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The Impact of ICT on Contemporary Urban Planning of Surabaya City

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List of Acronyms

C2G	Citizen to Government
DPA	Development Planning Agency
DPF	Development Planning Forum (Musrenbang)
FGD	Focus Group Discussion
G2B	Government to Business
G2C	Government to Citizen
G2G	Government to Government
ICT	Information Communication Technology
ISS	Institute of Social Studies
LPMK	(Lembaga Pemberdayaan Masyarakat Kelurahan) Kelurahan Community Empowerment Agency
MLIT	Ministry of Land, Infrastructure, Transport and Tourism
Renja	(Rencana Kerja Daerah) Regional Sector Implementation Plan
Renstra	(Rencana Strategis) Strategic Plan
Renstra-KL	(Rencana Strategis-Kementerian Lembaga) Ministry-Agency Strategic Plan
RKP	(Rencana Kerja Perangkat) Central Government Implementation Plan
RKPD	(Rencana Kerja Perangkat Daerah) Regional Government Implementation Plan
RPJM	Short-term Development Plan
RPJMD	Regional Short-term Development Plan
RPJP	Long-term Development Plan
RPJPD	Regional long-term Development Plan
RPJPN	National long-term Development Plan
RPRA	Regional People's Representative Assembly
RT	(Rukun Tetangga) Neighbourhood Association
RW	(Rukun Warga) Citizen Association
RWU	Regional Work Unit (Satuan Kerja Perangkat Daerah)
SEA	Standard Expenditure Analysis

Acknowledgements

Abstract

ICT adaptation in government has become a necessity in order to realize an accountable and efficient government. However, various studies provide a pros and cons picture that the application of ICT has an impact on changes in organizational management and gives wider access to the public to participate in the decision-making process, especially in the field of urban planning. Surabaya is one of the cities in Indonesia that concerns about implementation of ICT in government organization. One of the Surabaya City government breakthroughs presented by Development Planning Agency of Surabaya City, was the creation of an e-planning system as an instrument to help synchronize data collection from governments and citizens in the process of preparing urban planning in the city of Surabaya. This study aims to evaluate whether the application of e-planning has an impact on changes in organizational management, citizen empowerment, and reducing information asymmetry and transaction costs as the result of empowering citizens through access to information on urban planning. This study applies qualitative methods by combining semi-structured interviews, observation, FGD and secondary data. This study finds that e-planning adaptation results in positive impact on improving organizational management, such as increasing transparency and accountability, knowledge management and human capital. Furthermore, e-planning implementation managed to provide more access of information in urban planning to the citizens that leads to reduce information asymmetry and transaction costs. However, ICT implementation has minimal impact on culture and change, collaboration and communication, and organisational learning. Furthermore, even though e-planning is effective in providing more access to information and a platform for the direct involvement of citizens in urban planning, it is proven that only certain groups of people who gained benefits from it. People who do not have access to the internet and lack ICT literacy are excluded from the benefits of using e-planning. In addition, e-planning implementation is also managed to reduce information asymmetry and transaction costs although at the same time increasing the potential of the occurrence of indirect costs of government organizations to implement ICT.

Relevance to Development Studies

Recently, most of the research on e-government are focused on how it contributes to good governance but only few studies have explored and analysed the implication and effect of e-government on government organizational management, citizen empowerment, information asymmetry and transaction costs especially in the local/region context. As mentioned earlier, there is a current debate on assessing whether e-government implementation really changes the working management of government and whether it really provides empowerment to all citizens. Implementation of e-government has become more critical in the last two decades. Many developed and developing countries give more attention to this implementation of e-government and currently aim to enhance its outreach and objectives. This research will attempt to give a clear picture and understanding of how e-government implementation influence organizational management, citizen empowerment, transaction costs and information asymmetry in urban planning. It is important to do this research since not many studies have been done to directly assess these themes.

Keywords

Chapter 1
Introduction

The development of ICT adaptation within the scope of government in Indonesia began in 2001 when the president issued an e-government initiative through The Presidential Instruction No. 6 of the year 2001 of Telecommunications, Media, and Information Technology. Prior to this instruction being issued, the Indonesian government was still running conventionally with the characteristic of vertical and stiffed hierarchy, less efficient and effective coordination between governments, and lack of transparency to the citizens. E-government then, is being used as the new pattern in bureaucratic reform by improving public services to the community through modernizing the traditional way of government mechanisms (Aritonang 2017: 99), with the primary objective for creating good governance with its characteristics; professional, transparent and accountable bureaucracy as stated by Huda and Yunas (2016: 98).

E-government is seen as a panacea for all of the government's problems in terms of public service delivery and working mechanisms. Furthermore, a number of questions then arise, how does the implementation of e-government really provide a change in the pattern and mechanism of government work in providing public services? Moreover, how is e-government capable of being an instrument to empower all levels of society to be actively involved in the development process? These two questions are notable as they are used as an assessment in order to justify whether e-government contributes to the improvement of public services delivery in two relevant stakeholders; government as the provider and citizens as the receiver of public services.

1.1   Background of the Study

Surabaya is one of the pioneering cities in Indonesia that applied e-government since 2002, in order to realize its mission to improve its government in public services delivery (Effendi 2018), especially in urban development planning. Urban planning process in Surabaya City was characterized by policy inconsistencies, low community participation, inconsistencies between program planning and financing, low transparency and accountability, and ineffective performance appraisals as explained by Yunas (2017). This can be seen from various obstacles that occur in urban planning such as; the number of proposals that came in the form of hard copy from various stakeholders (ministries involved and community) result in the difficulties in finding data, the old recapitulation process that took a long time of period and the budgets provided were not on target because the objectives were not meet with the planning.

These problems were not only result in inefficiency urban planning management but also influencing the performance government organization involved in urban planning. These problems intrigued the Development Planning Agency (hereafter DPA) of Surabaya City to create an innovation in term of urban planning management by using ICT in 2009 by implementing e-Musrenbang to create a Local Government Implementation Plan (hereafter: RKPD) designated for a one-year period, as the first online application in the urban planning process that later became one part of an integrated system that called e-Planning.

As the capital of East Java Province and one of the cities with an advanced economy in Indonesia, Surabaya prioritizes infrastructure and spatial planning as the primary sector of its urban development planning. Surabaya has a total area of approximately 326.36 km2, which is divided into 31 sub-districts and 154 kelurahan[1] with a total of population of 2,874,699 people in 2017 (Central Bureau of Statistics of Surabaya Municipality 2018: 3). As the second largest city in Indonesia with its vast population, infrastructure and spatial planning are not merely giving impact to its economic development, but also affecting its population.

Map 1.1 Map of Surabaya City
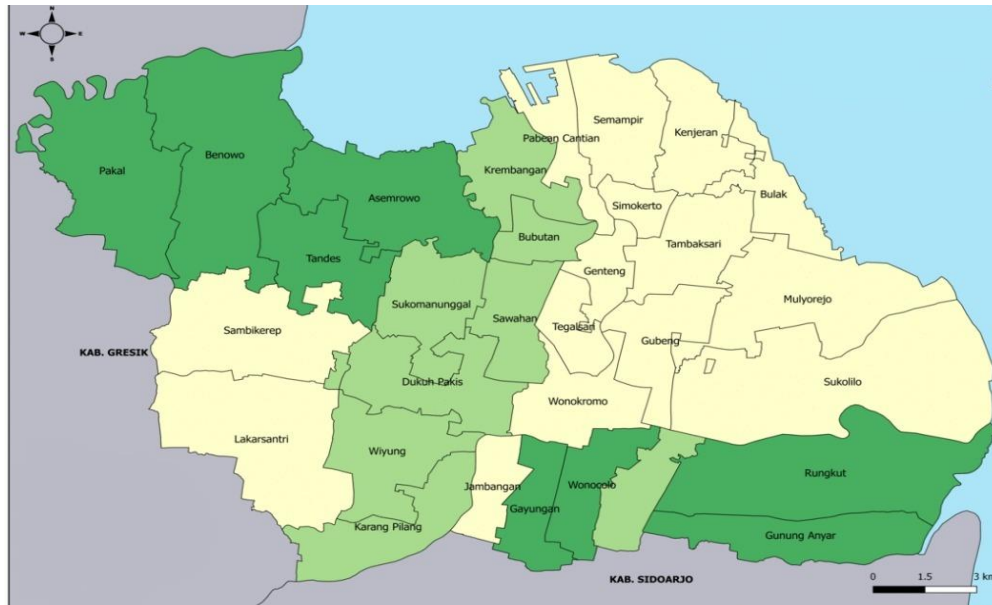
Source: the image of Surabaya Map ('Surabaya Map', n.d.)

Planning itself is an essential part of development management. Planning in principle revolves around two things; the conscious determination of the concrete goals to be achieved in a certain period, based on the values of the community concerned and the selection among efficient and rational alternative ways to achieve the objectives (Mustopadidjaja 2012). Therefore, careful planning is needed in order to achieve development objectives. E-planning utilization of DPA Surabaya City is seen as the way to solve the Surabaya government's problems in urban planning.

E-planning is used as the instrument to solve two main managing issues of urban planning in Surabaya City; 1.) changing the working pattern of government authorities in the urban planning process to be more efficient and effective. Although some studies show that the utilization of ICT in government does not affect the changing, culture, and the traditional way of government management (Aritonang 2017; Chen 2008). 2.) Empowering citizens in

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[1] Kelurahan is the division of administrative regions in Indonesia under the Sub-district. Kelurahan is the smallest administrative unit that have the same level as the village but with different characteristics. In its development, a village can be changed its status to become Kelurahan or vice versa. Unlike the village, Kelurahan is led by Lurah (the official name of Kelurahan Leader) who is a civil servant while village is led by village leader who is chosen by the community through village deliberation.

the urban planning process. Adaptation of ICT and e-government (such as official website, email, online chatting platforms, etc.) are introduced with the aim of increasing the involvement of citizens and to distribute the information of what the government did as discussed by Holzer and Zheng (2015). However, at the same time, this leads to exclusion group of people who have less knowledge and access to the technology application. Besides, by giving access to the public to involve in urban planning will directly result in reducing information asymmetry and transaction costs that are noted as one of the classical problems in urban planning.

In urban planning, information asymmetry is happened when one particular stakeholder monopolizes information and using the information for private benefits. While transaction costs increased due to information asymmetry that directly affect to the increasing costs of supervision to prevent the opportunistic behaviour. Information asymmetry and transaction costs contributed to ineffective and inefficient urban planning. Therefore, providing information to the citizens is like killing two birds with one stone; it will result in empowering citizens in urban planning while at the same time reducing information asymmetry and transaction costs that are attributed to the inefficiency of urban planning itself. Thus, it is also important to analyse further how does the e-government influence the reducing information asymmetry and transaction costs in urban planning since those lead to the improving organizational management and citizens empowerment.

Therefore, this study seeks to analyse the changing of organizational management and citizen empowerment in urban development planning of Surabaya City as the effect of the implementation of e-planning by the Surabaya city government. Its hypothesis proposes that the implementation of e-planning as a form of e-government contributes to; first, the changing of organizational management, in this sense is the working pattern, coordination and communication in organization of government official in within Development Planning Agency (hereafter DPA) of Surabaya and its interaction with different stakeholders such as involved local ministries, district/sub-district agencies and citizens in urban planning. Second, that citizens are empowered through active involvement and participation in urban planning process, thereby leads to reducing information asymmetry and transaction costs in urban planning.

Furthermore, there are few studies that discuss e-planning of Surabaya and this research will be the first research that discusses the implications of e-planning of Surabaya City DPA on community/citizen empowerment, information asymmetry, transaction costs and change in organizational management. The only other study to address e-planning of Surabaya was carried out by Wahyudi Nugroho in 2017 with the title *E-planning in Development Planning in Surabaya,* which had the objective of only identifying and explaining the impacts that occurred by comparing the ways in which urban planning processes occurred through e-planning. Nugroho's research merely explains the difference of development planning before and after the implementation of e-planning through interviewing DPA only, while this research has different focus and objective by assessing and evaluating the impacts of e-planning towards organizational management, citizen empowerment, transaction costs and information asymmetry.

1.2   Research Objectives

The main objective of this research is to identify, analyse, and evaluate whether the adaptation of ICT affect to the changes of organizational management of the DPA of Surabaya City and influence the citizens empowerment in urban planning. Based on this objective, this research starts by comparing urban planning before and after the implementation of e-planning to determine whether this implementation giving impact on urban planning process, organizational management, citizen empowerment, information asymmetry and transaction costs.

1.3   Research Question

In order to achieve the research objective, the main research question of this study is: "How does e-planning of the Development Planning Agency of Surabaya City influence organizational management and citizens empowerment?" This is supplemented by the following sub-questions:

Sub Questions:
1.) What is the e-planning of the Development Planning Agency of Surabaya City?
2.) How is urban planning of Surabaya conducted before and after implementation of e-planning?
3.) How is the organizational management of DPA before and after implementation of e-planning?
4.) How is the citizen empowerment before and after implementation of e-planning?
5.) How e-planning implementation affected on reducing information asymmetry and transaction cost in urban planning of Surabaya City?

1.4   Limitation of the Research

This research will only cover the impact of e-planning of DPA Surabaya City as one of ICT/e-government utilization in urban planning on organizational management, citizen empowerment, information asymmetry and transaction costs. Considering that the research will explain the impact by using a comparison of before and after e-planning implementation, this research is limited to these two times periods; before the implementation of e-planning (period 2004-2009) and after the implementation of e-planning (period 2009-2019). Furthermore, in terms of urban planning, this research focusses only on the physical (infrastructure and spatial) planning of Surabaya City. This study will also only cover two main stakeholders involved in urban planning of Surabaya City; governments; such as DPA, RWUs, sub-districts and kelurahan, and citizens. While the developers and contractors as stakeholders in urban planning are minimally explained in this research due to the main objective of this research to analyse the changing in organizational management and citizens empowerment.

1.5   Research Paper Structures

This paper is divided into five chapters. Chapter 2 will focus on the conceptual and theoretical framework of this research, which includes organizational management, citizen

empowerment, information asymmetry, and transaction costs. Chapter 3 will focus on the methodology used in this research. This chapter is divided into three parts; data collection and analysis method, ethical considerations and positionality, and challenges in the fieldwork. Chapter 4 will focus on the findings and analysis, by dividing into 4 parts; part 1 will explain about urban planning of Surabaya City before and after implementation of e-planning and the what is e-planning system. Part 2-4 will explain the impact of e-planning on organizational management, citizen empowerment, information asymmetry and transactional cost respectively. Chapter 5 as the last part of this paper will explain the conclusions and policy recommendations.

Chapter 2
Conceptual and Theoretical Framework

This chapter discusses four main concepts that are necessary to understand the findings of this research (to be presented and elaborated on Chapter 4), namely: organizational management, citizens empowerment, transaction costs and information asymmetry. These four concepts are used as an analytical framework to answer the research questions. Thus, in the final part of this chapter, the analytical framework is presented through the elaboration of these four main concepts.

2.1 Assessing Impact of ICT on Organizational Management

In the field of governance, the use of ICTs gave birth to a concept known as e-government. Some scholars define e-government as ICT (internet) adaptation with the purpose of improving delivery of government services to three classifications of communication and interactions; Government to Citizens (G2C), Government to Employee (G2E), Government to Government (G2G) anNd Government to Business (G2B) (Carter and Belanger 2004; Ndou 2004; Reddick 2004; Panzardi et al. 2002; Ashaye 2014). While others define e-government through assessing its impact on organization by defining e-government as ICT utilization to achieve more efficient, effective, convenient, cost-effective and accountable government by providing citizens with access to information (Wescott 2001; Koh et al. 2005).

In essence, there is no standard of definition of e-government itself. Scholars provide various definitions of e-government in accordance with their respective objectives. However, there is a need to provide definitions of e-government in order to prevent a poor understanding of e-government that may lead to failure in analysis of e-government (ICT) effectiveness and impact towards its goal, especially in this research. Based on these definitions, it can be concluded that ICT is used in government to improve government management systems and communication with different stakeholders, including citizens.

Prahono (2015) stated that e-government/ICT has the ability of providing more convenient information and public service delivery to reach goals in public administration reform. In addition, ICT is recognized as an instrument of improving government's policymaking, program administration and compliance (US Government 2002; Srivastava 2011), that leads in improving government system (Teo et al. 2008; Grant and Chau 2005). On the contrary, other scholars such as (Kraemer and King 2006; West 2004; Holden 2003) stated that basically, utilization of ICT has never been used or even categorised of a tool to achieve administration reforms and organisational change, but that the utilization of ICT is to reimplement existing, old, and traditional administrative processes and reinforce organizational structures. Despite of these debates, there are several studies which tried to assess the advantage of ICT implementation to the organizations, especially the management of organization. Some studies tried to evaluate the changing of organizational operational improvements in decision-making process in order to support its strategic goals (Sivarajah et al. 2015: 475).

> "The good governance at local level means, to have a program with several actions and strategies that monitoring the urban functions (in an urban framework), enabling environment issues…Thus, the urban planning authorities should provide strong local

institutions capable to respond to the needs and expectations of citizens" (Virtudes and Sá 2017:2).

This statement implies the importance of improving organizational management where all of the decision-making and strategies are decided in order to achieve reliable and capable of local governments to manage urban planning. In the context of this research, ICT is seen as an instrument to improve the organizational management of DPA. Organizational management is defined by (Robbins and Coulter 2016; Terry 1986) as the comprehensive process of planning, organizing, leading and controlling assets and resources of organization to achieve organization's goals. Based on this definition, it can be concluded that all of processes in organization used to achieve organization's goal can be categorized as management of organization. Furthermore, related to the research objective, it is necessary to evaluate in which aspects the application of ICT able to change the way organizations are managed.

Terry (1986) divides the impacts of ICT on organizational management into 5 classification; *Operational Function*, refers to the changes of structure, working patterns, allocating and managing staffs, knowledge management, culture of organization, where its function is taken over by ICT, thus lead to creating more efficient organization. *Monitoring and Control Function*, refers to supervision and control mechanisms in the organization. ICT allows for effective interaction between managers in related companies/organizations. *Planning and Decision Function*, implies the improvement that ICT brought to help and assist the decision-making process. This function also refers to the strategic function of organization. *Communication function*, describes ICT as an instrument or media for individuals in organization in communicating, collaborating, cooperating, and interacting. *Interorganizational Function*, ICT allows wider possibility to collaborate between staffs in within organization as well as inter-organizations.

Furthermore, (Sivarajah et al. 2015) made a classification to assess the impact of e-government on organisational management into 8 categories, namely; culture and change, transparency and accountability, policy alignment and governance, knowledge management, collaboration and communication, organisational learning, human capital, and financial resources. I combined conceptual frameworks of ICT's impact on organizational management of (Terry 1986; and Sivarajah et al. 2015) to be used as analytical framework of this research in order to gain comprehensive understanding about ICT's impact on organizational management. The description of this combination can be seen as follows:

Table 2.1 Framework of ICT's Impact on Organisational Management

	Categories	Description	Management Function
1.	**Culture and change**	Implementation of ICT in organisation leads to changing of government culture as well as its working culture. Initial closed-government culture should be changed into an open government in order to adapt ICT (Parycek and Sachs 2010; Lathrop and Duma 2010)	Operational
2.	**Transparency and accountability**	Transparency and accountability of government could be achieved through implementation of ICT (Bertot et al. 2010)	Monitoring and controlling
3.	**Policy alignment and governance**	There is a need to align the policies related to ICT implementation to minimise risks (Meijer and Thaens 2010)	Planning and Decision
4.	**Knowledge management**	ICT allows more effective knowledge management in organisation as well as inter-organisational relations (Traunmüller 2010, Girard and Girard 2015)	Operational
5.	**Collaboration and communication**	Improving communication and coordination in internal relations of an organisation and external relations in government organisations through changing of traditional hierarchies (Schweik et al. 2011).	Communication and Interorganizational

6.	**Organisational learning**	Shared-information in within organisation leads to social learning process of the members of organisation (Baxter et al. 2010)	Communication and Interorganizational
7.	**Human capital**	Human capital investment is needed to adapt ICT in organisation by hiring the skilled and capable staffs in operating ICT (Mintz 2007)	Planning and decision
8.	**Financial resources**	implementation of computer cloud leads to the saving of financial resources of organisation due to organisation is no longer needing to use specific software (Marston et al. 2011)	operational

Source: Author's elaboration based on (Sivarajah et al 2015: 476; and Terry 1986)

This serves as the analytical framework of this research to assess the impact of ICT on organisational management due its comprehensive categories explained above. Considering the nature of e-planning utilization that specifically needs a new utilization of software, the category financial resources, will be excluded from the analytical framework that will be used in this research.

2.2 Citizen Empowerment

Theories about empowerment began to develop and gained attention in the academic literature in the 1970s (Perkins and Zimmerman 1995). The essence of empowerment according to Rappaport (1981), is defined as the term which directly refers to the involvement of all parties (citizens), both competent and incompetent in their efforts to control their own lives. It means, people get power to decide over issues that relate to their lives.

The process to gain power can be occurred in all levels of clients/citizen such as individuals and organization/government. This research will focus on the empowerment of citizens to gain power relations and increase their participation in urban planning process. The relation between empowerment and power as discussed by Pettit (2012: 4) that "Power can be understood as a kind of mutual interaction of agency and structure, and empowerment as a process that requires shifts in both dimensions". Citizens empowerment refers to the citizens' opportunity to be involved and participate in the process of decision making (Naranjo-Zolotov et al. 2019:366).

In urban planning, active participation of citizens is necessary since citizens are not only the beneficiaries of urban planning programs, but also subject of urban planning, since citizens own the tacit knowledge about their neighborhood area, such as socio-economic dynamics of citizens, land-use pattern, prospective areas and infrastructures that needs to be improved as stated by Mundula (2019). In other words, citizens are the one who know better what they need in term of infrastructure and spatial planning. Thus, the government in the process of deliberation needs to involve citizens to determine urban planning programs. Besides, some studies show that citizen empowerment is a key element of successful participation in deliberating and decision-making processes in urban planning (Macintosh 2004; Kang 2014; Omar et al. 2017).

The active involvement and participation of citizens can be achieved by the implementation of e-government that can give an access to information and tools related with public services provided by government and how the government works (Piotrowski and Ryzin 2007; Aladalah et al. 2015). One main feature that is offered by the implementation of e-government is transparency of what government did and decided. This affects citizen participation because with this access to information, citizens have ability to understand the policies and services provided by the government and thus would indirectly increase their participation, or in other words, empower citizen to contribute and involve in development

process as explained by (Li and Gregor 2011). In addition, involvement of citizens in deliberation and decision-making process has the potential to reduce the democratic cost as stated by (Vragov and Kumar 2013).

E-government that is specifically used as a platform for citizen participation is referred as e-participation. The classification of e-participation is divided into a three-level model: e-information, e-consultation and e-decision-making, that reflects the change from passive citizens to become active citizens (United Nations, as cited in Kassen 2017). Moreover, e-participation has the potential to facilitate interaction and collaboration between two main stakeholders in urban planning; government and citizens (Welch 2012; Tan et al. 2005). Furthermore, one of the critical points about increasing citizens empowerment through e-government platform is that citizens empowerment should not only be assessed through how government encourages citizens to be involved in decision-making process by providing e-participation platform, but also the assessment needs to pay attention to citizens' readiness to devote their time and spend the costs for using e-participation platforms (Kassen 2017).

In order to assess citizens empowerment through e-government, it is necessary to pay attention to the drawbacks of ICT utilization related with the problems of computer/technology literacy and accessibility to internet connection, as elaborated by Martins et al. (2017). These problems can represent crucial barriers to the adoption and maximization of ICT utilization as stated by Janssen et al. (2012). Besides, political factors such as citizens political awareness and culture also play significant role in ICT utilization as noticed by Oni et al. (2017).

While e-government services affect the citizen participation, it is consequently changing the relationship between government and citizens. The government and citizens are getting closer because citizens not only gained efficient public services and information, but also can participate and give their recommendations through e-government applications related with development. This is also in line with the statement of (Fung 2005: 5) that states that empowered participation through e-government by inviting ordinary citizens to participate in governance policymaking, that is substantially empowered because actions of government officials and involved agencies are determined by this citizen participation. In e-planning system of DPA of Surabaya City, citizens are invited to directly participate in formulation of urban planning and its policy, as well as to monitor government's decisions. In other words, the government's works and actions are being influenced by its citizens that we assume as empowerment of citizens to influence government.

There are many debates concerning the relation between empowerment and participation. Some scholars state that participation is a part of empowerment, while many other scholars argue that empowerment is the opening path of active participation. Furthermore, there is no single way to define empowerment itself nor to show how it is measured. In order to measure empowerment in urban planning for this research purpose, The Wheel of Participation by (Davidson 1998) is considered as the comprehensive framework to analyse citizen empowerment and its correlation with participation in urban planning.

Figure 2.1 Wheel of Participation

Council obliged to provide a service but chooses to do so by facilitating community groups or agencies to provide that service on their behalf; e.g. care services by the voluntary sector. Example technique: Application of participation techniques with political support to delegate power.

Devolving substantial decision-making powers to communities; e.g. tenant management organisations. Example technique: Application of participation techniques with political support to delegate power.

Government/agency deciding on all matters itself without community/public consultation (except when legally required to do so); but e.g. minutes of committee meetings available. Example technique: Public notices.

Telling the public only what you want to tell them, not what the public wants to know; e.g. press releases. Example techniques: Newsletters, Campaigns.

Delegating limited decision-making powers in a particular area or project; e.g. school boards. Example technique: Application of participation techniques with political support to delegate power.

Providing information which the community wants and/or needs; e.g. discussion papers for development plans. Example techniques: Leaflet, Exhibitions for planned project.

Allowing communities to make their own decision on some issues; e.g. management of community hall or green space. Example technique: Application of participation techniques with political support to delegate power.

Providing information in a limited manner with the onus often placed on the community to respond; e.g. Posters and leaflets. Example techniques: Public meeting, Survey.

Solving problems in partnership with community; e.g. formal partnership. Example techniques: Co-option, Stakeholder groups, Design game.

Inviting communities/interested parties to draw up proposals for Government/agency consideration; e.g. Community Councils. Example techniques: Citizens' Juries, Planning for Real.

Government/agency actively discussing issues and current thinking with community/public prior to taking action; e.g. liaison with interest groups. Example techniques: Citizens panels, Focus groups, User panels.

Having a customer-orientated service; e.g. introducing a customer care policy. Example techniques: Comment cards, Complaint forms, One-to-one interviews.

EMPOWERMENT — ENTRUSTED CONTROL, INDEPENDENT CONTROL, DELEGATED CONTROL

INFORMATION — MINIMAL COMMUNICATION, LIMITED INFORMATION, GOOD QUALITY INFORMATION

PARTICIPATION — LIMITED DECENTRALISED DECISION MAKING, PARTNERSHIP, EFFECTIVE ADVISORY BODY

CONSULTATION — LIMITED CONSULTATION, CUSTOMER CARE, GENUINE CONSULTATION

Source: (Davidson 1998: 15)

Wheel of participation of Davidson (1998) describes the process of how individual/community gained the degree of empowerment as the highest level of participation in its relations with government authorities. It starts from the lowest stage, *information,* when individual/citizen is informed by government about its activities. The second stage is *consultation,* where governments consult (in a limited manner) with citizens as individual or through community organizations. The third stage is *participation*, where citizens are involved in decision making (limited) and collaborating with community organization to exercise their participation. The last stage is *empowerment,* in this stage, citizens have gained power to be involved in decision making actively and intervene in the decisions being made. Those levels/degrees can be presented simultaneously depending on availability. Thus, from its richness of understanding citizens empowerment and considering the nature of this research to analyse urban planning, this theoretical framework will be used as analytical framework for this research to assess to which extent e-planning affects citizens empowerment.

2.3   Transaction Costs and Information Asymmetry

Transaction costs are defined as any type of cost, beside production costs, that are incurred in interactions between economic agents, either in the market, organization, government or in relation to the public (Guliyeva and Rzayeva 2018: 211). This includes the costs of searching and processing information, costs of negotiating in process of decision-making, costs of monitoring and enforcing the contracts (Mburu et al. 2003; Guliyeva and Rzayeva 2018), costs in process of articulating, maintaining and transferring property rights (McCann et al. 2005), and exchange costs in intra institution and inter-institutions (Marshall 2013).

Coggan et al. (2013) classify the two important stakeholders who experience transaction costs; policy makers who responsible for designing and enforcing the policy, and the private sectors (including the citizens) who are affected by its policy enforcement. Meanwhile (Coggan et al. (2015) specifically divide private transaction costs in participation into two distinct features; *non-financial transaction costs*; such as efforts and time spent in looking for information and involvement in decision making, and *financial transaction costs;* such as expenses incurred in all of the processes of gathering information, decision-making, and monitoring. Thus, this classification fits with the nature of this research to analyse the transaction costs experienced by citizens in the process of urban planning.

Transaction costs in urban planning occur in "governance of planning, information asymmetry and the structure of contractual agreements" (Mundula 2019: 2). The *governance of planning* focuses on the process of decision-making (Twight 1994). In urban planning the process of decision-making starts from the lowest level in neighbourhood deliberation, when citizens are involved in giving their proposals (participation costs) that include information gathering, negotiation, coordination between governments involved, and monitoring and evaluation. Second, *contractual arrangements structure*, this aspect focuses on the problem of agency costs in urban planning, when the opportunistic behaviour of agents could not be identified due to unclear contractual agreements between administration (principal) to the agents; bureaucrats, planners, and citizens. The agency costs could be detected in the implementation stage and in the phenomenon of unlawful infrastructures. To prevent the possibility of agency costs, the administration (governments) should clearly define stick and carrot procedures in contractual agreements (Mundula 2019).

Third, *information asymmetry* is one of the causes of the occurrence of transaction costs. Information asymmetry happens when the presence of state apparatuses, government employees and the private sectors have more information and use the information for private gain (Guliyeva and Rzayeva 2018: 201). Information asymmetry fits particularly in the urban planning process since the planning activity comprises information collection and interpretation such as the prospective location for new infrastructure, land-use pattern, socio-economic dynamic of citizens, etc., that are mostly tacit knowledge (Mundula 2019: 3). Thus, information should be provided to all of stakeholders involved especially citizens, to achieve urban planning objectives. In general, information asymmetry is divided into two parts; *1.) adverse selection,* refers to the condition when one or more parties who carry out a transaction process knows more information about other parties. The information needed then is not conveyed to other stakeholders in order to gain private interests 2.) *moral hazard,* occurs when one party utilizes the ignorance of the other party to take an action outside the previous agreement (Scott 2015).

(Williamson, as cited in Duran and McNutt 2010: 759-760) states that in situations where information asymmetric information occurs, the individuals/parties have the potential to act opportunistically. He divides opportunistic behaviour into two classifications; first, *ex ante*

opportunism, is opportunistic behaviour that occurs when one of the parties involved in the transaction only has limited information about the object of the transaction. It refers to the adverse selection. This happens during the period of contract negotiation where parties with more information can use it to gain advantage in unfair ways. This can be overcome after the transaction becomes complete. Second, *ex post opportunism,* refers to the condition where one party controls more information than another party, where the potential for moral hazard cannot be diverted even when the transaction has occurred. It occurs after the contract agreement is made in the form of neglecting or non-compliance with the contents of the contract agreement that has been agreed upon. Ex post opportunism may also arise in situations where one party takes advantage of the other party's vulnerability, which is carried out solely to increase its profitability. This directly links with contractual arrangement structures. From this illustration, it can be concluded that information asymmetry is a trigger for the emergence of opportunistic behaviour, where it results in transaction costs. This phenomenon reflects information as the source to form power relations between stakeholders in urban planning.

The higher the chance for opportunistic behaviour to emerge, the greater the transaction costs incurred (Cordes et al. 2011: 12). The increase in transaction costs is due to the need to increase coordination efforts and increase compliance costs, all of which will lead to inflated costs for negotiations, drafting, supervision, and enforcing contracts. All of the stakeholders involved need to increase supervision to prevent the risks of opportunistic behaviour, that happens because of information asymmetry directly generating transaction costs as explained by Coggan et al. (2013). Thus, to prevent this from happening, trust should be formed through providing information to all of stakeholders (Ducos and Dupraz 2006; Ducos et al. 2009; Mettepenningen and Van Huylenbroeck 2009; and Dyer and Chu 2003; Morrison et al. 2008), where citizens are involved in urban planning and sharing the responsibility of process of urban planning by applying bottom-up approach (Mundula 2019) that refers to "associative democracy" (Smith and Teasdale 2012).

2.4   Analytical Framework

Based on the four concepts explained in the previous parts, I organized the analytical framework that is used to analyse the findings of this research in order to answer the research questions. This analytical framework is a combination of all four concepts that explains the relations between ICT impacts on these four concepts/themes.

First, in order to measure the impacts of ICT on organizational management, I use framework of impact of e-government on organizational management by Sivarajah et al. (2015) and Terry (1986) into 4 categories; **1.) operational function; culture and change and knowledge management. 2.) communication and interorganisational function; collaboration and communication and organisational learning 3.) Planning and Decision Function; policy alignment and governance, and human capital. 4.) monitoring and controlling function; transparency and accountability.** Second, I analyse the impact of ICT on citizens empowerment through applying the wheel of participation by (Davidson 1998) with 4 types of empowerment degrees with each classification; **information, consultation, participation and empowerment.** Lastly, I apply the concept of transaction costs and information asymmetry by (Mburu et al. 2003; Guliyeva and Rzayeva 2018; Mundula 2019; Scott 2015; Coggan et al. 2013; and Coggan et al 2015). Furthermore, I created an operational of analytical framework which illustrates the relation between ICT (e-planning) and the four concepts in this research as follows:

Figure 2.2 Interlinked-relations of Analytical Framework
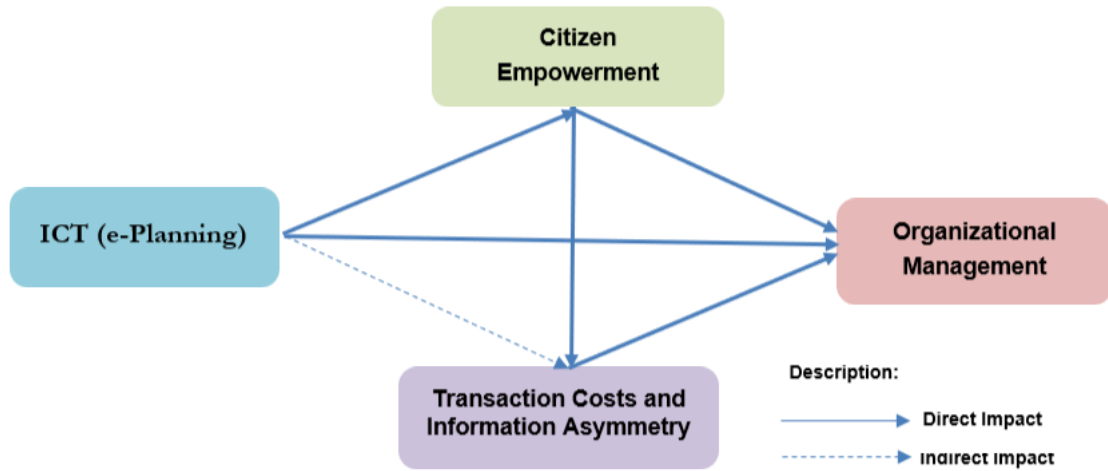
Source: Author's elaboration

This figure illustrates how ICT (e-planning) has direct impact on citizen empowerment and organizational management and indirect impact on transaction costs and information asymmetry. Citizen empowerment directly gives impact on organizational management, information asymmetry and transaction costs, while transaction costs and information asymmetry directly affect organization management. From this figure, it can be seen that organizational management is affected by all of the elements such as ICT, citizens empowerment and transaction costs and information asymmetry. These interlinked-relations are analysed further in the chapter 4.

Chapter 3
Methodology

3.1   Data Collection and Analysis Method

This research paper used qualitative methods considering the research objective and research questions addressed by combining semi-structured interview, focus group discussion, observation and secondary data to give a clear understanding and empiric knowledge about the issue. Qualitative approach is used to provide in-depth understanding of certain issues that involves the opinion, perspectives, feelings of the participants. In addition, qualitative approach is also used to gain understanding of contextual influences on particular research problems (Hennink et al. 2011). Thus, qualitative approach is suitable for this research which focus on to analyse the impact of ICT in urban planning.

I went to the field in Surabaya City, Indonesia, from 10 July - 29 August 2019 to conduct interviews, observation and FGD. All of the interviews, observation and FGD were conducted in Indonesian language and later I transcribed all of the interviews in English. Considering the board area of Surabaya City, I used purposive sampling to choose and determine one Sub-district as representative. Purposive sampling is used by identifying areas that are knowledgeable or experienced with certain issue (Cresswell and Plano Clark 2011) and effective to be used in limited resources (Patton 2002). The Sub-district agency chosen is Wonokromo Sub-district with consideration that Wonokromo Sub-district is one of developed Sub-districts in Surabaya, has high population density, the area is divided into more than 3 Kelurahan and the focus of infrastructure development of Surabaya City. Wonokromo Sub-dstrict is divided into 6 Kelurahan; Wonokromo, Sawunggaling, Ngagelrejo, Ngagel, Jagir and Darmo.[2]

Although the observation and FGD were conducted only in Wonokromo Sub-district, the interviews were also conducted in two other Sub-districts, Sukolilo Sub-district and Asemrowo sub-district to obtain broader information on the impact of e-planning implementation on citizen empowerment. These two Sub-districts have distinct characteristics, Sukolilo is the second largest Sub-district in Surabaya, while Asemrowo Sub-district is one of prioritized areas for slum development.

3.1.1 Semi-structured Interviews

In-depth interview is a one-to-one data collection method which aims to discuss certain topics pertaining to the research question in depth with regards to how people make decisions, their motivations and feelings (Hennink et al. 2011). Based on research objective, I conducted semi-structured interviews with several key informants in DPA of Surabaya City, Sub-districts agencies, and LPMK to gain information about how urban planning in Surabaya before and after e-planning (sub-questions 1 and 2), in which ways e-planning affect organizational management of governments organization involved in urban planning process (sub-question

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[2] Based on (Wonokromo Sub-district 2018) Musrenbang Report 2018 of Wonokromo Sub-district (unpublished report)

3), and the governments' perspective about citizens empowerment that contributes to information asymmetry and transaction costs in urban planning (sub-questions 4-5). I chose all of the key informants based on their position in the organization, capability and involvement in infrastructure and spatial urban planning. All of the interviews lasted between 45 – 90 minutes.

Table 3.1 List of Interviewees

No.	Interviewees	Position/Organization	Code of Interviewees
DPA of Surabaya City			
1.	Nina Anggreni, ST	Head of the Sub-Section of Research and Development	DPA1
2.	Praptining Rahayu, S.KM	Head of the Sub-Section of the Work Plans	DPA2
3.	Adi Gunita, ST	Head of the Sub-Section Transportation, Water Resource and Utility	DPA3
4.	Galuh Trianto Wibi-sono, S.KOM.	Head of the Sub-Section of Data and Information Harmonization	DPA4
5.	Ema Agustina, ST	Head of the Sub-Section of Spatial, Settlement and Environment Planning	DPA5
Sub-Districts Agency			
6.	Ir. Yayan Susyanto	Head of Section Infrastructure Development Wonokromo Sub-District	SDW1
7.	Tri Wulan	Staff of Section Infrastructure Development Wonokromo Sub-District	SDW2
8.	Soeprijadin	Head of Section Community Empowerment Wonokromo Sub-District	SDW3
9.	Indah	Staff of Section Community Empowerment Wonokromo Sub-District	SDW4
10.	Iin	Head of Section Employee Affairs Sukolilo Sub-District	SDS1
11.	Rudi	Head of Section Infrastructure Development Asemrowo Sub-District	SDA1
LPMK[3]			
12.	Jumali	Leader of LPMK Genteng Kalianak Asemrowo Sub-District	LPMK1
13.	Sarioso Abadi	Leader of LPMK Tambak Sarioso Asemrowo Sub-District	LPMK2

3.1.2 Focus Group Discussion

Focus Group discussion is appropriate to use in order to understand specific issue and gain a broader view of the issue where participants are comfortable to express their perspective and opinion (Hennink et al. 2015:136). I conducted FGD on 21 August 2019 with 12 participants from LPMK leaders and citizen representatives of all 6 Kelurahan of Wonokromo Sub-district. The FGD is conducted in order to gain information and knowledge about

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[3]LPMK (Lembaga Pemberdayaan Masyarakat Kelurahan) is an organisation formed on the initiative of the community through deliberations and consensus, LPMK is partner of government in Kelurahan level in order to realize the aspirations and needs of the community in the field of development. LPMK is also created to help Lurah (Kelurahan leader) in the effort to develop and mobilize community participation in development. LPMK of Surabaya City is regulated through Regulation of The Mayor Surabaya number 38 of 2016 by Mayor of Surabaya, Government of Surabaya (2016a).

citizens' perspective and opinion about the impact of e-planning on citizen empowerment before and after and related with information asymmetry and transaction costs to involve in urban planning (sub-question 1, 4 and 5).

Table 3.2 List Participants of FGD

No.	Participants	Position/Organization
1.	Iin Sriyah	Community representative of Kelurahan Wonokromo
2.	Moch. Unsi	Leader of LPMK Wonokromo
3.	Santoso	Community representative of Kelurahan Jagir
4.	Sudiro	Leader of LPMK Jagir
5.	Gandhi Aria K	Community representative of Kelurahan Ngagel
6.	Rakitanas	Leader of LPMK Ngagel
7.	Budi Susanto	Community representative of Kelurahan Ngagelrejo
8.	Suwarno	Leader of LPMK Ngagelrejo
9.	Samija Wibowo	Community representative of Kelurahan Sawunggaling
10.	Satuji	Leader of LPMK Sawunggaling
11.	Dadang Darmanto	Community representative of Kelurahan Darmo
12.	Roby Depari	Leader of LPMK Darmo

3.1.3 Observation

In order to gain more depth knowledge about the process of urban planning in Surabaya (related with sub-question 1, 2, 4), I did the observation by attending the Meeting of Validation of Infrastructure Planning in Wonokromo Sub-District on Wednesday, 21 August 2019 with 14 participants.[4] The meeting was held by Section of Infrastructure Development of Wonokromo sub-district by inviting the community and LPMK representatives from 6 Kelurahan. The purpose of this meeting was to discuss the infrastructure development planning that is being implemented in each Kelurahan, its challenges and when the implementation will complete. Furthermore, in this meeting each representative described the recent conditions of society and infrastructure in their neighbourhood. In this meeting, I positioned and introduced myself as an outside observer (candid observation) to all of participants. I also used unstructured observation technique by record all observation without predetermined criteria and then later used it to seek for the relation and pattern with the research purpose (O'leary 2014: 231).

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[4] see Appendix III: List Participants of Validation of Infrastructure Planning Meeting of Wonokromo Sub-District

3.1.4 Secondary Data

The secondary data was collected from DPA of Surabaya City website and reports, official report of Sub-District Wonokromo and other government institutions, in order to give general and basic understanding about the research topic and its objective. In addition, secondary data was also collected from news and other government institutions website to give general description about Surabaya and urban planning in Surabaya City.

3.2   Ethical Considerations and Positionality

In term of ethical considerations, all of participants consented all of their names will be cited in this paper. Before conducting an interview, I asked each interviewee whether they give permission to be audio recorded. Some interviewees were more comfortable without recording, so in these cases, I took notes instead of recording. In FGD and observation, I asked for permission of all participants beforehand if I can record the process and they agreed. In term of positionality, I do not have any relation with either DPA of Surabaya City or any other agencies involved in urban planning of Surabaya City. I am also not a resident of Surabaya City. My motivation to write about this topic is based on personal interest related of the complexity of urban planning, the impact of innovation by using ICT as instrument to improve government performance in this field and evaluate whether mandate of national regulation to involve citizen in decision-making process is implemented.

3.3   Challenges in the Fieldwork

The challenge or limitation that I faced was in obtaining primary data due to research permit regulations of the Indonesian government that took a long process. I was obliged to get the research permit in two different level of administration; provincial and municipality levels before conducting interview and gathering data in official government institutions. It took more than 14 work days to process the research permit in Surabaya City before I can directly conduct a single interview due to the inconsistency of research regulation in national and regional level, especially since I am a student from aboard university that have different procedures (includes documents prepared) with the students from domestic universities. While gathering data from Kelurahan and Sub-district agencies was quite challenging consider most of Kelurahan and Sub-district agencies do not have comprehensive collection of data.

Chapter 4
Assessing the Impact of ICT on Contemporary Urban Planning

This chapter provides the findings through methods used and secondary data that have been gathered, as well as the analysis of findings by using the conceptual and theoretical framework presented in Chapter 2. It also answers the main research question about the impact of e-planning DPA of Surabaya City on organizational management and citizen empowerment. Furthermore, it also provides the answers to the 5 sub-questions that have been posed to explain the details of the main research question.

4.1   Urban Planning of Surabaya City

This sub-section is constructed in order to answer two research sub-questions related with urban planning of Surabaya City before and after implementation of e-planning and provides explanation on the details of e-planning system of the DPA of Surabaya City. This sub-section is divided into 2 parts; urban planning of Surabaya City before implementation of e-planning and urban planning of Surabaya City after implementation of e-planning.

4.1.1 Urban Planning of Surabaya City before Implementation of e-planning

Planning is the most important part in the development process in a country or local area. Because the quality of development will be assessed by the right planning process. In Indonesia, the development planning process changes following the development of existing government regimes. After the new order collapsed, there were fundamental changes to the decentralized government system from centralized government, automatically changing the national and regional development planning system that has been regulated through Law no. 25 of 2004 concerning the National Development Planning System.

Figure 4.1 Development Planning in Indonesia based on Law 25/2004
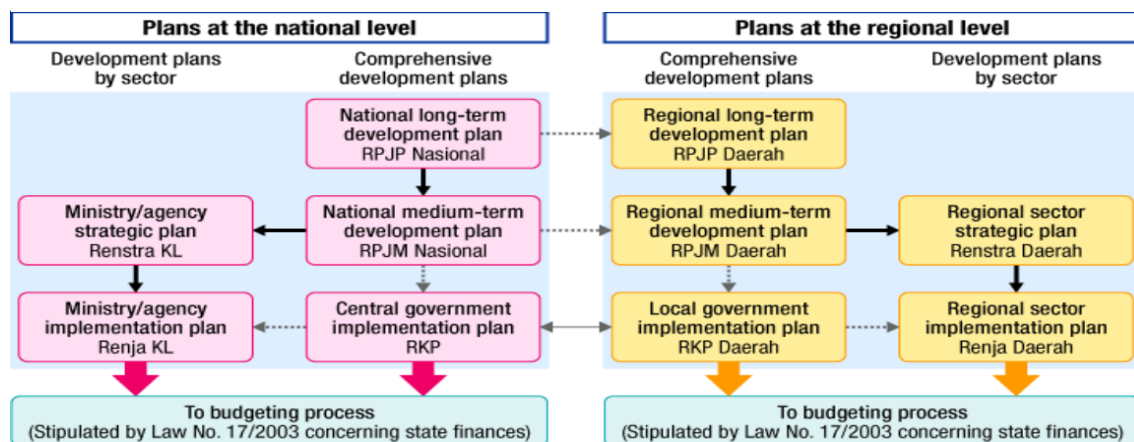
Source: the image of Indonesian Development Planning ('Socioeconomic Planning System', n.d. based on Indonesia National Development System Law 25/2004)

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Based on figure 4.1, the development plan is divided into two levels; national and regional development planning. There are three kinds of regional development plans namely; Regional long-term Development Plan (hereafter: RPJPD) designated for a 20 years period, Regional medium-term Development Plan (hereafter RPJMD) created for a 5 years period and Local Government Implementation Plan (hereafter RKPD) that is created annually. In addition, there are also two kinds of Regional Work Unit (hereafter RWU) Plans, namely the Regional Strategic Plan (hereafter: Renstra Daerah) and Regional Sector Implementation Plan (hereafter: Renja Daerah) for 5 years and 1 year respectively.

The government of Surabaya City as the regional authority refers its urban planning, based on the Law Number 25/2004 concerning National Development Planning System and Minister of National Affairs Regulation Number 54/2010 concerning implementation of Government Regulation of the Republic of Indonesia Number 8/2008 about Stages, Procedures for Preparation, Control and Evaluation of Implementation of Development Plans in order to create and compile Surabaya City development planning (Development Planning Agency, Government of Surabaya 2017).

Those plans are created to specify the aims, targets, and programs of each RWU in Surabaya City. The planning system set out in Law No. 25 of 2004 and its implementing regulations by applying a combination of top-down and bottom-up approaches, which emphasize more aspirational and participatory ways. This process is realized through a series of urban planning deliberations or musrenbang/Development Planning Forum (hereafter: DPF) at various levels from Kelurahan to the national level. DPF is attended by various stakeholders involved in urban planning, such as governments, private sectors and citizens that collectively formulate urban planning for medium and short term.

Figure 4.2 RKPD and RPJMD of Surabaya City Planning Stages
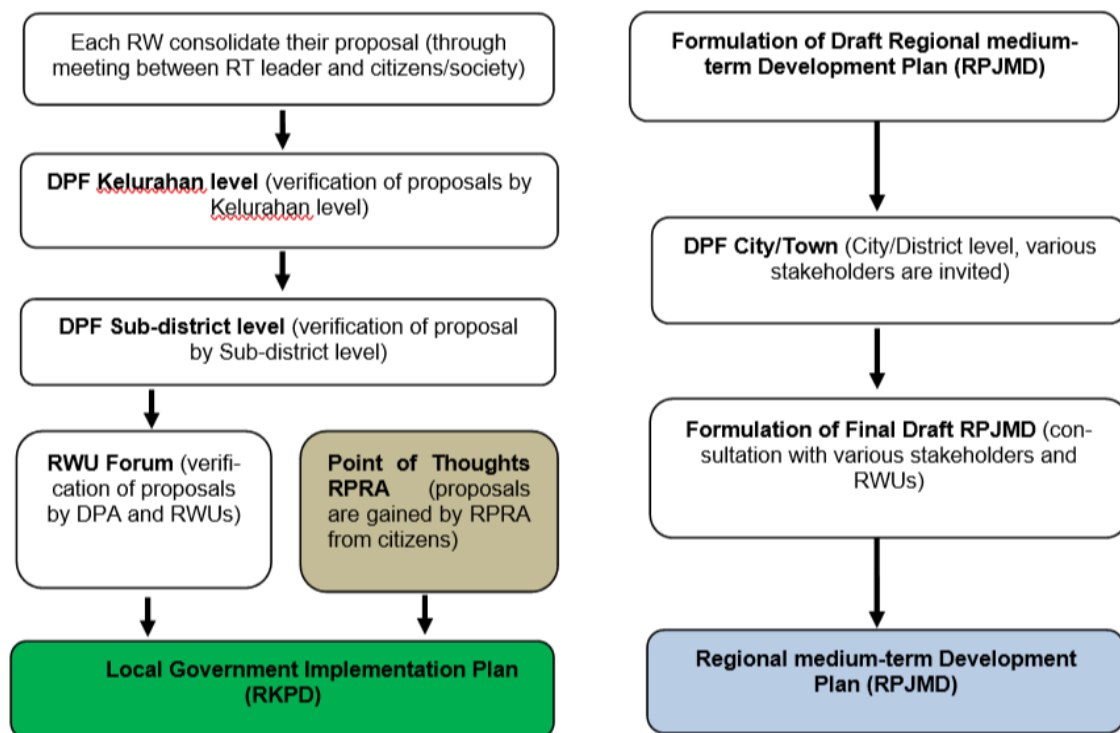
Source: Author's elaboration based on interviews DPA1, DPA2, DPA3, SDW6 in accordance with Law 25/2004

Figure 4.2 illustrates the process of creation of urban planning of Surabaya city since 2004 in accordance with National Law 25/2004. Starting from then on, the entire urban planning process must be carried out through a combination of bottom-up and top-down mechanisms by emphasizing community participation in the urban planning process. Citizen participation can be realized through participation in RT/RW[5] (neighbourhood level), DPF in kelurahan and sub-district level. The DPF becomes a government facility to involve the citizen/community in urban planning process since citizens/community can directly give their aspiration on urban planning in their neighbourhood location by attending DPF in kelurahan and sub-district levels[6]. In addition, government can get the information related the recent condition and situations in neighbourhood level from citizens through DPF.

In Indonesia, urban planning proposals at the RT/RW, kelurahan and sub-district levels are divided into two classifications; physical proposals (infrastructure and spatial) and non-physical proposals (training, education, economic and skills programs)[7]. All the proposals are verified by DPA and each specified RWU that handles the proposed field. In the field of infrastructure and spatial planning, the RWU which responsible as the implementing agencies are Cipta Karya and Spatial Planning Agency, Transportation Agency, and Housing and Public Works Agency[8]. DPA and RWUs will form a team to verify the proposals to justifiy and harmonize with the budget allocation before compiling them to RKPD[9].

The development process starts from the RW level where the citizen (individually) and/or community organization can submit their proposal to the RT/RW leader who will then submit the proposals through the Kelurahan DPF[10]. However, at this neighbourhood level of proposal gathering, there is no documentation/report about all the proposed planning from citizens/community. This then results in a high possibility that not all proposals from citizens will be followed up nor reported at the next level of deliberation, DPF Kelurahan. In order to prevent this, community organization, LPMK, has a role as the bridge between citizens/community, kelurahan and sub-district in order to support and assist citizens in consolidation and monitoring urban planning and mediating any conflict that may occur between citizens and stakeholders involved in urban planning.[11]

The next stage is kelurahan and sub-district DPF. at this level, all of the proposals gathered are discussed and classified as priority or alternative proposals. Kelurahan and sub-district DPF are attended by representatives of the DPA, RWUs, kelurahan, sub-district, LPMK, community organization, private sectors, and citizens. All community proposals discussed at the kelurahan and sub-district DPF are still carried out manually, there is no record except the report from Kelurahan and Sub-District level. This causes various proposals not

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[5] RT is a Neighbourhood Association, formed through local community deliberations. While RW is a Community Association, one higher level than RT in term of division regional administrative areas. RW is led by Lurah who is a civil-servant, while RT is led by RT's leader that is chosen through the deliberation of RT leaders as regulated by Mayor of Surabaya, Government of Surabaya (2016a).

[6] Personal interviews with DPA1, DPA2, SDW1, SDW2

[7] Since the focus of this research is infrastructure and spatial planning of Surabaya City, all of development planning proposals and mechanisms in this research refer to the infrastructure and spatial planning.

[8] Personal interviews with DPA1, DPA3, DPA5

[9] Personal interviews with DPA1, DPA2, DPA3

[10] Personal interviews with SDW1, SDW2, LPMK1, LPMK2

[11] Elaboration of personal interviews LPMK1, LPMK2 and FGD results

being discussed maximally and there is a tendency for these proposals to not even be discussed at all/ignored due to lack of time in the DPF.

> "Kelurahan officers have the authority to verify proposals from DPF that are suitable to be made as priority proposals which will later be proposed and verified again in the sub-district level DPF before adjusting them to the RWU Forum" (SDW1, personal interview).

In RWU forum, all RWUs together with DPA of Surabaya City conduct discussion and do re-verification by forming a team for verification and surveying directly to the location of designated urban planning to ensure that all of proposals from the sub-district can be realized and adjusted to the regional budget for the year[12].

These entire urban planning stages are carried out manually. All reports, meeting munites and results of deliberations in the DPF, RWU Forum and DPA are compiled in a written report.[13] This causes the urban planning process is slow due to waiting time for the completion of the DPF reports of various levels starting from the level of Kelurahan, sub-district, RWU Forum, and final compilation in DPA Surabaya City. In terms of preparing RKPD documents that contain proposals of urban planning from RW, kelurahan, to sub-district level, requires a very long and unpredictable time. This is due to the manual document preparation process by sending DPF reports from the kelurahan, sub-district, and RWU forum that takes at least 3 weeks or even more, while government regulations require that the documents should be completed at least within 2 weeks.

One important point that is highlighted from interview results of DPA, sub-districts and kelurahan officers is the absence of indicative ceilings and Standard Analysis of Expenditure (hereafter: SEA) in RWU's expenditure and budget of urban planning which causes a very significant difference in terms of determining the unit price of goods/services used in program implementation[14]. This also has an impact on the number of proposals from the community that must be reformulated/rejected because they are not in line with the budget of the government.

Furthermore, some urban planning proposals that should be the priority proposals cannot be realized because they are not in accordance with the government's budget for the year due to the absence of a clear indicator ceiling for the proposed program with a budget provided by the government in the year of the proposal.[15] The absence of SEA for unit price of goods/services is the major problem of urban planning in Surabaya City since it also causes the high possibility of mis-used budget of urban planning, that leads to low of accountability of the government involved in urban planning as well as lost of the trust of citizens.

Moreover, although the mandate of Law of development planning indicates the importance of participation of citizens, access of citizen/community to monitor and be involved in urban planning decision-making is very limited. Citizens/community can only conduct monitoring of their proposals by checking the notice boards at sub-district and kelurahan offices and/or directly consulting to the LPMK and RT/RW leaders. Transparency of urban planning in Surabaya is minimal. In addition, the communication between governments and citizen is only carried out in DPF or through community representation through LPMK and the RT/RW chairman. These problems indirectly affect to the low of citizen participation in urban planning.

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[12] Personal interviews with DPA1, DPA2, and DPA3
[13] Personal interviews with DPA1-DPA5, SDW1, and SDW2
[14] Personal interviews with DPA1-DPA5, SDW1, and SDW2
[15] Personal Interviews with DPA1, DPA2, SDW1, and SDW2

In the implementation period, sub-district invites all LPMK and community representatives to discuss the progress of the program and infrastructure development. This forum can also be used by LPMK and community representatives to voice their aspirations as well as monitoring and evaluating development progress in their neighbourhood. It should be noted that the active involvement of the citizens through this forum is difficult to be measured since the participants who attended this meeting were only community representatives.[16]

In addition, there is a tendency for work program input from the level of kelurahan, sub-district, and RWU not to be accompanied by measurable and clear strategic planning due to the translation of the vision and mission of the Surabaya City government becomes the target and objectives of the SKPD work program has been done manually by copying the targets and objectives of the work program from the previous year. This also has an impact on the difficulty of determining the success of a program in a particular location and the difficulty of determining opportunities and obstacles faced by each RWU in realizing its work program. Low synergy is found between the work plans of each RWU and citizen proposals gathered in the DPF results in inefficiency and ineffective process of monitoring and evaluating RWU work plans.

4.1.2 Urban Planning of Surabaya City after Implementation of e-planning

Implementation of e-planning by DPA of Surabaya City, which now consists of 14 systematic applications, began in stages. The first application made by the Surabaya City DPA in 2009 was e-musrenbang, which became the forerunner of ICT adaptation as an instrument for the preparation of urban planning documents in the Surabaya City. E-musrenbang development is based on the complexity of documenting citizens' proposals carried out in the DPF, low accountability in the urban planning process and as a platform of providing information from the government to the public about urban planning.[17]

After 2009, DPA continuously developed e-planning system by created 13 other applications; e-SIGIS, e-Pokkir, e-Konsistensi, e-DevPlan, e OperationalPlan, e-Deployment, e-Perkin, e-Renja, e-Data, e-Monev, and e-Survey, e-urunrembug[18] that is operated entirely and run simultaneously in 2016 for making RWU Strategic Plan and RPJMD for period 2016-2022.[19] (see also Appendix I: the flowchart of e-planning System of DPA Surabaya City).
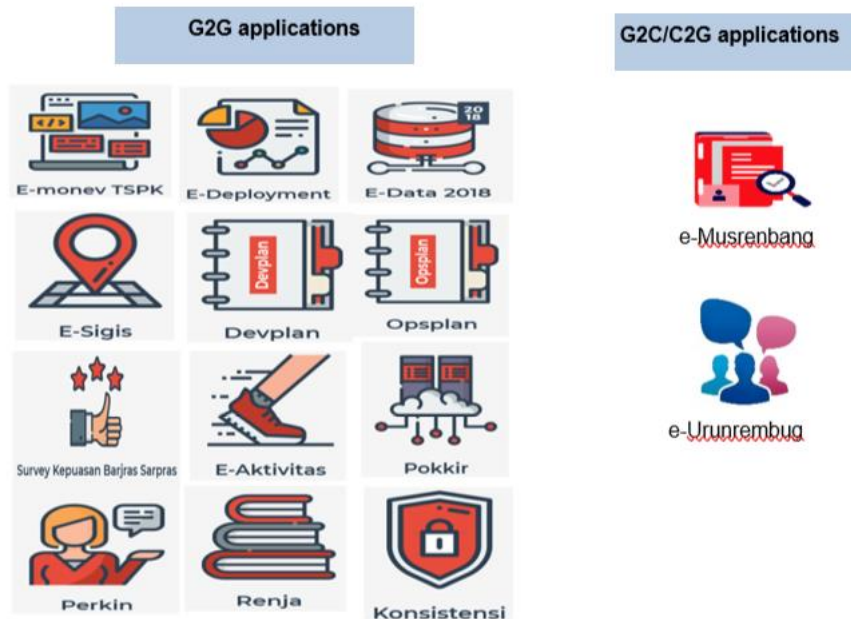
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[16] Based on observation

[17] Personal interviews with DPA1-DPA4

[18] E-urunrembug is using different web address although it is one of e-planning systems. e-urunrembug can be accessed through https://devplan.surabaya.go.id/urunrembug/index.php

[19] Personal interviews with DPA1, DPA2, DPA4

Figure 4.3 E-planning System of DPA Surabaya City

Figure 4.3 illustrates two classifications of e-planning system based on stakeholder interaction in urban planning; G2G and G2C/C2G interaction and communication. Twelve applications are used as G2G applications while e-musrenbang is used as C2G and G2C application and e-urunrembug as G2C application. The utilization of G2G applications in e-planning system help the process of adjusting the urban planning programs to be matched and aligned with the vision, mission, goals and objectives of each RWU work and strategic plan. All of RWU, sub-district and kelurahan levels have the access to these G2G applications.[20] The applications utilization is described as follows: (see also Appendix 1 Flowchart of e-planning System).

Table 4.1 Utilization of e-planning Applications

Stages of Planning based on e-planning System	Application	Function
Stage 1 Proposals and Data Collection	e-Musrenbang	Providing compilation of accepted proposals with details of region, budget, photos of location and explanation of each proposal. e-musrenbang has the function as platform of monitoring urban planning by citizens. RW has login access to e-musrenbang in order to submit citizens urban planning proposals.
	e-urunrembug	Platform of communication from citizens to government in giving their comments, suggestions, and proposals of urban planning as well as RWUs objectives and programs.
	e-Pokir	Platform for RPRA[21] to directly input RPRA's proposals obtained from the community so that the

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[20] Personal interviews with DPA1, DPA2, DPA4, SDS1

[21] RPRA (Regional People's Representative Assembly)

		proposals given do not overlap with those proposed in the DPF.
	e-Sigis	Mapping the determination of the location of development plan activities and prevent overlap in development area in the proposed planning.
Stage 2 Constructing the Development Programs	e-Konsistensi	application used by every level of RWU to measure the consistency of the program that is carried out with a plan that has been agreed in advance.
	e-DevPlan	Assisting the preparation of RKPD and determine the indicative budget ceiling (SEA) derived from each RWU Work Plan.
	e-OperationalPlan (OpsPlan)	is used to compile steps for implementing each RWU's activity programme.
	e-Deployment	Platform to develop indicators, objectives, program objectives based on a SWOT analysis which the output is holistically integrated with RPJMD.
Stage 3 Budgeting and RWU Agreement	e-Perkin	Facilitating work agreements of RWU top to bottom levels of officers.
	e-Renja	is used for the RWU work plan inventory to be in line with the Surabaya City Development Plan.
Stage 4 Assessment Development Programs and RWU Performance	e-Data	Platform of the information system for collecting data on the work plans of each RWU to be in accordance with the main functions and indicator of activities.
	e-Monev	Recording the process of monitoring and evaluating RWU activities in development programs. All of the RWUs will fill the indicators in e-Monev to explain their progress and evaluation of each programs that later will be evaluated by DPA. If there are any irregularities of RWU explanation, DPA will directly notify RWU through e-Monev system to be repaired and resubmitted.
	e-Survey	is used to determine user satisfaction and who obtain goods and services in the implementation process of urban planning.
	e-Performance/e-Aktivitas	Platform to assess the performance of RWUs, DPA and its civil servants based on their activities.

Source: Author's elaboration based on (DPA1-DPA5, personal interviews)

In general, there is no difference in the planning stages of development before and after the implementation of e-planning in the urban planning process. All of processes from gathering proposals from RT/RW, kelurahan DPF,sSub-district DPF, RWU Forum until the final compilation in DPA are still happening as per the mandate of Law 25/2004. 12 applications of e-planning (G2G applications) are used to facilitate recording process of urban planning from different RWUs and synchronizing all the planning of development in accordance with the goals, objectives, and indicators of activities/programs of RWUs by ensuring alignment between the proposed and the work program as well as the vision and mission outlined in RKPD, RPJMD, Renstra Daerah, and Renja Daerah. E-planning aims to create synchronization and accountable of urban planning.[22]

Implementation of e-musrenbang of Surabaya City DPA in 2009 marked the changing of urban planning process of Surabaya City. E-musrenbang is an urban planning system that has been created by DPA of Surabaya City to prepare RKPD, where the proposal gathering from the citizens is not done manually but facilitated by an online application system which can be accessed on the website musrenbang.surabaya.go.id.

In the e-musrenbang system managed by DPA Surabaya City, the process of proposals collection process can start at the RW level. Each RW leader has access to login in e-musrenbang. Each RW is obliged to provide main (priority) proposals and backup proposals and

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[22] Personal interviews with DPA1-DPA5

inputting those proposals directly in the e-musrenbang. Then, kelurahan level checks the proposed planning from RW through e-musrenbang with Kelurahan login access. Kelurahan level has the authority to map proposals from RW in accordance with the description and purposes which are checked at the sub-district level. Sub-district level also has the authority to reject or approve the proposals that are already compiled and agreed by kelurahan. If it has been approved by the sub-district, then the proposal can be proceeded to the RWU which will then conduct a survey of the approved proposals together with DPA[23].

Although access to e-musrenbang is only via RW leader as a representative of the community in submitting urban planning proposals, citizens are allowed to ask the RW leader for login access in order to put their proposal directly in e-musrenbang.[24] Citizens and the community can also directly obtain information and conduct supervision regarding accepted proposals of urban planning that they have submitted in the DPF.

Furthermore, community participation in submitting proposals directly can be done through e-urunrembug by accessing devplan.surabaya.go.id/urunrembug/. This website is used by Surabaya City DPA in 2016 and 2017 to provide opportunities for the people of Surabaya to give input on urban planning program in order to make RPJMD for 2016-2022 period and RKPD in 2017 and 2018. In 2018, DPA stated that the application for recollection had already no longer been used and proposals can be given through the DPF and monitoring of the DPF proposal can be done by accessing e-musrenbang[25].

E-planning adaptation basically does not change the pattern of the stages of urban planning in the city of Surabaya except in several aspects;

First, accelerating the process of urban planning, e-planning has an impact on the acceleration of the urban planning compilation process from the lowest RW level, to the highest DPA. Before e-planning is implemented, the process of drafting the development plan took long duration (range between 1-3 months) to be completed by all levels of the governments involved in urban planning. After the implementation of e-planning, all of the processes start from proposal and data collection, constructing the development programs, budgeting and RWU agreement to the final process of assessment development programs and RWU's performance, can be completed in a shorter period of time (less than 1 month).

Second, well-documented urban planning process, the documentation of integrated urban planning from upstream to downstream improved since all of data from the first process to the last stage of urban planning are saved and collected in e-planning system. *Third, availability of citizens participation platform,* e-planning opens wider opportunities for the community to be able to actively participate in urban planning and evaluation and monitoring processes. *Fourth, availability of SEA,* has impact on increasing accountable of government budgeting process due to all of budget ceiling of goods and services are presented in the e-planning system that can be used by government to harmonize the unit goods/services prices in all level of governments.

4.2   Impact of e-Planning on Organizational Management

Implementation e-planning by DPA of Surabaya City in the urban planning process has a very significant impact not only on organizational management of DPA itself, but also RWU, sub-district, and kelurahan level. The impacts of e-planning implementation on DPA

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[23] Personal interviews with DPA1-DPA5
[24] Personal interviews with SDW2
[25] Personal interviews with DPA1-DPA4

Surabaya City organizational management are evaluated by using combination indicators as defined by (Sivarajah et al. 2015; and Terry 1986) as following:

4.2.1 Operational Function

Culture and Change

Since the implementation of e-planning system in 2009 until now, the DPA, RWU involved in infrastructure and spatial planning, sub-district, and kelurahan, gradually changed their organizational culture in order to adapt e-planning. It can be seen through the change of closed government to be an open government to adopt technology as an instrument of communication between government agencies.

This changing is also can be evaluated from how DPA, RWU, sub-district and kelurahan accepted ICT implementation that directly changed the pattern of working from manually to digitized-documentation. As (Parycek and Sachs 2010; Lathrop and Duma 2010) state, it needs to change the culture of the organization from closed government to be an open government and working mechanisms as the way of utilization ICT in government organization. Open government also means the readiness of government to provide information to the public. Through e-musrenbang and e-urunrembug, the government can provide access to the citizens in order to monitor urban planning in their neighbourhood area and assess whether the government realized their proposals.

Despite these changes, it is recognized that e-planning implementation is not intended to change the culture of organization. The ICT adaptation is merely seen as requirement to current development which is characterised by modernization and technologization. This is also agreed by DPA and sub-districts officers, one of whom stated:

> "changing that is happened in organization to be able to accept ICT as an instrument of organizational management is due to the effect modernization that requires the adaptation of ICT in the government organizations" (SDW3, personal interview).

Furthermore, it can be concluded on culture and change in organization, ICT implementation merely changed the working mechanisms by utilization of ICT that implies a change from closed government to open government, not all the culture of organization.

Knowledge Management

Integrated process of compiling development process from proposals and data collection until assessment development programs and RWU performance through G2G and G2C/C2G applications of e-planning, indicates the improvement of information flow and knowledge management from various stakeholders involved in infrastructure and spatial planning. (Traunmüller 2010; Girard and Girard 2015) state that improving knowledge management in organization as well as inter-organizational can be achieved through implementation of ICT. Thus, we can reflect this statement on e-planning implementation to assist the management of urban planning which starts from the lowest level, neighbourhood level (RW), kelurahan, sub-district, RWU and DPA and coordination between them.

Comparing the urban planning process of Surabaya City before and after implementation of e-planning, it can be seen that knowledge management is one of the aspects that has experienced considerable changes, particularly in information sharing and integration between government organizations involved in urban planning. Before e-planning adaptation, the absence of system that integrates the process of transferring information in the preparation of urban planning, start from the process of gathering proposals, developing programs,

budgeting arrangements to monitoring and evaluation, result in unclear and unsynchronized forms of the planning, implementation and evaluation processes. Thus, these cause the difficulty of measuring the success of urban planning program because it is not equipped with comprehensive indicators, targets, and program objectives for each RWU involved. This also has an impact on the discrepancy between objective in RPJMD and RKPD.

E-planning then is used as the solution of these problems. Since its implementation, sharing knowledge and information in internal organization and inter-organizations are improved. In internal organization of DPA, knowledge management runs faster and more efficiently across departments, where each department can easily access the information needed in the system. Meanwhile in the inter-organizational level, the integration of the whole process of planning, implementation and monitoring in urban planning, have an impact on the higher quality of knowledge management, that results in harmonization of the process of urban planning in all governments in accordance with the derived indicators, objectives and targets of urban planning regulated in the RPJMD, Renstra and Renja RWU.

4.2.2 Planning and Decision Function

Policy Alignment and Governance

One of the impacts of e-planning implementation is a need for aligning policy in order to legalize e-planning utilization and its function as the instrument of integrating and compiling urban planning. Thus, mayor of Surabaya ratified Regulation of The Mayor Surabaya Number 32 of 2016 about Procedures for The Development of Planning, Monitoring, and Evaluation of The Medium-Term Development Plan in Surabaya City 2016-2021 with aims to indicate e-planning as the legal instrument in integrating urban planning in Surabaya City 2021 (Mayor of Surabaya, Government of Surabaya 2016b).

> "Government regulations are the things that underlie the procedures for the preparation of urban planning. Without these regulations, each stakeholder cannot carry out their functions properly. This also implies to e-planning utilization in urban planning" (SDA1, personal interview).

The importance of policy alignment is also stated by (Meijer and Thaens 2010), in order to prevent the risks that might be happened after e-government implementation, such as mis-appropriation of information for private gain since all of government's data are collected by a system that can be tracked and used through illegal ways. Thus, policy alignment is needed to protect the circulation of information in IT system.

Human Capital

Human capital is considering as one of the notable aspects of implementation e-planning. ICT adaptation process in organizations requires investment in human resources who have the capability to operate and develop ICT applications as organizational management instruments (Mintz 2007). Based on interviews conducted with DPA, ICT technicians/programmers employed by DPA are contract employees (possibly extended a year contract) with educational background in Computer Science or Information Engineering from various universities in Surabaya, such as ITS and Airlangga University[26].

> "One of the underlying efforts of DPA in choosing to hire contract employees to develop e-planning applications rather than to use IT companies/developers was to prevent misuse of government-owned information that should be confidential and to

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[26] Personal interview with DPA4

enhance the ability and coordination of DPA staffs in e-planning development. We also asked for advices from IT experts such as the university lecturers of Computer Science and Information Engineering if we have some troubles in e-planning development" (DPA4, personal interview).

Human capital in organization cannot be separated from ICT adaptation, since its adaptation needs IT knowledge that is mostly not owned by government staffs. Moreover, training and workshops are needed to increase the ability of the staffs in operating ICT adaptation. Thus, human capital is not only merely about hiring and employing staffs, but also improving staffs' capacity in operating ICT system. The investment in human capital then results in the increasing of expenditure of DPA.

4.2.3 Communication and Interorganisational Function

Collaboration and Communication

A major impact of e-planning implementation can be assessed through the changing of communication of government organizations as well as from organization to the citizen. *First,* implementation of e-planning opens wider opportunities for government communication that have been very limited in the urban planning process. This communication can be seen with the implementation of 14 applications that are used in the communication between G2G, G2C, and C2G. *Second,* implementation of e-planning has an impact on changes in interaction and communication within DPA Surabaya City and also with external DPA such as interaction and communication with RWUs, sub-districts, kelurahan, RW and citizens. This is as stated by the DPA, that the change can be seen from how the coordination between different departments in the DPA through direct face-to-face communication and coordination meetings conducted is lessened by the process of inputting data in the e-planning system. Each department within the DPA can directly access certain data according to the needs of each department as well as access cross-departmental data without the need to request written reports from each different department. It also has an impact on the synergy of planning of each department within the DPA.[27]

Third, e-planning brought impact in improvement of process of interaction, coordination and communication between DPA and every RWU involved in the urban planning process. Interaction and communication patterns that occur between DPA and RWU before the e-planning implementation is carried out through DPF, RWU Forum, and the process of verification urban planning proposals through the formation of a joint team. DPA and RWU oftentimes have to meet again to re-discuss various unsynchronised of proposed urban planning. With e-planning, the face-to-face coordination and meetings that are often held by DPA and RWUs are reduced because the data is already available in the e-planning system.

However, DPA also stated that, e-planning might reduce face-to-face meeting frequency rather than before, but at the same time, DPA implied the importance of face-to-face meeting as the most efficient way to discuss sensitive issues and as the mechanism to clarify misunderstanding that might be happened in urban planning process.[28] This is in line with the statement of (Gaspar and Glaeser 1998; Mokhtarian and Salomon 2002) that explained IT implementation is merely a complementary instrument of communication rather than to replace the face-to-face communication.

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[27] Personal interviews with DPA1, DPA2, DPA4
[28] Personal interviews with DPA3, DPA5

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Face-to-face meeting is not only seen as a way of communication but is also indicative of the culture of society. In Indonesia, face-to-face meetings are used as the way to build kinship relations between people as well as organizations. Furthermore, although ICT (e-planning) could reduce its frequency, ICT utilization is considered could not abolish face-to-face meeting in urban planning. Face-to-face meetings are still be the best option for G2G and G2C/C2G communication in urban planning. This also can be seen in the process of Validation Infrastructure Meeting of Wonokromo Sub-district, where all of participants discussed and shared their concerns about condition of their neighbourhood. They conveyed their opinion better through face-to-face meeting since it is created kinship relation and understanding between citizens and governments.[29] Despite of the significant effect of ICT in term of time-space in urban planning process, geographic aspect, that contains culture and norms of different society, will continue playing important role.

DPA also recognizes that the process of communication and interaction is more efficient with e-planning. For instance, at the time of DPF and RWU Forum, all data needed in the discussion of urban planning are synchronized according to the goals, objectives and indicators of each RWU.[30] This leads to effective and efficient time-used in the meetings, that initially take up to 3-5 days, can be completed in just a day or even less. DPA and RWU can use their time more effectively to implement the program rather than to spend time in coordination meetings which usually take several days.

Through e-planning as well, the verification process of proposals which usually takes a long time due to the need for synergizing of reports between each RWU and DPA can now run faster through applications where each RWU can send the results of field verification into the e-planning application without the need to meet directly with DPA. Although several things are recognized, there is still a need for a direct meeting between DPA and RWUs in order to discuss matters that are complex and sensitive.

Although communication has been impacted after implementation of e-planning, it is difficult to assess the collaboration as the direct impact of e-planning. Collaboration is only can be assessed through knowledge management inter-organizational in the compilation urban planning documents. Meanwhile the collaboration between departments in internal organizations is difficult to evaluate and it is difficult to distinguish whether there is collaboration in internal organization after implementation e-planning since each department focuses only on their task description.

Organisational Learning

Organisational learning is basically closely related to knowledge management and collaboration. Improving knowledge management will have an impact on the potential for increased opportunities for organisational learning among the staffs. Process of sharing information in internal organisation will lead to social learning among its staffs (Baxter et al 2010). Moreover, organisational learning has the same characteristic of collaboration, it is difficult to be assessed unless there is a specific study that explains how the members of organisation intend to use the shared-information as the learning process of tasks described for other departments. Although there is no proof in this study to examine whether e-planning is used as the source of organisational learning, e-planning implementation created a possibility that e-planning can be used as the instrument of organisational learning when the staffs used e-planning to learn about other departments job description.

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[29] Based on observation
[30] Personal interviews with DPA1, DPA2, DPA4, SDS1

4.2.4 Monitoring and Controlling Function

Transparency and Accountability

Due to its changing to be an open government, providing information to the public about urban planning can be achieved by DPA through e-musrenbang. This leads to the increasing transparency and accountability of DPA as stated by the Audit Board of the Republic of Indonesia and Corruption Eradication Commission, which shows that the implementation of e-planning affects the increasing of transparency and accountability of government as well as reducing the possibility misuse of budgets by governments in urban planning process (Research and Development Planning Department, Ministry of Home Affairs 2016). Before the implementation of e-planning, there were only limited ways for citizens to assess government performance in urban planning management that caused low accountability and transparency of government performance in citizens' view. This also implies lack of trust of citizen to the government.

Furthermore, SEA in e-planning system that has been integrated in the stage constructing the development programs, is proven a success in preventing the misuse of budgets and provide accurate unit price of goods and services in procurement process. Since its implementation success, e-Planning of DPA Surabaya City became a pilot of e-planning adaptation of DPA in other provinces of Indonesia. In line with the statement of (Boston et al., 1996; Bertot et al. 2010) implementation of administrative reforms will result in more efficient public services, increased transparency, and accountability which will lead to improved public services and better performance. Besides increasing transparency and accountability of government, the implementation of e-planning improves public services, that has positive effects on the increasing of citizens' trust to the government in urban planning.

4.3   Impact of e-Planning on Citizen Empowerment

Implementation of e-planning particularly e-musrenbang and e-urunrembug are representing the access of citizen to the urban planning. Considering the communication and interaction pattern of ICT adaptation, e-musrenbang provides G2C and e-urunrembug as the C2G application. In e-urunrembug that is used in 2016 and 2017, citizens are given access to directly participate in urban planning process by uploading development proposals to the website using their national identity number as Surabaya City residents.

In the period of two years implementation, e-urunrembug is a recognized and effective medium used to voice citizens aspirations although the lack of socialisation of this application caused minimum of participation of all segments of Surabaya City residents. This can be seen from the number of participants who inputted their proposals in each program of RWU and development plans in e-urunrembug are below 200 participants ('e-urunrembug', n.d.). However, e-urunrembug is the only one platform that provides two ways communication between citizens and government (DPA) directly. In addition, through e-urunrembug, the direct and recorded citizen participation in urban planning process can be measured.

Applying the classification of e-participation by (United Nations, as cited in Kassen 2017), e-urunrembug can be classified as e-consultation and e-decision making. E-urunrembug as the e-consultation refers to its function in as the platform to input proposals in deliberation process. While as e-decision making, e-urunrembug fits into this category since the proposals submitted into the website will be evaluated by DPA whether it can be prioritized and implemented as the urban planning program. Thus, it can be concluded that participation

of citizens in decision-making through e-planning is limited since the role of citizens is only to give the proposals, while the final decision is decided by the governments.

Furthermore, an application that is still being used as communication and information source of government to reach citizens is e-musrenbang. Since 2009, e-musrenbang is used as a platform for information about urban planning from government (DPA) to the citizens. Through e-musrenbang, access of citizen/community in order to monitor urban planning proposals is opened.[31] Citizen/community can conduct monitoring of their proposals by looking at information about the result of DPF in the application.

Giving access through e-government to the citizens is accepted as a form of empowerment in order to provide information about public services and how the government works (Piotrowski and Ryzin 2007; Aladalah et al. 2015). Through this access to e-musrenbang, people/citizens feel more empowered rather than before because they know exactly what happened with their urban planning proposal status, when and how it will be implemented as well as to monitor the responsibility of government to the citizens[32]. Furthermore, the citizens can be more proactive and involve in development process because they know their proposals are not neglected.[33]

However, in terms of representation and the ability to capture aspirations, representation in e-musrenbang access has not been sufficient to guarantee that aspirations from below are conveyed or are part of decision making at a later stage[34]. It needs to be assessed to what extent community representatives represent their groups and have the strength and ability to express their aspirations with the support of a conducive atmosphere. In the process of gathering aspirations, opportunities to convey aspirations have not yet been given widely to the public. Moreover, it crucial to involve citizens in urban planning process since citizens are owning information related socio-economic condition, community dynamic, prospective location, infrastructure and land-use that mostly tacit knowledge as stated by (Mundula 2019: 3).

In addition, changes in the government system and improvements to the mechanism and process for selecting proposals through ICT such as e-musrenbang, do not seem to reduce the chances of irregularities in urban planning. One of the irregularities refers to the elite capture that still occurs in every DPF process. In this case, elite capture is understood as an attitude or action taken by a person or group of people to influence policy making or decisions so that the results benefit themselves. This can be seen when governments prioritize the proposals of infrastructure planning from private sectors in their neighbourhood rather than citizen's proposals[35]. Thus, the LPMK as the community organization plays the role to prevent this phenomenon, since the government in Kelurahan and Sub-district levels need the approval of LPMK in the reports and minute meetings of DPF in order to finalize the proposals of urban planning.

Besides, it is recognized that the existence of irregularities in DPF process is difficult to be identified. For example, even though the proposal originates from RW and Kelurahan levels, the sub-district is the one which provides final validation of the proposals. There are

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[31] Based on FGD result
[32] Based on FGD result (all of the participants stated the same opinion)
[33] Based on FGD result
[34] Based on FGD result
[35] Personal interviews with LPMK1 and LPMK2

indications that many proposals from RW and Kelurahan levels are not validated by Sub-District level even though they are urgently needed by the community[36].

Although in spite of various deficiencies that exist, e-musrenbang and e-urunrembug are categorised as innovation in the urban planning system in Indonesia, since those are used platform of communication between citizens and the government in urban planning. Systems that are based on transparency and broad community participation have been able to summarize and simplify the process of gathering citizens' proposals in the urban planning process so far.

In order to analyse in what extent impacts of implementation of e-planning towards citizen empowerment, the Wheel of Participation of (Davidson 1998) is used as analytical framework. Davidson (1998) divides the stages of participation into four categories; information, consultation, participation, and empowerment. The comprehensive analysis by using this framework can be seen as follows:

Table 4.2 Comparison Degree of Citizen Empowerment

Degree of Citizen Empowerment	Before e-Planning	After e-Planning
Information	*Limited Information;* limited access to citizen in monitoring and evaluating the proposed urban planning where the citizen can only get the information through directly attending the DPF or kelurahan/sub-district offices. In addition, all of the information are basically only what government thinks should be provided to the citizens, but not information about what citizens need.	*Good Quality Information;* opening the new platform of information through e-musrenbang. The information provided by government consists of explanation about budget, regions, photos of urban planning locations and how planning/programs will be conducted.
Consultation	*Genuine consultation;* even before the implementation of e-planning, government tried to create a space/forum for consulting urban planning and problems in neighbourhood through agencies such as RT, RW, and LPMK. Important to note is that the consultation is mostly only happened between those agencies without the assessment of whether citizens gained the information of deliberation results.	*Genuine consultation;* same with the process of consultation before the implementation of e-planning, government tried to create a space/forum for consulting urban planning and problems in neighbourhoods through agencies such as RT, RW, and LPMK. However, the improving can be seen by more access being opened for citizens through e-planning to gain more knowledge related with urban planning in their neighbourhood that indirectly affects to the consultation process.
Participation	*Effective advisory body;* government invited community organizations, representatives, and LPMK to discuss about urban planning.	*Effective advisory body;* government invited community organizations, representatives, and LPMK to discuss about urban planning. One of the notable improvements is that RW level has access to input the proposals of urban planning directly to the e-musrenbang by using RW login, that result in improving capacity and efficiency of community agency.
	Partnership; together with community organizations, some programs of urban planning in small scale are created in neighbourhood areas.	*Partnership;* together with community organizations, some programs of urban planning in small scale are created in neighbourhood area.
Empowerment	*Delegated Control;* involvement of citizens in decision-making is delegated through agencies such as RW and LPMK. There is limited room for citizens	*Independent Control;* citizens gained control (access) to directly be involved in urban planning through e-urunrembug by directly inputting their comments and proposals in

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[36] Personal interview with LPMK2

	to directly be involved in decision-making process unless through those agencies.	Renstra and the programs of RWU, RKPD and RPJMD. Although an important note should be considered, not all of citizens gained this power to access e-urunrembug. Some groups that lack e-literacy are excluded from this decision-making process.[37]

Source: Author's elaboration based on FGD and Interviews LPMK1 and LPMK2

Based on the above analysis, it can be concluded that ICT has relative impacts on the empowerment of citizens. This change can be seen from how citizens have more access to be involved in the decision-making process through e-urunrembug, to be able to participate in providing proposals for urban planning. Citizens in the classification of empowerment, which were originally only at the level of delegated control, turn into independent control when citizens are given more access to give their thoughts, comments and opinion about urban planning. However, it is visible that citizens involvement is only at the stage of providing urban planning input. At the end, it is the government that ultimately has the power to decide urban planning process. Thus, it can be concluded that the impact of ICT on citizen empowerment is merely only by giving more access to citizens in proposals gathering process and access to the information. Furthermore, the important drawback of ICT implementation is that not all of the levels of citizens can benefit from the implementation of ICT especially in urban planning. (Martins et al. 2017; Janssen et al. 2012) also stated that the lack of technology literacy and difficult access to the internet connection are the crucial barriers of ICT implementation. The exclusion of some groups such as people who lack literacy of technology and who do not access to the internet should be addressed and solved by government. Otherwise, the mandate of participatory urban planning could not be achieved.

4.4 Impact of e-Planning on Information Asymmetry and Transaction Costs

4.4.1 Information Asymmetry

Providing access to information to the community/citizens is also considered as one way to reduce information asymmetry and transaction costs in urban planning, especially infrastructure and spatial development. Before the implementation of e-planning, information of urban planning process was maintained only by government authorities where governments only provided limited information and access to communication to the public. This condition leads to the occurrence of information asymmetry. Information asymmetry is caused by the presence of state apparatuses, government employees and private sectors that monopolize information used for their own benefits (Guliyeva and Rzayeva 2018: 201). Thus, information asymmetry that happened in urban planning will directly cause the possibility of corruption and mis-used budget.

Before implementation of e-planning, information asymmetry was high due to limited information provided by government and limited access to monitor planning progress that

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[37] Based on FGD result (all of the participants of FGD agreed about the tendency of exclusion of some groups of citizens that have not capability to access e-planning (e-urunrembug and e-musrenbang) is one of the drawbacks of ICT implementation in term of citizens empowerment. Furthermore, the participants also illustrated those groups such as the elderly (above 50 years old), people who cannot use technology (illiterate to the technology) and people who cannot access internet because of its costs and signal problems.

leads to adverse selection and moral hazard by government apparatuses (Scott 2015). Furthermore, there is no instrument to determine the price of goods/services leads to increasing adverse selection and moral hazard by government apparatuses and developers. In addition, there is no check and balance in urban planning because of limited availability of information for citizens to be involved in the urban planning mechanisms, especially in the monitoring and evaluation of urban planning.

After the implementation of e-planning, through e-musrenbang and e-urunrembug, citizens gained knowledge and information about urban planning as much as other stakeholders. Through e-musrenbang, citizens gained more information related the urban planning programs' description, budget and location. This leads to effective monitoring and evaluation of the development programs progress and how government spent the budget of urban planning. Thus, adaptation of ICT through e-musrenbang and e-urunrembug result in reducing information asymmetry and results in preventing occurrence of moral hazard. Vice versa, reducing information asymmetry indirectly contributes to the increasing transparency and accountability of government as well as wider communication platform for citizens that leads to the improvement of organization management performance.

4.4.2 Transaction Costs

While adaptation of e-planning system through e-musrenbang and e-urunrembug affect to reducing information asymmetry, it also directly affects to reducing transaction costs. Based on definitions and classification of transaction costs provided by (Mburu et al. 2003; Guliyeva and Rzayeva 2018; Coggan et al. 2013; Coggan et al. 2015) as stated in chapter 2, reducing transaction costs that is experienced by citizens and governments as the effect of implementation of e-planning can be accessed through several indicators as following:

Searching Information Costs

The most notable reducing transaction costs is experienced by citizens after implementation e-planning can be assessed into two classifications: non-financial costs; such as efforts and time-spent and financial costs; such as expenses incurred in order to gain the information of urban planning. The result of DPF deliberation was difficult to monitor due to limited platform available except by looking notice board in kelurahan/sub-district level. After implementation of e-planning, citizens can directly get the information of urban planning in their neighbourhood area through accessing e-musrenbang without spending their time and money for travelling directly to the kelurahan/sub-district offices.

Participation Costs

Before the implementation of e-planning, all of the citizens should use their time to involve in DPF that is usually held in kelurahan/sub-district office, in order to voice their urban planning proposal. Despite of getting money from working, taking rest, or do other activities, they need to use their time to attend DPF which usually takes more than a day. Through e-urunrembug, citizens who gained delegated control of power can directly involve in decision-making process by giving their comments and proposals of RWU programs, RKPD and RPJMD.
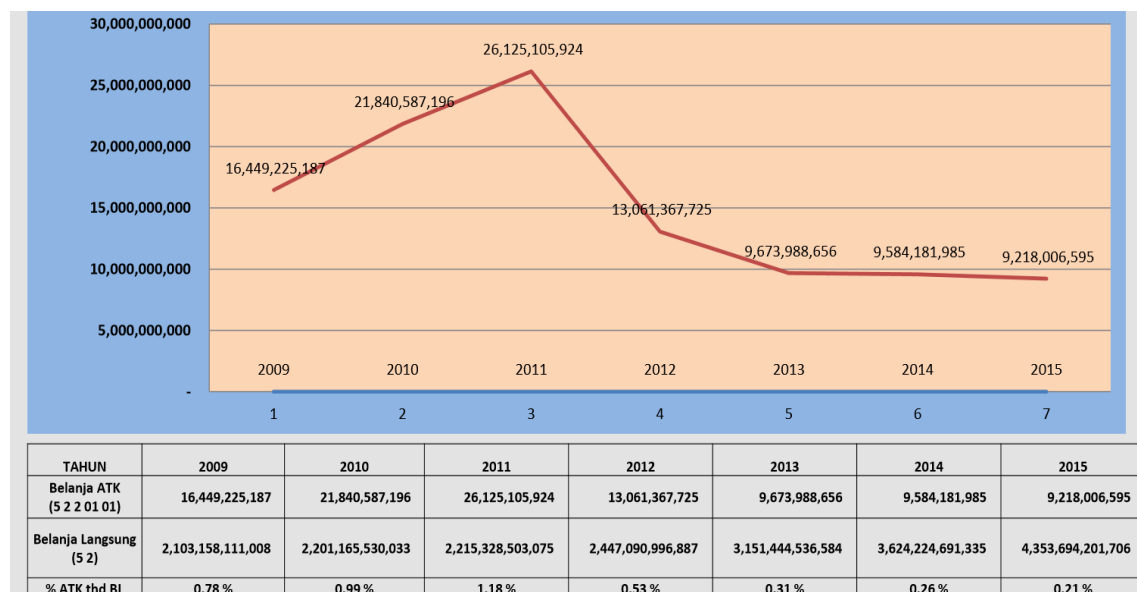
Supervision (monitoring) Costs

As stated by DPA, before the process of implementation e-planning, they often do re-verification of urban planning proposals and monitoring progress of the programs due to

unsynchronized-data available in kelurahan, sub-district, and RWU.[38] The costs of time spent and cost for hiring supervisors are significantly playing roles in this process. After e-planning implementation, the possibility to do re-verification by DPA is lower since all of data are integrated since the very first stage of urban planning process. Furthermore, the availability of SEA prevents mis-used budget of urban planning since all of governments involved know in detail of the goods/services ceiling budget that previously owned by private sectors (developers/planners). Availability of SEA is significantly reducing supervision costs and at the same time reducing the opportunity of moral hazard and adverse selection of government apparatuses and developers/planners, since all of the price of goods/services are already analysed and integrated in the system of e-planning. Thus, at the same time, e-planning contributes to reducing information asymmetry between governments and planners.

Administration (Bureaucracy Costs)

Reducing administration costs spent by government can be evaluated through reducing time spent and expenses to hold meetings such as DPFs, collecting and printing documents of urban planning. DPA stated that after e-planning adaptation, the frequency of meetings that usually happened for several days, collecting and printing reports significantly reduced since all of data are available in the system.[39] Thus, this leads to the reducing administration costs. In 2017, Department of Revenue and Financial Management, Ministry of Finance of Indonesia calculated the saving on administration expenditures of Surabaya government after e-government adaptation that can be seen through figure 4.4 as following:

Figure 4.4 Savings on Administration Expenditures of Surabaya Government

TAHUN	2009	2010	2011	2012	2013	2014	2015
Belanja ATK (5 2 2 01 01)	16,449,225,187	21,840,587,196	26,125,105,924	13,061,367,725	9,673,988,656	9,584,181,985	9,218,006,595
Belanja Langsung (5 2)	2,103,158,111,008	2,201,165,530,033	2,215,328,503,075	2,447,090,996,887	3,151,444,536,584	3,624,224,691,335	4,353,694,201,706
% ATK thd BL	0.78 %	0.99 %	1.18 %	0.53 %	0.31 %	0.26 %	0.21 %

Source: (Department of Revenue and Financial Management, Ministry of Finance of Indonesia 2017)

Although from this figure, it can be seen reduced-expenditure on administration costs and also at the same time reducing transaction costs (from explanation above) after e-government was implemented, it needs to evaluate whether ICT really reduce the expenditure or conversely increasing the expenditure of government, especially in urban planning. ICT

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[38] Personal interview with SDW1
[39] Personal interview with DPA1, DPA2

implementation also requires additional expenditures such as costs of developing and maintenance ICT applications, software and computers procurement, hiring IT experts, IT trainings for government staffs, cost spent in internet connection, socialisation costs of ICT utilizations etc. that need to be assessed further in order to compare whether ICT implementation really provides costs and expenditure efficiency.

Chapter 5 Conclusions and Policy Recommendations

5.1   Conclusions

ICT implementation in governance is often seen as a panacea in overcoming all government problems in providing public services. This reflects by how governments applied e-government as the instrument to solve all of administration problems as well as to achieve better performance of government organization. As one of the more advanced cities that relies on its economic activities, the DPA of Surabaya City aims to solve the problems in its urban planning that was characterized as low transparency, accountability, inconsistency and inefficient of governments in managing urban planning through creating e-planning system in 2009. This study then intends to analyse how the actual impacts of ICT (e-planning) implementation on organizational management and citizen empowerment in infrastructure and spatial planning.

The first sub-question of this research asks about the description and explanation of e-planning system as the ICT that want to be assessed in this research. E-planning is an ICT system that consists of 14 applications which are divided into two nature of communication ways; G2G with 12 applications and G2C/C2G with 2 applications (e-musrenbang and e-urunrembug). E-planning has a function to synchronize and integrate all of urban planning process; from proposals and data collection, constructing the development programs, budgeting and RWU agreement and assessment development programs and RWU performance.

The second research sub-question on the comparison of urban planning of Surabaya before and after implementation of e-planning, based on the analysis of findings that is presented, basically, urban planning process and stages of Surabaya City before and after implementation of e-planning system are same. Both reflect and follow the process of urban planning based on Law 25/2004. Before implementation of e-planning, the process of urban planning of Surabaya reflects the long duration of compilation data and documents, minimal information provided from government to the citizen, unsynchronized indicators, objective and goals of development programs, and limited participation and access of citizen to the urban planning process. The significant impact of implementation e-planning can be seen through the changing of pattern to propose urban planning, the integration and synchronized of all of urban planning process from kelurahan, sub-district, RWU and DPA, the times needed for data and documents compilation are shorter that leads to the accelerating urban planning process, more access and platforms are created for citizens to involve directly in urban planning process either it is proposals gathering or monitoring development programs and availability of SEA that is integrated in the system that result in synchronization of goods/services ceiling budget in all levels of governments.

In term of organizational management of DPA before and after e-planning adaptation, that has been posed as the third research question, organizational management of DPA before e-planning adaptation is characterised as closed government, low of transparency and accountability, low integration of inter-organization knowledge management, and communication via face-to-face interaction that tends to take longer time and inefficient in managing urban planning process. After the implementation of e-planning, the organizational management of DPA significantly improved. This can be seen through the changing of closed government to be an open government, high accountability and transparency, integration and synchronized knowledge management within DPA and inter-organizational that involved in urban planning, improving the communication of DPA and stakeholders involved, human

capital investment as the way of ICT adaptation, and the needs to align policy and governance in order to adapt e-planning system to prevent the risks that might be happened.

In term of comparing citizens empowerment before and after e-planning, assessment of citizen empowerment can be seen as follows; *before:* citizen empowerment is merely in level of limited information, genuine consultation with limited access of knowledge, effective advisory body, partnership and delegated control. While *after* implementation of e-planning: citizen empowerment consists of degrees; good quality information, genuine consultation with broad access of knowledge, effective advisory body with more access of RW as neighbourhood agency in development process, partnership and independent control.

Notable impacts of giving access of information to the citizens are reducing information asymmetry and transaction costs. E-planning brought impact in reducing information asymmetry that have happened because of monopolized information by governments. The effect of this information asymmetry in urban planning is moral hazard where the government used the information for their own benefits/interests such as mis-used budget and corruption. Availability of SEA and opening access to the proposals and budgeting to the citizens directly result of reducing information asymmetry and increasing the transparency of government. While information asymmetry also affects to the increasing transaction costs. Implementation of e-planning affects on reducing transaction costs in urban planning is experienced by citizens and governments such as reducing the times spent and costs in searching and gaining of information, bureaucracy costs, monitoring costs and costs of involvement in decision-making in urban planning. Opening the access of information through life time application reduces the transaction costs that might be spent by the citizens to get the information and involve in urban planning as well as reduced bureaucracy costs for government. Although ICT implementation results in reducing transaction costs, this also leads to the incurrence of additional costs such as costs of hiring IT, IT trainings for the staffs, costs of system maintenance, etc. that need to be evaluated and counted in order to realize the implication of ICT towards reducing expenditure of government.

The implication of ICT on organizational management of DPA and citizen empowerment as the main research can be assessed as follows:

Organizational management: e-planning implementation affects organizational management through availability of 14 applications that assist the process of urban planning from the lowest level; neighbourhood level, to the highest level; DPA. Seven categories are presented to evaluate how organization management of DPA is affected by implementation of e-planning. *1.) culture and change;* adaptation of ICT in DPA results in DPA should accept the changing of working patterns from closed government to be an open government. This implies two things; that staffs of DPA should be prepared to accept and change their working mechanisms from manually working pattern to be digitalized mechanisms and the readiness to giving access of information to the public. Although, it is argued that ICT implementation is not intended to change the culture of organization, but merely changed the working pattern since ICT is seen as requirement in modernization era. 2.) *Transparency and accountability;* through e-planning, DPA successfully improved the transparency and accountability in managing urban planning. This through two ways; creating SEA in planning system in order to provide clear unit price of goods and services based on market analysis and providing information platform for the citizens. 3.) *Policy alignment and governance,* implementation of e-planning resulted in a new policy alignment through Mayor Regulation 32/2016 to legalize e-planning as a system of urban planning process. *4.) Knowledge Management;* integrating all of data and information from different stakeholders in e-planning results in improvement in inter-organizational knowledge management. *5.) Communication and Collaboration;* changing the

pattern of DPA communication via face-to-face coordination and meetings to be digitalized communication, gave impact on increasing efficiency and effective communication within DPA and inter-organization. Although it is noted that face-to-face communication is still playing important role in discussion of sensitive and complex issues and also as a way to build kinship relation between citizens and governments since urban planning it is not merely about infrastructure development but also involves socio, culture, dynamic of citizens. In terms of collaboration, there is a no prove that e-planning is used as the collaboration instrument but merely as the integration of data from different stakeholders. 6.) *Organisational Learning*; there is no prove that e-planning is used as organisational learning among staffs of DPA. However, the learning opportunities among staffs are opened since the staffs can access e-planning system and checking the task descriptions of other departments. *7.) Human Capital*, investments of IT experts are needed in adaptation and developing e-planning. DPA then hired contracted employees that have IT educational background rather than using developers to prevent information mis-used. Thus, from this explanation, it can be seen that ICT significantly influences the management of organisation of DPA in terms of improving the efficiency and effectiveness on managing urban planning.

Citizens Empowerment: The improving of citizens empowerment are achieved after the implementation of e-planning. Providing e-urunrembug and e-musrenbang to the citizens as the platform of participation is the notable prove that e-planinng affects citizens empowerment. The degrees of empowerment can be seen as *1.) Information degree: good quality information,* opening the new platform of information through e-musrenbang. The information provided by government consists of explanation about budget, regions, and how planning/programs will be conducted. *2.) Consultation; Genuine consultation*; the improving can be seen by how more access are opened for citizens to gain more knowledge related with urban planning in their neighbourhood that indirectly affects to the consultation process. *3.) participation; effective advisory body and partnership;* One of the notable improving is RW level have access to input the proposals of development directly to the e-musrenbang by using RW login, that result of improving capacity and efficiency of community agency. *4.) Empowerment; independent control;* citizens gained access to directly involve in urban planning through e-urunrembug by directly input their comments and proposals in Renstra and programs of RWU, RKPD and RPJMD. However, it is visible that citizens involvement is only at the stage of providing urban planning input. At the end, government is the one who has the power to decide urban planning process. Thus, it can be concluded that the impact of ICT on citizen empowerment is merely only by giving more access to citizens in proposals gathering process and access to the information. Furthermore, one important drawback of ICT should be considered, not all of citizens gained this power to access e-planning. Some groups that illiterate to the technology are excluded from the decision-making process in urban planning.

Finally, this study shows that ICT plays significant roles on organizational management improvements. Although I argue that rather as the panacea for all of government problems, ICT should be seen as a complementary instrument of managing organization in order to improve its efficiency and effectiveness, since its impact is not comprehensively or has limited influence on all aspects of organisational management. This can be seen by the less impact of ICT on culture and change, collaboration, and face-to-face communication. While in terms of citizen empowerment in urban planning, this study found that ICT is only effect on providing more access to citizens in proposals gathering process and access to the information that may or may not be used by citizens unless the citizens are willing to devote their time to use the applications. This study also found ICT has two important drawbacks that important to be evaluated, first, the exclusion of some groups that lack of technology literacy and access to internet. Second, although this study presents the significant effect of ICT on

reducing transaction costs, it needs to be evaluated further if ICT adaptation directly leads to the reducing government expenditure or conversely increasing the expenditure, since there are several additional costs that should be incurred in order to implementing and developing ICT in government organizations. Furthermore, this study agrees that in some extent, ICT has big potential as a government's instrument to improve public service delivery to the citizens especially in the complex of managing urban planning. This study also agrees that ICT plays the important role to create effective and efficient urban planning management.

5.2   Policy Recommendations

Considering the wider opportunities in efforts to increase citizen participation and empowerment in urban planning, there are two proposed policy recommendations based on the results of this study; *first,* re-activation and redevelopment of the e-urunrembug or other e-consultation and e-decision making application in urban planning. e-urunrembug which is used as a platform to collect the aspirations of the general public in urban planning for the preparation of the 2017-2018 RKPD, RPJMD 2016-2022 and RWU Strategic Plan 2016-2022 is considered potential to increase community participation in urban planning. *Second,* government needs to do a comprehensive study and new breakthroughs to overcome the problem of exclusion some groups of citizens that may not be able to access the e-planning application at all in order to carry out monitoring and evaluation of urban planning. This is necessary given the importance of community participation in urban planning especially for those who are directly affected by the development in their neighbourhood areas.

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Appendices

Appendix I Flowchart of e-planning System
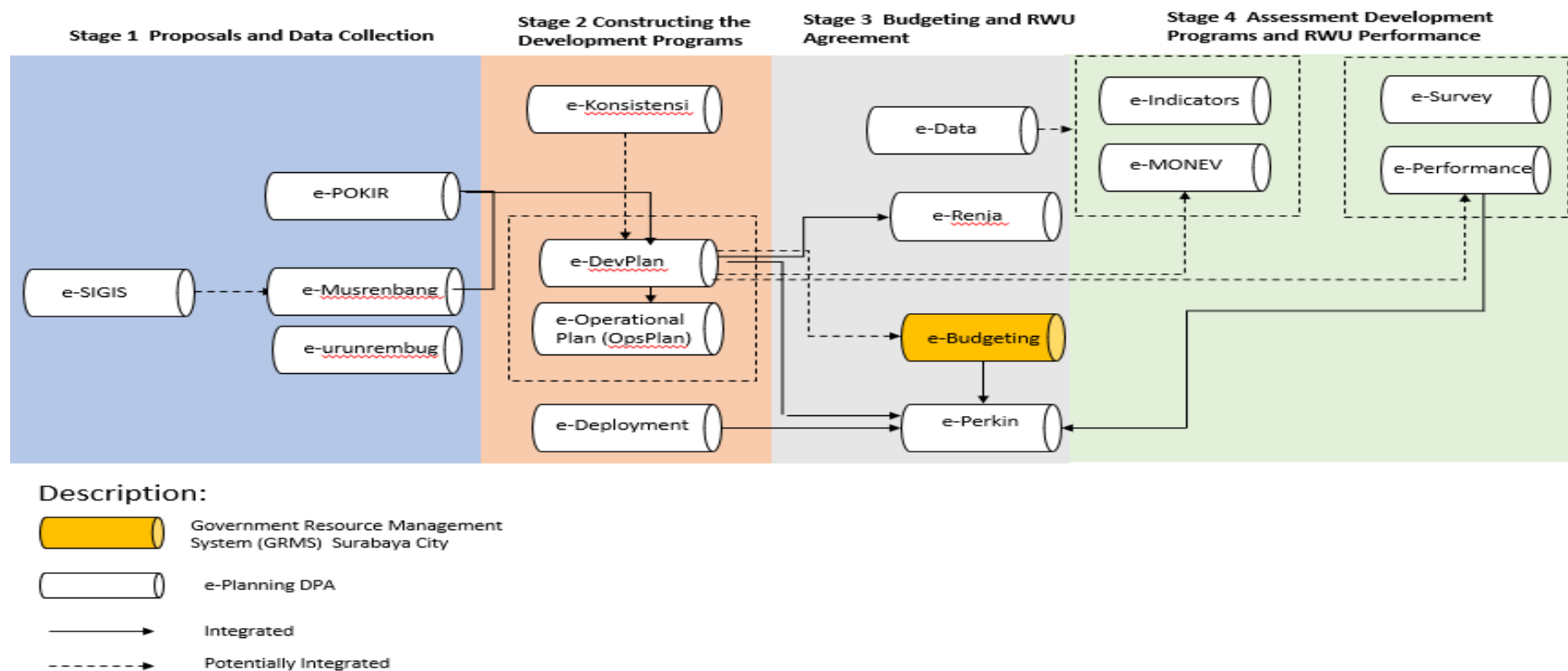
Source: Author's elaboration based on the image of e-planning flowchart ('Flowchart of e-planning', n.d.)

Appendix II List Participants of Validation Infrastructure Planning Meeting of Wonokromo
Sub-district (21 August, 2019, 10 – 12 am)

No.	Participants	Position/Organization
1.	Iin Sriyah	Community representative of Kelurahan Wonokromo
2.	Moch. Unsi	Leader of LPMK Kelurahan Wonokromo
3.	Santoso	Community representative of Kelurahan Jagir
4.	Sudiro	Leader of LPMK Jagir
5.	Gandhi Aria K	Community representative of Kelurahan Ngagel
6.	Rakitanas	Leader of LPMK Ngagel
7.	Budi Susanto	Community representative of Kelurahan Ngagelrejo
8.	Suwarno	Leader of LPMK Ngagelrejo
9.	Samija Wibowo	Community representative of Kelurahan Sawunggaling
10.	Satuji	Leader of LPMK Sawunggaling
11.	Dadang Darmanto	Community representative of Kelurahan Darmo
12.	Roby Depari	Leader of LPMK Darmo
13.	Ir. Yayan Susyanto	Head of Section Infrastructure Development Sub-District Wonokromo
14.	Indah	Staff of Section Community Empowerment Sub-District Wonokromo

Appendix III List of Interviewees

No.	Interviewees	Position/Organization	Code of Interviewees	Time of Interview
DPA of Surabaya City				
1.	Nina Anggreni, ST	Head of the Sub-Section of Research and Development	DPA1	9 August 2019 11.00 am
2.	Praptining Rahayu, S.KM	Head of the Sub-Section of the Work Plans	DPA2	27 August 2019 10.00 am
3.	Adi Gunita, ST	Head of the Sub-Section Transportation, Water Resource and Utility	DPA3	9 August 2019 16.00 pm
4.	Galuh Trianto Wibisono, S.KOM.	Head of the Sub-Section of Data and Information Harmonization	DPA4	9 August 2019 12.00 am
5.	Ema Agustina, ST	Head of the Sub-Section of Spatial, Settlement and Environment Planning	DPA5	9 August 2019 16.00 pm
Sub-Districts Agency				
6.	Ir. Yayan Susyanto	Head of Section Infrastructure Development Wonokromo Sub-District	SDW1	7 August 2019 09.20 am
7.	Tri Wulan	Staff of Section Infrastructure Development Wonokromo Sub-District	SDW2	7 August 2019 14.00 pm
8.	Soeprijadin	Head of Section Community Empowerment Wonokromo Sub-District	SDW3	7 August 2019 12.00 am
9.	Indah	Staff of Section Community Empowerment Wonokromo Sub-District	SDW4	7 August 2019 12.00 am
10.	Iin	Head of Section Employee Affairs Sukolilo Sub-District	SDS1	14 August 2019 10.00 am
11.	Rudi	Head of Section Infrastructure Development Asemrowo Sub-District	SDA1	15 August 2019 10.00 am
LPMK				
12.	Jumali	Leader of LPMK Genteng Kalianak Asemrowo Sub-District	LPMK1	15 August 2019 12.30 am
13.	Sarioso Abadi	Leader of LPMK Tambak Sarioso Asemrowo Sub-District	LPMK2	15 August 2019 15.30 pm

Appendix IV Website Addresses of e-planning Applications

Applications	Website addresses
e-planning system	https://bappeko.surabaya.go.id/eplanning/
e-sigis	https://sigis.surabaya.go.id/sigis3/logins
e-urunrembug	https://devplan.surabaya.go.id/urunrembug/index.php
e-musrenbang	http://musrenbang.surabaya.go.id
e-monev	https://monev.surabaya.go.id/
e-deployment	https://bappeko.surabaya.go.id/edeployment/
e-devplan	https://devplan.surabaya.go.id/devplan/
e-data	https://bappeko.surabaya.go.id/edata2018/
e-OperationalPlan/e-opsPlan	https://bappeko.surabaya.go.id/opsplan2018/
e-survey	https://bappeko.surabaya.go.id/survey-kepuasan/2019/login
e-performance/e-aktivitas	https://bappeko.surabaya.go.id/aktivitas/login
e-pokir	https://bappeko.surabaya.go.id/pokkir/
e-perkin	https://bappeko.surabaya.go.id/perkin/
e-konsistensi	https://bappeko.surabaya.go.id/konsis/
e-renja	https://bappeko.surabaya.go.id/renja/