be described as follows. 1) The invitation to participate is socialized, 2) The objectives of participatory democracy are always described as clearly as possible at an early stage. 3) Access to all documents and various related information which are the agenda for development discussions and management must be open in a transparent manner. 4) All parties have a function as decision-makers. 5) Every party with an interest in development management has to have equal rights to channel their aspirations at the level of the decision making process. 6) Every aspiration has to be considered without any discrimination against
the source of the aspiration. 7) Adequate funding for a participatory process must be mutually agreed upon, made available, and published. 8) Professional facilitators are needed in the decision making process. 9) The final agreement of the resulting policy must be understandable and its reasons. 10) The process of participation in policy-making must be evaluated periodically (Indratno, et al, 2012).

Data Collection Techniques:

a. Interview
   The interview is a technique of collecting data by conducting direct questions and answers to the parties involved following their respective positions and responsibilities.

b. Organizational Document Study
   This process is carried out by reviewing the history of the organization as an object to be studied. The review is carried out through extracting physical documents, as well as interviews with Kuningan District officials who already had long enough experience to be part of the organization and understand the current business processes.

c. Literature Study
   The literature study is a data collection technique using literature that can be used, such as by utilizing Internet facilities, also by using books as reference material in finding and obtaining the information needed.

3. Result and Discussion
Web-Based e-Participatory Application Design (Case Study in Kuningan District) is an information system that supports the Kuningan District government in accommodating the aspirations of the Kuningan district community. Apart from that, it serves as a means of monitoring the progress of its implementation, which includes the use of information technology to accommodate development planning proposals based on participatory and active roles of the community.

![Figure 3. Mechanism E-Planning](image)

The Kuningan District E-Planning Mechanism refers to the E-Planning Mechanism that has been established based on central government regulations. Figure 4 shows the mechanism / flow that runs in the e-planning system starting from the sub-district, sub-district, SKPD forum, to the city development planning meeting. For e-Participative application design in Kuningan District, it can be seen in Figure 5.

![Figure 4. Participatory Development Planning Mechanism](image)

3.1 System Implementation
The main page displays when the user logs in. For the menu or existing facilities, that is in accordance with the access rights of each user. The front page of the Kuningan District e-Participative application will appear as follows:

![Main page display e-participative application and menu page create user](image)

**Figure 5.** Main page display e-participative application and menu page create user

The home page of the e-Participative application displays four main menus, namely Discussion, Proposals, Voting, Participatory Budgeting and Assistance. The four menus can be used by logged-in users.

### 3.2 Account Registration page

Users of the e-Participative application are people in Kuningan District who have registered with the system / already have a verified account. To use the features of the e-Participative application, the public must log in first. Enter the username or email and Password, after the Username/email and Password are entered correctly, click the Login button. There are several features in the e-participatory application including discussions, proposals, voting, budgeting, assistance. The discussion menu is a menu that can be used by the community to discuss and provide input/suggestions, ideas, ideas to the government regarding the Kuningan District development plan. Based on the categories desired by the community and it can directly discuss by filling out the form to provide comments regarding the proposed programs/proposals from the community that has entered the system. All registered residents have the opportunity to provide support or not to support the program implementation by clicking the Like / Dislike icon.

![Features of the e-Participative application](image)

**Figure 6.** Features of the e-Participative application

![Menu proposal of the e-participative application](image)

**Figure 7.** Menu proposal of the e-participative application
The proposal menu is one menu that can be used by the community to submit development or improvement proposals based on community needs. Proposals are grouped into four categories, namely social, economic, infrastructure, and government. The voting menu is a menu that can be used by the public to see the results and the community's response to support or not support those contained in the proposal menu and discussion menu. The Participatory Budgeting Menu is a menu that can be used by the community to see the progress of proposals from the time the proposal is submitted until it is approved by the district government.

By the central government regulation issued again in the form of a regional regulation made by the Kuningan district government, the smooth running of the government is closely related to the support of an adequate information system. This is important to be able to meet the expectations of various parties, especially in data and information services, in line with this view, the Kuningan regency government needs to immediately prepare improvements to the information system and network equipment that must be done, besides that it is also necessary to develop a data processing system on the network system. should be done.

Following Law no. 25 (twenty-five) of 2004 concerning the National Development Planning System. Kuningan district government is obliged to plan development programs as outlined in the Regional Development Work Plan document. Based on this function, the development of participatory development planning based on the analysis of the factors that influence the participatory planning process and the need for information that can serve information needs properly is urgently needed by the people of Kuningan regency. Delivering data and information from the Kuningan district government to parties and the wider community is also an effort to realize the implementation of Law no. 14 of 2008 concerning Openness of Public Information.

Beside it, Presidential Instruction No. 1 of 2010 concerning the Acceleration of Implementation of National Development Priorities has assigned the Kuningan district government to accelerate the implementation of 32 (thirty-two) Action Plans for the Acceleration of Infrastructure Development which have received priority from the President.

The Kuningan district government has made an application or program related to regional development planning, namely e-development Planning Forum (e-Musrenbang). However, the utilization of this application has not been maximized, it is only limited to the district level. Not all suggestions from each RT / RW, village, and sub-district are accommodated in the district because there is a selection process at each stage of the government level.

4. Conclusion
The e-Participative application has been made to accommodate the aspirations of the Kuningan District community. The implementation of e-Participation in Kuningan District has existed and is expected to be successful, especially in the indicators of smart governance related to citizen participation in decision making, a government system that is transparent, effective, efficient, and accountable according to its objectives. One of the ways to achieve this is through the use of internet technology, especially ICTs. e-Participation has also increased development participation by
transforming the traditional way of participation into e-participation. Through e-participation, cross-agency work and coordination mechanisms are simplified.

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