Smart city: is your city ready?

A A Nasution¹, K Erwin¹ and Risanty¹

¹ Universitas Sumatera Utara, Medan - 20155, Indonesia
Email: badinst@usu.ac.id

Abstract. The electronic parking engine is a form of Medan City Representative in terms of Parking Payments. Based on data shows that electronic parking machines have been used in the city of Medan since 2013. Basically users of electronic parking machines are a form of use of information and communication technology in running the government of Medan City. This can provide support for the city of Medan as a smart city. In this case Rudolf Giffinger stated that there are six characteristics to realize a smart city. In this case the electronic parking engine is expected to be able to realize the city of Medan as a smart city, so qualitative research is needed regarding the electronic parking engine in the city of Medan. The problem of public parking services that is happening in the city of Medan at this time has grown into a serious issue. The resulting consequences are increased air pollution, congestion problems, inconvenience in finding parking, to the problem of levies on illegal parking fees. Thus, the government through the Medan City Transportation Office as the policy implementer has launched a solution to control parking management to road users in real time through the implementation of the Smart Parking System program. This program is a part or dimension of Smart City, which is shaded by the concept of Smart Transportation. The results of this study state that an electronic parking engine has been installed in the city of Medan since 2013. However, after about four years the engine has been tested and not yet fully operational.

1. Introduction
Nowadays, the concept of Smart City is being intensified in Indonesia. One of the backgrounds of the initiation of the program was the increasing population which encouraged the birth of urbanization from village to city. Increasing urbanization certainly creates urban or urban problems. Starting from garbage, education, transportation, socio-economy, human-caused natural disasters, and health. The increasing urban population has triggered the city to need to have an integrated information management system to create work life security.

On the other hand, a society that is increasingly modern and established, has a myriad of expectations, such as a comfortable living and work environment, the existence of adequate public areas, the easier it is to travel, shopping experience, and so on.

What are the solutions to minimize the impact of urbanization? The solution to meeting expectations and minimizing the impact of urbanization is to present the concept of smart city or smart city. This system provides a digital city concept which is integrated information management in order to create value by applying the latest technology to search, access, transfer, and process information. With the existence of technology that is developing rapidly giving a change in the concept of lifestyle or lifestyle in society, so that the current era is an era where we are more connected with various systems or individuals, including the whole city and even the State. The latest technological
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developments applied to various devices and applications make everything can be controlled through
gadget grips. At present almost all elements of society have gadgets with various vendors. These
vendors offer a variety of products with price specifications that adjust to purchasing capabilities for
all people to make gadgets as a primary requirement.

With Smart City, various kinds of data and information located in every corner of the city can be
collected through sensors installed in every corner of the city, analyzed by smart applications, then
presented according to user needs through applications that can be accessed by various types of
gadgets. Through the gadget, users can also interactively become data sources, they send information
to the data center for consumption by other users. The concept is expected to create a city that is safe
and conducive to society. Some cities in Indonesia that have implemented the concept of smart cities
are Bandung, Balikpapan, Makassar, Yogyakarta, Malang and Surabaya.

How ready is the Medan city with the smart city challenges?

In this study we will see the readiness of the city of Medan in applying smart city through the
smallest thing first, namely smart parking.

2. Literature Review

2.1. Smart City Concept

The concept of smart city or that better known as smart city very popular developed as one of the
structuring concepts cities in various countries a few years back along with the rapid technological
development. This concept it originally grew since the year 1990s where internet connection started
worldwide since it was introduced in the 1960s.

    it was the development of the internet in that period that made service easier with information that
could be accessed through sites provided by the city government (Alwinkle, 2011). Although it is still
limited in the form of one-way service with the existence of static and limited information about urban
policy, land use, and planning, it is no longer denied that this is the beginning of the emergence of the
smart city concept.

    Caragliu, A (2010) define smart city as a city who is able to use the source human power (HR),
social capital, and telecommunications infrastructure modern to realize sustainable economic growth
and high quality of life, with resource management the wise through government based on community
participation.

    When interpreted literally smart city is City Development and Management with the use of
Technology Information and Communication (ICT) to connect, monitor and control various sources
power in the city with more effective and efficient for maximize service to citizens and support
sustainable development. The goal of Smart City is to realize the conditions of the city safe,
comfortable and have economic strength and competitiveness.

    Rudolf Giffinger (2007) states that there are six characteristics to realize smart city. Sixth
characteristic it illustrates ability of the city concerned in managing potential and solve the problem
happened or experienced. The sixththese characteristic fruits include:

    • Smart Economy
    City is expected to get become a place on going activities sustainable economy. This can be
realized through productivity which is high, which is followed with passion for innovate.

    • Smart Mobility
    The city is expected to be able realize provision infrastructure, systems, and transportation
services (landline, water, air) are safe, comfortable, and innovative, that is support the mobility
process society. Intelligent Transportation System (ITS) is one concept technology utilization
information to realize Smart Mobility in the field transportation.

    • Smart Environment
    City is expected to get realize utilization the information technology environmentally friendly,
so able to realize safe environment, comfortable, sustainable, healthy, friendly to the people and
other living things, and have Survival (Sustainability) is high. Concept and implementation in the form of Green Computing and Smart Grid, aims to help realize Smart Environment.

- **Smart People**
  City is expected not only able to realize the system the smart one (with based on technology information), but also smart community. Community in the city concerned is expected able to play an active role in in realizing, maintaining, and developing Smart City. Society of this type have soul and spirit high creativity, which is followed by tolerance, friendly, and have thoughts open (Open Mind).

- **Smart Living**
  City is expected to get realize the process better life (based on technology information), which includes quality of life of the community (Quality of Life) and culture (Culture) that has been run on society. For realize these characteristics, can be done through providing support infrastructure (electricity, internet, highway), handling problems in society (social, health, environment), as well as cultural preservation, with utilize technology information.

- **Smart Governance**
  Cities are expected to have good governance to realize Smart City, which in this case requires good cooperation between the government (as the authority) and the community. Transparency in the running of government, openness, community support for the ongoing government, and active participation from the community and government, are the main keys to realizing Smart Governance.

Giffinger et al. (2007), developing more than six of these smart city characteristics into smart city wheel, which is basically an encapsulation of a set of Key Performance Indicators (KPIs) of the framework, as an overall measure of the Smart City Index. Synergy is part of a larger smart city system that is bigger than the total. For example, "creativity" in smart people can encourage great "innovation" in the Smart Economy; Likewise, "innovation" in Smart Economy can inspire, then "creativity" in Smart People. The complex network between intra-relations and interrelationships of each of the six characteristics, through several two-way interactions (ie "affected by" and "influence on") among different factors, helps shape the city as a whole to be integrated. Nothing can be isolated or emphasized at the expense of the others on a road map to a smarter city.

![Figure 1. Smart City Framework](attachment:image.png)
2.2. Smart parking system
According to the San Francisco Municipal Transportation Agency (SMFTA) (2012), the smart parking system has a purpose, namely to facilitate parking management. There are basic elements and benefits in the smart parking system as follows:

- **Easier payment methods**
  Electronic Parking Machines can facilitate payments, because in the payment process use digital money in the parking card.
- **Improved Muni speed and reliability**
  Helps in speeding up the parking process and parking payments, especially in crowded commercial conditions.
- **Reduced illegal parking**
  Reducing drivers who are accustomed to illegal or illegal parking, because the parking lot has been prepared near the electronic parking engine.
- **Improved safety for all road users**
  Overcoming the danger of accidents that usually occur on the road, especially for pedestrians, cyclists and other drivers.
- **Increasing economic vitality and competitiveness**
  Increase access to crowded commercial areas. This will help change people's perceptions about the state of parking in one place and increase competitiveness in the area.

3. Research Method
This study uses a qualitative method. Approach qualitative is a method research used for examine the condition of the object natural, where the researcher is as a key instrument, technique data collection is done triangulation, data analysis is inductive and qualitative research results more emphasis on meaning than on generalization.

Data sources obtained from primary data source, namely through interview with the Service apparatus Transportation of Medan city and Secondary data source obtained from documents related to smart city and smart parking system in the city of Medan.

In this study used data triangulation, namely technique checking the validity of the data make use of something else on outside the data for purposes checking or comparison against that data. In this research the researcher conducted an examination validity of data by asking directly to the informant have complete data about smart city city of Medan.

To analyze various existing data used descriptive analytical methods. Data analysis is carried out inductively, starting from the field or empirical facts by plunging the field, studying the phenomena that exist in the field. Data analysis is carried out simultaneously with the data collection process.

4. Results and Discussion
On this issue Smart Transportation oversees Smart Parking System as a solution control of parking management declared by the City government Bandung to give parking services to the public. In this context parking services handled by the Department of Transportation City of Medan, aims to can provide location information parking to road users realtime and can detect availability of parking lots.

Smart Parking System Program is an important component of smart city framework. Technologysmart has the power to maximize the most important assets community and accommodate responsible growth answer by improving income, increase efficiency, and contribute to the future more sustainable.

With a smart parking system this will be the payment system parking will be done with use a card like emoney for Toll Road. So that the parking service users only by sticking the card on parking meter engine, then determine the duration of parking, then will automatically balance inside the card will decrease according to applicable rates. Smart Parking The system is expected to be able reduce traffic congestion and can control retribution parking. The obstacle is on people's awareness to use parking
machines. current conditions depend on parking attendants in the parking lot where parking is still limited and there is weak public awareness if there is no parking attendant.

In the city of Medan there have been 445 Electronic Parking Machines placed in 221 points or 56 locations. To operate the city government of Medan employs 700 parking attendants who are paid 1.8 million per month. It is expected that with this program the city government of Medan can increase parking retribution revenue by 20 percent.

5. Conclusion

Based on observations researchers in the field regarding smart city policy implementation at City of Medan, if associated with a theory confirmed by Edward III has several aspects which must get attention according to Edward's theory namely Communication, Resources, Disposition and Organizational Structure. the obstacle is on people's awareness to use parking machines. current conditions depend on parking attendants in the parking lot where parking is still limited and there is weak public awareness if there is no parking attendant.

Electronic parking machine that is installed in the city of Medan is the first step from smart city realization. However after about four years tested, and currently installed 445 machines spread over 221 points the machine hasn't run yet. What the problem? This matter demanding an in-depth study to review implementation smart city policy through smart parking.

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