

Overview of smart governance: A new approach to Jambi city policy innovation

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Abstract

The concept of the smart city established as a solution of the urban complex problem. The goal of the smart city concept is modern urban management using technical tools that offer state-of-the-art technologies, considering the applicable ecological standards while saving resources and achieving the expected results. In line with this, the government needs to build integrated information, communication and technology services. Therefore, the government has legalized a regulation relating to smart city policy. In 2019, Indonesia introduce The Movement Towards 100 Smart Cities as the joint programs implemented by Ministry of Communication and Information, Ministry of Home Affairs, Ministry of Public Works & Housing, National Development Planning Agency and the Presidential Staff Office. The program aims to guide districts / cities in formulating Smart City master plans in order to further maximize the use of technology through digital transformation, both in improving community services and accelerating the potential resources that exists in each local government. Governments need to step up their efforts to fulfil the basic infrastructure needs of citizens, raise more revenue, construct clear regulatory frameworks to mitigate the technological risks involved, develop human capital, ensure digital inclusivity, and promote environmental sustainability. This article use qualitative with descriptive approach to examines the state of smart city development in Indonesian local government especially in the aspect of smart governance that have been implemented through 2017-2020, which includes understanding the conceptualisations, motivations, and unique drivers behind (and barriers to) smart city implementation, which so far contributed to the development of 50 innovation-based applications in the City of Jambi.

Keywords: *Smart governance, public services, digital transformation.*

1. Introduction

The rapid development of today's development, should be faced by preparing various strategies to deal with it, especially in the era of the 4.0 industrial revolution

characterized by increased connectivity, interaction, and modernization of technology and information that is able to change various aspects in human life. The 4.0 industry revolution gives the opportunity to mastery technology as the key to determining national competitiveness. Therefore, mastering technologies such as the *internet of thing*, *artificial intelligence*, *human-machine interfaces*, robotic and sensory technology, and 3D technology will sustain development in the era of the 4.0 industrial revolution.

In accordance with the era of the 4.0 Industrial Revolution, the government needs to build an integrated information and communication technology based service (*e-government*). With the integrated system of the community will feel the impact and benefits of the advancement of Information technology and communication where the service becomes easy, fast, inexpensive, and quality such as facilities in the management of correspondence and licensing, ease in public complaints, transparency in public services, adequate transportation means, and so forth.

The form of the program implemented by the Government through the Ministry of Communication and Informatics, Ministry of Interior, Ministry of PUPR, Bappenas and presidential staff office is the movement to 100 Smart City (hereinafter abbreviated to SC) which is a joint program of the Ministry. This Program aims to invite Kab/Kota can to plan the Master Plan SC in order to further improve the use of technology, both in improving service to the community and accommodating the potential contained in each region (www.kominfo.go.id).

Smart City is an application of the *internet of things (IoT)*. The role of the Internet to realize the concept of SC is so important to support the delivery of information and perform the action through the network with minimal human intervention, so as to perform various functions automatically. With the *Internet of thing* in the SC program will unite the community in a fast and precise service.

To overcome the problems faced by the community. Through the concept of smart city, make the government's auth can be more instant, and give impact to the community. The first step, smart city construction was prioritized in 24 cities with a benchmark of budget availability. The district/city is as follows:

Table 1. District/City Movement Program 100 Smart City in Indonesia

No	District	No	City
1	Banyuwangi	1	Tomohon
2	Lombok Timur	2	Sukabumi
3	Badung	3	Samarinda
4	Sleman	4	Bandung
5	Banyuasin	5	Semarang
6	Bojonegoro	6	Tangerang
7	Gresik	7	Bekasi
8	Sidoarjo	8	Bogor
9	Mimika	9	Cirebon
10	Kutai Kertanegara	10	Pelalawan
11	Siak	11	Makasar
		12	Tangerang Selatan
		13	Jambi

Source: www.kominfo.go.id, 2020

Jambi City is one of the cities that continues to develop the smart City program in every aspect of community life. The basic concept of development is efficiency in budgeting to provide effective public services, making it easier for people to obtain services using information technology. However, in its application each city has different problems including the city of Jambi, such as inadequate supporting infrastructure, the readiness of local government, one of them in terms of budget, and the community that stutters technology.

Smart City in Jambi has started since 2014 then. In the implementation, there are still constraints such as human resources limitation because not all regional device organizations have experts in the IT field. Another obstacle is the city of Jambi faced with considerable challenges such as a high population increase, less reliable transportation, as well as infrastructure that has not supported, the quality of public service that has not been in accordance with the expectations of society and the number of practice Pungli, and most importantly the challenge to the limited financial resources become a problem in order to realize the program Smart City (Smart City) in City Jambi. Based on the phenomenon that has been outlined, researchers are interested to study in more depth about this smart city program in a study titled "Review of Smart City Program implementation" in Jambi city in the Era of Industrial Revolution 4.0.

2. Theoretical framework

There are various definitions of Smart City. Smart City is basically a city management concept by combining all strengths in terms of human resources, natural resources, infrastructure and government by optimizing Information Technology, so that the city is able to make its citizens independent, participatory, comfortable and prosperous. This meaning has been stated by several researchers that a Smart City is a city that is able to manage all its resources to improve the quality of life of its citizens [3] [4] [5] [6] [2]. Giffinger, et al stated that Smart City is a city that has a good performance / appearance that has a forward way from the aspects of the economy, society, government, mobility, environment and life, all of which are built because of good cooperation and are determined by independent citizens. and high awareness [3]. Meijer also stated that Smart City is a city that invests human and social capital and infrastructure, both traditional and modern, to promote sustainable economic growth and improve the quality of life, through the management of natural resources wisely and participatory [3].

Some researchers say that Smart City has certain characteristics, but in general Smart City has the characteristics of Smart Economy, Smart People, Smart Governance, Smart Mobility, Smart Environment, Smart Living [3] [1] [8] [7]. However, it can be seen clearly that several research sources emphasize that one of the characteristics of a Smart City is Smart Governance, which will be an important focus in this research. Christian and Roscia added in their research the indicators of each characteristic of Smart City, where, for example, Smart Governance has indicators: Participation in decision-making, public and social services, Transparent Governance, political strategies and perspectives [1].

Table 2. Smart City Indicators According to Cristian and Roscia [1]

CHARACTERISTICS	INDICATORS
Smart Economy	Innovative Spirit
	Entrepreneurship
	Economic Image and Trademarks
	Productivity
	Flexibility of labor market
	International embeddedness
Smart Mobility	Ability to transform
	Local accessibiity
	(inter)national Accessibility
	Availability of ICT-Infrastructure
Smart Environment	Sustainable, innovative and safe transport systems
	Attractiveness of natural conditions
	Pollution
	environment protection
Smart People	sustainable resource management
	Level of qualification
	Affinity to lifelong learning
	Social and ethnic plurality
	Flecibility
	Creativity
	Cosmopolitanism/Open-mindedness
Smart Living	Participation in public life
	Cultural facilities
	Health conditions
	Individual safety
	Housing quality
	Education facilities
Smart Governance	Touristic attractiveness
	Participation in decision-making
	Public and social services
	Transparent governance
	Political strategies and perspectives

Source: Cristian and Roscia, 2012

3. Research methods

The study uses a descriptive method with a qualitative approach. With this method the researcher seeks to describe the implementation of Smart City program in Jambi City in the revolution of the 4.0 industry by sampling as a research informant is the institution and apparatus involved in the implementation of the smart city program, namely the Office of Communication and Informatics City of Jambi which is located at Jln. Jend. Basuki Rahmat No. 1 Kota Baru Jambi – Indonesia 36128. Data is collected through observation activities, interviews and documentation. Then the data is analyzed with interactive models which include data reduction, data presentation, and withdrawal of conclusions.

4. Results and discussion

4.1. Implementation of Smart City Program in Jambi City

Jambi City has focused as a smart city, this program is beginning with the preparation of Master Plan Smart City of Jambi City in 2014, together with the element OPD, subdistrict government, government village, head of health centers in the area of Jambi city, as well as board Smart City of Jambi City consisting of all head OPD City Jambi, elements DPRD Jambi city and academics. After the technical guidance of the preparation of Master Plan Smart City Jambi City, the next stage is the implementation of smart city development which began in 2017 and still ongoing until now (2020) under the guidance and mentoring of the Indonesian IT Consultant Association (IKTII).

Service to the community began to be enforced with an IT system connected with all the OPD of Jambi city government. In order to improve the implementation of Smart city, Jambi city government has always coordinated with the head of SKPD to expose problems in the respective institutions that can be solved through technology so as to facilitate in serving the community.

In building and implementing Smart City, Jambi City is the first area in Sumatera has a City Operation Centre that is named Jambi City Operation Centre (JCOC). It is a space control of Jambi city which monitors the activities occurring in the City of Jambi, including having the function of monitoring the traffic by implementing the application of the Traffic Control System (ATCS). In addition to displaying the city information, JCOC also monitors public complaints through the SIUPSET app. To support the implementation of JCOC, almost every intersection in Jambi City already installed CCTV. In addition, from the implementation of the Smart city of Jambi City, is with the electronic traffic Law Enform (E-TLE) or called electronic ticketed. Jambi City is the second region to implement E-TLE in Indonesia after DKI Jakarta.

As proof of the success of the Jambi city government in implementing the Smart City program, the city government of Jambi gained appreciation from the central Government through the Ministry of Information and Communication as one of the 25 pilot areas (pilot project) of Smart City in Indonesia. In addition, the city government of Jambi also gained appreciation from one of the leading national magazines engaged in the IT and telecommunications field, IT Works, which initiated the Event TOP IT & TELCO 2018. The city of Jambi has been able to collect two awards, namely Top Leader on IT Leadership 2018 and Top IT Improvement 2018. In the year 2019, the city of Jambi also managed to get 3 awards at the Expo Smart City 2019 exhibition at Balai Sudirman Jakarta. The form of the award is capability Award and Implementation of Smart city governance in the form of Top Digital Implementation 2019 on City Government Level Star 4, Top Digital Transformation Readiness 2019, and Top Leader on Digital Implementation 2019.

Jambi Mayor Syarif Fasha in the 2020 Top Digital Innovation Award Awarding Ceremony confirmed that :

In implementing smart city, we always consider on the basis of need, to overcome various problems that exist in our city. We solve various problems with innovation, which we then apply in technology. Maybe this is different from other regional concepts that think otherwise (Statement of the Mayor of Jambi, Syarif Fasha in the Top Digital Innovation Award 2020 Awarding Ceremony, <https://jambikota.go.id/new/2020/05/19/it-telco-2020>).

That currently the city of Jambi has indeed transformed as a city that implements the concept of smart city well. Various government activities and public services have been implemented in the form of information technology-based service applications. The concept of smart city of Jambi City is also not separated from the industry 4.0 phase, which demands the utilization of information and communication technology in all aspects of community life, so it can provide benefits and facilitate all public activities.

4.2. New findings that have been applied in order to support the Smart City Program in the city of Jambi

To support the implementation of Smart City program in Jambi City, the city government has launched and has approximately 50 technology innovation applications to support the performance of the Government of Jambi and facilitate the process of service to the community. All these technological innovations can be accessed easily by the community.

The applications include E-TLE, Si upset (Online community complaints Information System), DISHUB Sign On, DISHUB Smart, Si Raja Koja (Information System procurement goods provision of Jambi city), licensing applications, United Nations Info Online, Applications Jambi City (information about the city of Jambi), digitalization archives, Digital clipping applications, and applications PPID (Public Information application). With the various applications of the community services, The Jambi City Government hopes that government services to the public can run effectively and optimally, and can respond to the challenges of the contemporary community to the needs of the service system is fast, integrated, inexpensive and efficient. Even to support Smart city in Jambi City, Jambi city government has built Fiber Optic (Fo) to facilitate and expand the coverage of telecommunication network. Based on smart city dimensions/indicators, as examples of such applications include :

Table 3. Jambi Smart City Applications

No	Smart City Variables	Applications
1	Smart Economy	Sikadd E-Promosi
2	Smart People	Sangkek Aplikasi PPID
3	Smart Government	Sikoja Sikesal Sipaten Sipadek Si Raja Koja
4	Smart Environment	Sippolling
5	Smart Mobility	Transkoja E-Parking E-TLE Dishub Sign On Dishub Smart
6	Smart Living	E-Silola E-Planning Aplikasi Perizinan

Source: Research data, 2020

4.3. Barriers and challenges faced in the implementation of Smart City Program in Jambi City

As one of Smart City, Kota Jambi performs various innovations by building integrated services based on applications in various fields, but in its application there are various obstacles and challenges. The barriers are limited financial resources, therefore one solution is to seek the participation of stakeholders in creating a smart city in Jambi. Other obstacles and challenges are the limitation of human resources in the field of information technology, because not all OPD have experts in IT field.

This was supported by interviews with the head of Jambi City Communication and Information Department, Mr. Nirwan that :

Jambi City has focused itself into a smart city. Service to the community is enforced using IT that is connected with all the OPD of Jambi city government. This is to facilitate service and minimize face-to-front between the officers and the community. However, there are constraints in its implementation, which is the limitation of human resources, because not all OPD have experts in IT field. To overcome that problem, we continue to provide mentoring (Interview with Mr. Drs. Nirwan, ME. Head of Jambi City communication and Information Department).

Other obstacles and challenges are the lack of readiness of the community in utilizing such application-based technologies. Even there are still people who do not know to facilitate the service and absorb the aspirations of the government of Jambi City has a variety of supporting applications. As the result of the interview with Nirwan :

Jambi city government already has dozens of applications, among them there are applications for the development planning of Jambi City, service applications, application of complaints and information (Interview with Mr. Drs. Nirwan, ME. Head of Jambi City communication and Information Department).

This opinion is in line with the direction of the Mayor of Jambi, Syarif Fasha in the 2020 Top Digital Innovation Award Awarding Ceremony which said that:

Innovation is a necessity that must be owned by an area to solve various problems that exist in the area and to bring services to the community. The innovation phase is already underway, and we have entered the technology phase. Technology-driven innovation will be a tremendous force in producing excellent service for the community. Currently, all local governments are competing to make innovations (Statement of the Mayor of Jambi, Syarif Fasha in the Top Digital Innovation Award 2020 Awarding Ceremony, <https://jambikota.go.id/new/2020/05/19/it-telco-2020>).

The opinion as researchers have outlined above. Therefore, Jambi city government is very concerned with the response given by the public to application of such technological innovations as a form of feedback for the government in conducting a improvement to the Smart City Program.

Conclusion

The implementation of Smart City Program in Jambi City has started since the year 2014 is in the order of Master Plan Smart City Jambi City. The implementation of Smart city development began in 2017 and is still ongoing until now (2020) under the guidance and mentoring of the Indonesia IT Consultant Association (IKTII). As proof of the success of the Jambi city government in implementing the Smart City program, the city of Jambi won the Implementation of Smart city governance at Expo Smart City 2019 exhibition at Balai Sudirman Jakarta.

Jambi City is one of 25 cities / regencies in Indonesia chosen by the Ministry of Communication and Information of the Republic of Indonesia, to become a pilot project for implementing smart cities in Indonesia. Various government activities and public services have implemented various information technology-based applications. The Jambi City Government has launched various applications to support the performance of the Jambi City Government and to provide public services. Jambi City is also the first area in the Sumatra region to have an integrated City Operation Center (COC) room, where the city control and monitoring functions are integrated with other control functions, such as the traffic monitoring system (ATCS), monitoring of public complaint services (Application SIKESAL), as well as various other community service functions. Jambi City is also the second city in Indonesia, apart from Jakarta, to implement Electronic Traffic Law Enforcement for the first time through E-TLE (electronic ticket).

In support of the Smart City Program in the city of Jambi, The Jambi city government has launched and has approximately 50 technology innovation applications to facilitate the process of service to the community. All these technological innovations can be accessed easily by the community. However, there are several challenges faced in implementing the Smart City Program in Jambi City is a limited financial resources, limitation of HUMAN resources in information technology, and lack of public readiness to utilize application-based technology.

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