EVALUATING THE CHARACTERISTICS OF GEO ICT-ENABLED INTERMEDIARIES IN TRANSPARENCY INITIATIVES

MUHAMMAD KURNIAWAN March, 2013

SUPERVISORS: Ir. Walter de Vries Drs. Jeroen Verplanke

EVALUATING THE CHARACTERISTICS OF GEO ICT-ENABLED INTERMEDIARIES IN TRANSPARENCY INITIATIVES

MUHAMMAD KURNIAWAN Enschede, The Netherlands, March, 2013

Thesis submitted to the Faculty of Geo-Information Science and Earth Observation of the University of Twente in partial fulfilment of the requirements for the degree of Master of Science in Geo-information Science and Earth Observation.

Specialization: Governance and Spatial Information Management

SUPERVISORS: Ir. Walter de Vries Drs. Jeroen Verplanke

THESIS ASSESSMENT BOARD: Prof. Dr. Ing. P.Y. Georgiadou (Chair) Ir. F.M. Welle Donker (External Examiner, Delft University)

DISCLAIMER

This document describes work undertaken as part of a programme of study at the Faculty of Geo-Information Science and Earth Observation of the University of Twente. All views and opinions expressed therein remain the sole responsibility of the author, and do not necessarily represent those of the Faculty.

ABSTRACT

While the emergence of third parties (intermediaries) with the use of geo ICT are enriching the way of transparency conducted, there is still little research which investigates how they face challenges around transparency realm.

This research aims to identify and evaluate the characteristics of geo ICT-enabled intermediaries in transparency initiatives. The identification which seeks who/what the geo ICT-enabled intermediaries and their characteristics leads to examination of 19 documented transparency initiatives where the geo ICT used. A matrix is created to obtain information about characteristics of the case and the intermediaries. This matrix then used to build a classification of characteristics attached to geo ICT-enabled intermediaries. The classification subsequently guides the evaluation task which investigates the citizens reporting system of municipality of Enschede as the empirical case to study. The case study approach employs interview, web content analysis, and direct observation in collecting empirical data. In that case, changes related transparency and the extent of geo ICT-enabled intermediaries contribute to the changes are investigated. The evaluation of contribution is assessed in term of effectiveness, efficiency and citizens' participation in managing public space.

The data obtained indicates that there are changes in transparency. The information about complaints/defective reports and the resolutions in public space is not available before the involvement of intermediary. After the involvement, the intermediary platform discloses the information on internet based map and it is accessible for public. The involvement has contributed to the operational processes which are: - It is a way to outsource the monitoring of defects or problems which municipality does not need to do it themselves; - It can avoid duplication; -It saves time in finding the location; and -It can take the citizens closer to what government has done. On the other hand there are also unexpected changes which are: -The increase of overall number of reports received by the municipality including trivial complaints; -The possibility of the emergence of the third parties that take opportunities from the disclosed information. Besides, there are contested views about future involvement of the third parties that may potentially change the transparency.

The results are then discussed in term of theoretical building on transparency and technological intermediation. The involvement of the intermediary has increased transparency since it has provided information that was unavailable before. The crowd as the source of information disclosed has been recognized in helping the municipality. The technological intermediary is also an alternative means for citizens and can enhance citizens' capability to monitor government. However, the intermediation which aimed to connect citizens surrounding the problems reported has no evidence. Although the information disclosure provides incentive towards the municipality. Instead, it potentially creates links with other parties which take opportunities from information disclosure. In the case study, the use of geo ICT has supported to handle problems which have spatial components and to customize data which can ease the users to comprehend the information disclosed.

Keywords: geo ICT-enabled intermediary, transparency

ACKNOWLEDGEMENTS

First and foremost, I would like to thank Allah, all praise is to Him. His will, guidance and permission has delivered me to finish my study and research.

I would like to express my immense gratitude to Ir. Walter de Vries as my first supervisor and Drs. Jeroen Verplanke as my second supervisor for their patient and continued support and guidance from the beginning of my research to till the end.

My deep gratitude also goes to Prof. Dr. Ing. P.Y. Georgiadou for her lectures which lighted my knowledge on social construction of technology. The same gratitude also goes to all lectures and staffs of ITC particularly in the department of Urban and Regional Planning and Geo-Information Management (PGM) for their teachings and supports during my study.

My deep appreciation goes to Marcel Bouwhuis (Deputy Head Public Spaces, Strategic Advisor at Municipality of Enschede), Derk Jan Eshuis (Internet Communication Advisor at Municipality of Enschede) and Stijn van Balen (Founder and Developer Verbeterdeburt) for their cooperation during and post interview that this research indebted a lot of valuable information.

I would like to acknowledge the financial support from the NUFFIC through STUNED scholarship program which enabled me to pursue my MSc in ITC, University of Twente. I am also grateful to my institution Municipality of Pontianak in Indonesia for supporting and allowing me to have further study in the Netherlands.

I am indebted to all my Indonesian friends for their help, support, advices and made me feel at home. Many thanks also to my GSIM class mates for their friendship and encouragement. Last but not the least, I thank to all my international friends who have filled my unforgettable days during my stay in the Netherlands.

DEDICATION

This thesis is dedicated to my mother and father who always pray and support me throughout my life. This thesis also dedicated to my wife who always stood by me and took full responsibility during my absence, also to my son and my daughter who just born this January, my brother and sister, my wife's parents, and all my family in Indonesia.

TABLE OF CONTENTS

Acknowledgements Dedication Table of contents Ist of figures List of figures Ist of tables 1 INTRODUCTION 11. Background 12. Justification of the Research 13. Research Problem 14. Research Objectives 14.1. General objectives 14.2. Sub-objectives 15. Research Questions 16. Thesis Structure 2. ON TRANSPARENCY INITIATIVES 2.1. Transparency initiative 2.1.1. Definitions and elements 2.1.2. Assumptions around transparency 2.1.3. Problems around transparency 2.1.4. Itermediaries in transparency initiatives 2.5. Geo ICT-enabled intermediaries in transparency initiatives 2.6. Transparency realm 3.1. Deriving characteristics of the transparency initiatives 3.2.1. The roles of the transparency initiatives 3.2.1. The role of the transparency initiatives 3.2.2. Participatory sensing 3.2.3. Function the transparency initiativ	ii
Dedication Table of contents List of figures List of figures 1.ist of tables 1. INTRODUCTION 1.1 Background 1.2 Justification of the Research 1.3 Research Problem 1.4.1 General objectives 1.4.2. Sub-objectives 1.5. Research Questions 1.6. Thesis Structure 2. ON TRANSPARENCY INITIATIVES 2.1. Transparency initiative 2.1.1. Definitions and elements 2.1.2. Assumptions around transparency 2.1.3. Problems around transparency 2.1.4. Intermediaries in transparency initiatives 2.2. Transparency initiatives over time 2.3. Participatory sensing 2.4. ICT-enabled intermediaries in transparency initiatives 2.5. Geo ICT-enabled intermediaries in transparency initiatives 2.6. Transparency realm 3. GEO ICT-ENABLED INTERMEDIARIES. 3.1. Deriving characteristics of the transparency initiatives 3.2.1. The roles of the transparency initiatives 3.2.2. Parties involved within the transparency initiatives (initiators, discloser of information and targeted entitics)	
Table of contents. List of figures List of tables 1. INTRODUCTION 1.1. Background 1.2. Justification of the Research. 1.3. Research Problem 1.4. Research Objectives 1.4.1. General objectives 1.4.2. Sub-objectives 1.4.3. Research Questions 1.6. Thesis Structure 2. ON TRANSPARENCY INITIATIVES 2.1.1. Definitions and elements 2.1.2. Assumptions around transparency 2.1.3. Problems around transparency 2.4. ICT-enabled Intermediaries in transparency 2.5. Geo ICT-enabled Intermediaries in transparency initiatives 2.6. Transparency realm 3. GEO ICT-ENABLED INTERMEDIARIES 3.1. Deriving characteristics of the transparency initiatives and the geo ICT-enabled intermediaries 3.2.1. The roles of the transparency initiatives 3.2.2. Parties involved within the transparency initiatives 3.2.2. Parties involved within the transparency initiatives 3.2.3. Funding and partnership 3.2.4. Incentives scheme offered 3.2.5. Geo Ictries of the transparency initiatives	ш
List of figures	iv
List of tables	vi
 INTRODUCTION Background Justification of the Research Research Problem Research Objectives 1.4.1 General objectives 1.4.2 Sub-objectives 1.5 Research Questions 1.6 Thesis Structure ON TRANSPARENCY INITIATIVES 2.1 Transparency initiative 2.1.1 Definitions and elements 2.1.2 Assumptions around transparency 2.1.3 Problems around transparency 2.1.4 Transparency initiatives over time 2.3 Participatory sensing 2.4 ICT-enabled Intermediaries in transparency initiatives 2.5 Geo ICT-enabled Intermediaries in transparency initiatives 2.6 Transparency realm 3. GEO ICT-ENABLED INTERMEDIARIES 3.1 Deriving characteristics of the transparency initiatives and the geo ICT-enabled intermediaries 3.2.1 The roles of the transparency initiatives 3.2.1 The roles of the transparency initiatives 3.2.1 The roles of the transparency initiatives 3.2.2 Parties involved within the transparency initiatives (initiators, discloser of information and targeted entities) 3.2.3 Funding and partnership 3.2.4 Incentives scheme offered 	 /11
 Background	1
 Justification of the Research Research Problem Research Problem Research Objectives 1.4.1. General objectives 1.4.2. Sub-objectives 1.4.2. Sub-objectives 1.5. Research Questions 1.6. Thesis Structure ON TRANSPARENCY INITIATIVES 2.1. Transparency initiative 2.1.1. Definitions and elements 2.1.2. Assumptions around transparency 2.1.3. Problems around transparency 2.4. ICT-enabled Intermediaries in transparency initiatives 2.5. Geo ICT-enabled Intermediaries in transparency initiatives 2.6. Transparency realm 3. GEO ICT-ENABLED INTERMEDIARIES 3.1. Deriving characteristics of the transparency initiatives 3.2.1. The roles of the transparency initiatives 3.2.2. Parties involved within the transparency initiatives (initiators, discloser of information and targeted entities) 3.2.3. Funding and partnership 	.1
 Research Problem	.2
 1.4. Research Objectives	.3
 1.4.1. General objectives	.3
1.4.2. Sub-objectives 1.5. Research Questions 1.6. Thesis Structure 2. ON TRANSPARENCY INITIATIVES 2.1. Transparency initiative 2.1.1. Definitions and elements 2.1.2. Assumptions around transparency 2.1.3. Problems around transparency 2.4. ICT-enabled Intermediaries in transparency initiatives 2.5. Geo ICT-enabled Intermediaries in transparency initiatives 2.6. Transparency realm 3. GEO ICT-ENABLED INTERMEDIARIES 3.1. Deriving characteristics of the transparency initiatives and the geo ICT-enabled intermediaries 3.2. Characteristics of the transparency initiatives 3.2. Parties involved within the transparency initiatives (initiators, discloser of information and targeted entities) 3.2.3. Funding and partnership 3.2.4. Incentives scheme offered	3
 1.5. Research Questions	4
 Thesis Structure	.4
 ON TRANSPARENCY INITIATIVES Transparency initiative 2.1. Transparency initiative 2.1.1. Definitions and elements 2.1.2. Assumptions around transparency 2.1.3. Problems around transparency 2.2. Transparency initiatives over time 2.3. Participatory sensing 2.4. ICT-enabled Intermediaries in transparency initiatives 2.5. Geo ICT-enabled intermediaries in transparency initiatives 2.6. Transparency realm 3. GEO ICT-ENABLED INTERMEDIARIES 3.1. Deriving characteristics of the transparency initiatives and the geo ICT-enabled intermediaries 3.2. Characteristics of the transparency initiatives 3.2.1. The roles of the transparency initiatives 3.2.2. Parties involved within the transparency initiatives (initiators, discloser of information and targeted entities) 3.2.3. Funding and partnership 3.2.4. Incentives scheme offered 	.4
 2.1. Transparency initiative	7
 2.1.1. Definitions and elements	.7
 2.1.2. Assumptions around transparency	7
 2.1.3. Problems around transparency	8
 2.2. Transparency initiatives over time	9
 2.3. Participatory sensing	0
 2.4. ICT-enabled Intermediaries in transparency initiatives	0
 2.5. Geo ICT-enabled intermediaries in transparency initiatives	.1
 2.6. Transparency realm	.3
 GEO ICT-ENABLED INTERMEDIARIES	3
 3.1. Deriving characteristics of the transparency initiatives and the geo ICT-enabled intermediaries 3.2. Characteristics of the transparency initiatives 3.2.1. The roles of the transparency initiatives 3.2.2. Parties involved within the transparency initiatives (initiators, discloser of information and targeted entities) 3.2.3. Funding and partnership 3.2.4. Incentives scheme offered 2.25. Conditivity of the disclosed information 	5
 3.2. Characteristics of the transparency initiatives	.5
 3.2.1. The roles of the transparency initiatives	.7
 3.2.2. Parties involved within the transparency initiatives (initiators, discloser of information and targeted entities)	7
and targeted entities) 3.2.3. Funding and partnership 3.2.4. Incentives scheme offered	
 3.2.3. Funding and partnership	7
3.2.4. Incentives scheme offered	8
2.2.5 Conditivities of the disclosed in forward in a	8
3.2.3. Credibility of the disclosed information	9
3.3. Characteristics of the geo ICT-enabled intermediaries	.9
3.3.1. The forms of geo ICT-enabled intermediaries	9
3.3.2. Tools and methods used	20
3.3.3. Position of the geo ICT-enabled intermediaries in relation with other parties	21
3.3.4. How the geo ICT-enabled intermediaries traced	21
3.4. Geo ICT-enabled intermediaries in the transparency realm	23
4. METHODS TO EVALUATE THE CASE STUDY	25
4.1. The overarching research approach	25
4.2. The research framework	25
4.3. The case study selection	26

	4.4.	Data collection	27				
	4.5.	Data analysis and interpretation	29				
	4.6.	Conclusion	29				
5.	CHARACTERISTICS OF GEO ICT-ENABLED INTERMEDIARIES IN ENSCHEDE'S CASE						
			31				
	5.1.	Transparency initiatives in citizens reporting system on public space issues of Municipality of Ensch	ede				
			31				
	5.2.	Goals of the transparency initiatives and the evaluation criteria	35				
	5.3.	Characteristics of geo ICT-enabled intermediaries	36				
	5.4.	The contribution of the geo ICT-enabled intermediaries	39				
	5.5.	Future involvement of the intermediaries in the Municipality of Enshcede transparency initiative	41				
	5.6.	The presence of unexpected effects of the involvement of the geo ICT-enabled intermediary	41				
	5.7.	The presence of unexpected parties that take opportunities from information disclosure	41				
	5.8.	Conclusion	42				
6.	EVA	LUATING THE CHARACTERISTICS OF GEO ICT-ENABLED INTERMEDIARIES.	43				
	6.1.	Information disclosure and the crowd as the source	43				
	6.2.	Internet platform as well as mobile application as the technological intermediaries	44				
	6.3.	Incentives of the transparency initiatives	46				
	6.4.	Sustainability	47				
	6.5.	Conclusion	48				
7.	CON	ICLUSION AND RECOMENDATION	50				
	7.1.	Conclusion	50				
	7.2.	Recommendation	51				
List	of ref	erences	53				
Apr	pendix		55				
Appendix 1: Interviews protocol							
Appendix 2: Matrix of characteristics of transparency initiatives and the geo ICT-enabled intermediaries							

LIST OF FIGURES

Figure 1.1. The citizens-government relation in transparency initiatives and the position of the	
intermediaries	.3
Figure 3.1 Position of geo ICT-enabled Intermediaries in relation with other parties within transparency	
initiatives	22
Figure 5.1 Information about citizens reporting system in the Muncipality of Enschede's official website	
(in Dutch)	32
Figure 5.2 Map of problems reported and responds from municipality in the Verbeterdebuurt interface.	
The left side is display in the smartphone app and the right is display in the website	34
Figure 5.3 Chart of the way of geo CT-enabled intermediaries contribute to the goal achievement	36

LIST OF TABLES

Table 4.1 Types of data collected and methods employed	27
Table 5.1 Characteristics of verbeterdebuurt	36
Table 5.2 Characteristics of buitenbeter	38
Table 5.3 Effects of verbeterdebuurt on the intermediate goals	39
Table 5.4 Effects of buitenbeter on the intermediate goals	40

1. INTRODUCTION

1.1. Background

Transparency is considered by many as a means to improve governments (Meijer, 2009) and to further public aims (Fung, Weil, Graham, & Fagotto, 2004). However, opponents argue that transparency if is not managed well can be vague and bring perverse effect to both government and society (Fenster, 2006; Raman, 2012). This research considers this debate about transparency and aims to view the extents the transparency initiatives bring improvements for government or society while facing challenges that can ruin the transparency. This research narrows its study by observing transparency cases whereby geo information and communication technology (geo ICT) involved due to the believe that technology can enhance transparency (Avila, Feigenblatt, Heacock, & Heller, 2010) but little research to evaluate this technology potential in bringing greater transparency (Sasaki et al., 2010). The intermediation role played by third parties is also the concern of this research since intermediation combined with technology seems efficacious to address obstacles in transparency initiatives.

In citizens-government relation, transparency implies the visibility of government and the abilities of citizens to observe through certain medium (Oliver, 2004). Traditionally, transparency activity is done by direct relation between government institution and citizens (such as town meeting, direct contact with officials) or sometimes mediated by traditional media such as the newspaper, radio and TV (Meijer, 2009). In this digital age, ICT has helped government to open up its data and enabled citizens to access directly the data through internet at any time and any place (Meijer, Curtin, & Hillebrandt, 2012). Thus, ICT has revolutionized the way citizens-government relates to each other in term of transparency.

There are a number of transparency initiatives being applied by government to cope with policy problems (Fung et al., 2004). Some initiatives are mainly to make citizens more informed to support their daily decision making and avoid them from risk (Fung, Graham, & Weil, 2007). Other initiatives are taken to force officials to be more effective, efficient and avoid malfeasance (Fenster, 2006).

Besides originates from governments, transparency initiatives may also come from citizens. However, from several cases (Sasaki et al., 2010) the citizens - in their endeavours towards gaining government more transparent - often need some sort of mobilization and/or intermediation.

The intermediation in transparency may occur to overcome problems which Fenster (2006) states as opaque of transparency. He argues that these problems can originate either from the government (unresponsive, reluctant to share information and afraid of criticism), the citizens (ignore the political process) or the disclosed information itself (not easy to understand or to access). Intermediaries emerged to cope with the problems and the advancement of ICT has helped them to increase their efforts. Some ICT-enabled intermediaries make data published by government easy to understand as well as provide information that is not given by government (Sasaki et al., 2010). Other intermediaries expose citizens' complaints to exacting government's accountability as well as to build political awareness of citizens (Sasaki et al., 2010). They use transparency as an instrument to inform citizens, building awareness and to influence the behaviour of government officials and private organizations. They capture data, customize, disclose and disperse the information to get intended impact.

One of the novelty issues in transparency initiatives is the use of geo ICT to enhance government accountability in delivering public services (Georgiadou et al., 2011). The use of geo ICT is more due to its potential in presenting information in a manner that can aggregate a lot of data to ease the understanding of information users. Fung et al (2007) have suggested that the comprehensibility of information disclosed may determine the likelihood the information embedded in users' decision making process. Furthermore, geo ICT at this moment has abilities that allows anyone to use mobile devices such as mobile phone or laptop to collect, generate and expose the spatial information on internet in near real time (Goodchild, 2007). These strengths of geo ICT which consist of elements such as citizens' participation, the ease to use, mobility, geo-visualization to aggregate data and quick time in displaying the information seems to be a promising tool (Goldman et al., 2009) that may be used more intensive for transparency initiatives in the future. However, the novelty of the use of geo ICT amid social context implies that it still needs explanation (Georgiadou, Miscione, Lance, & Vries, 2009) particularly with regards to its success and failure (Georgiadou et al., 2011). Therefore, considering the promise and the novelty, the focus of this research is on the use of geo ICT by intermediaries in transparency initiatives.

1.2. Justification of the Research

At this moment, the ICT-enabled intermediaries in transparency initiatives are not merely NGOs or CSOs. Fung et al (2010) have noticed that in the transparency action cycle, the intermediaries can be NGOs, journalists or advocacy organizations. Even, in that transparency cycle the intermediaries can be considered as intermediaries of intermediaries (see figure 1.1). According to Fung et al (2010) this type of ICT-enabled intermediaries is sometimes efficacious to influence behaviour of the targeted entities.

The other type of intermediaries is not the organizations or individuals, but internet applications (apps) or internet platforms. The apps or platforms are used to make government data accessible for citizens (Davies & Bawa, 2012; Demeyer, 2012). The apps and platforms can also be used to collect spatial information from citizens and then disseminate the aggregated information in order to influence government; for example SEMA and Ushahidi (Georgiadou et al., 2011). Figure 1.1 describes the type of the ICT-enabled intermediaries and their position in government-citizens relation in term of transparency. The flow of arrow from government means providing information and the flow of arrow from citizens means accessing or disclosing information.

The emergence of various type of parties strives for transparency is appropriate to get more attention including the geo ICT-enabled intermediaries- since it is a continuation of the increased struggle initiated by NGOs and CSOs since 1980s around issues of transparency, accountability and fights against corruption (Fung, Gilman, & Shkabatur, 2010). Furthermore, in many cases entities that act as intermediaries have helped to achieve aims related transparency (Sasaki et al., 2010), which shows the existence of the intermediaries is important in transparency discussion.

The study of geo ICT-enabled intermediaries can be included in larger study field that observe the potential of ICT in bringing greater transparency, accountability and civic participation. However, Sasaki et al (2010) has noted that still little research has been done in that field. Thus, research to investigate deeper on the characteristics of geo ICT-enabled intermediaries in transparency initiatives is critical. It can enhance our understanding of transparency process.

Therefore, this research investigates more precisely of who or what the geo ICT-enabled intermediaries in transparency initiative and evaluates their characteristics in transparency. This research hopes to contribute to the development of transparency field by directing the attention to the roles of intermediaries when

looking at the whole process in transparency initiatives. Since intermediaries may be one of the determinant factors in gaining success of transparency.



Figure 1.1. The citizens-government relation in transparency initiatives and the position of the intermediaries

1.3. Research Problem

ICT-enabled intermediaries have emerged to overcome problems related to transparency such as unresponsive governments, vague of the disclosed information and public unawareness of policies. The initiatives whereby technology enabled-intermediaries have been created and used are important to further public aims such as informing citizens, building awareness and influencing government behaviour.

However, there is still little research which investigates the ICT-enabled intermediaries' characteristics in transparency initiatives, particularly the geo ICT-enabled intermediaries due to its novelty. Thus, little is known on how the geo ICT-enabled intermediaries face challenges - such as incentives for the discloser of information and targeted entities, vulnerability of information manipulation, anonymity and responsibility and limitation of technology - to further public aims. Moreover, the emergence of various types of geo ICT-enabled intermediaries implies the need to identify them and their characteristics in order to ease further analysis.

Thus, it is appropriate to gain an insight into the characteristics of geo ICT-enabled intermediaries and its contribution to the transparency since it can enhance our understanding of transparency initiatives processes.

1.4. Research Objectives

1.4.1. General objectives

Based on the research problem, the main objective of this research is to identify and to evaluate the characteristics of geo ICT-enabled intermediaries' in transparency initiatives.

1.4.2. Sub-objectives

- 1) To describe the characteristics of geo ICT-enabled intermediaries in transparency realm (theoretical objectives);
- 2) To evaluate the characteristics of geo ICT-enabled intermediaries in transparency initiatives (empirical objectives);
- 3) To analyse the characteristics of geo ICT-enabled intermediaries in terms of theoretical building on transparency and technological intermediation (analytical/inference objectives).

1.5. Research Questions

- To describe the characteristics of geo ICT-enabled intermediaries in transparency realm (theoretical objectives);
 - 1) What or who are geo ICT-enabled intermediaries in transparency realm?
 - 2) Which (common and specific) characteristics do geo ICT-enabled intermediaries exhibit?
 - 3) How can geo ICT-enabled intermediaries be traced?
 - 4) How do geo ICT-enabled intermediaries emerge and who is behind them?
- 2) To evaluate the characteristics of geo ICT-enabled intermediaries in transparency initiatives (empirical objectives);
 - 5) Which techniques and tools that can be used to evaluate the characteristics of geo ICTenabled intermediaries?
 - 6) Which empirical indicators that are needed to evaluate the characteristics of geo ICT-enabled intermediaries?
 - 7) Which geo ICT-enabled intermediary/ries would constitute an appropriate case to study?
 - 8) Which characteristics appear to be (un)common, (a) typical, remarkable, (un)conventional, (ir)rational, (a)political in the study case(s)?
- 3) To analyze the characteristics of geo ICT-enabled intermediaries in terms of theoretical building on transparency and technological intermediation (analytical/inference objectives).
 - 9) What of changes related transparency are possible when the geo ICT-enabled intermediaries involved?
 - 10) How the evaluation of characteristics of geo ICT-enabled intermediaries contributes to the theoretical building on transparency and technological intermediation?

1.6. Thesis Structure

Chapter 1: Introduction

This chapter introduces the research and contains; background and justification of the research, research problem, research objectives and research questions.

Chapter 2: On Transparency initiatives

This chapter reviews several literatures pertaining to transparency initiatives, the intermediaries and the use of ICT –particularly geo ICT- in the initiatives. It introduces some views relevant to this research and places this research on a context particularly in the transparency realm and the relation with other research/works.

Chapter 3: Geo ICT-enabled intermediaries

This chapter identifies the characteristics of geo ICT-enabled intermediaries by examining a number of cases to construct a set of classification.

Chapter 4: Methods to evaluate the case study

This chapter is devoted to describe the research methods to evaluate the worth of geo ICT-enabled intermediary's characteristics in particular empirical case.

Chapter 5: 5. Characteristics of geo ICT-enabled intermediaries in Enschede's case

This chapter contains result of the evaluation of geo ICT-enabled intermediary's characteristics in empirical case.

Chapter 6: 6. Evaluating the characteristics of geo ICT-enabled intermediaries

This chapter gives interpretation and discusses the result of chapter 5

Chapter 7: Conclusion and recommendation

This chapter contains conclusion and recommendation of the research

2. ON TRANSPARENCY INITIATIVES

The previous chapter introduced a preliminary explanation of this research which includes justification, problem, objectives and questions. In this chapter I describe further by reviewing some literatures. The literature's topics are around transparency initiatives, the intermediaries and the use of ICT –particularly geo ICT- in the transparency initiatives.

The review aims to introduce some views relevant to this research. It also aims to place this research in a context, particularly that of the transparency realm. To do that, this chapter has the following sequential sections: Firstly, section 2.1 looks at a number of concepts within transparency. It briefly explains the transparency and transparency initiatives definition and elements, the important, and problems around transparency initiative. Secondly, section 2.2 presents an overview of transparency initiatives over period of time. This leads to the transparency realm context where ICT-enabled intermediaries emerge. Thirdly, section 2.3 describes a way of citizens -enabled by ICT- to collaboratively generate information namely "participatory sensing" and its potential in conjunction with transparency initiatives. Fourthly, section 2.4 views the roles and activities of the ICT-enabled intermediaries in transparency initiatives. Also here, some research/works linked to this research are presented. Fifthly, section 2.5 describes what the geo ICT-enabled intermediaries in transparency is in general. Lastly, section 2.6 concludes the context of geo ICT-enabled intermediaries in transparency realm and the link of this research with other research/works.

2.1. Transparency initiative

2.1.1. Definitions and elements

Although rooted in far before twentieth century, the transparency discussion in public domain re-emerged since in the 1980s when transparency was stated in many institutional reform missions (Hood, 2006). Since then, transparency has become a kind of doctrine pervasively promoted to be applied in any level of government (Hood, 2006).

What is transparency exactly? The Oxford English dictionary defines Transparency as 'a condition being transparent so that objects behind can be seen'. The definition, however, may vary if it is applied in a certain context. Oliver (2004) recognizes that there are many definitions of transparency which depend on the frame, the contents, the reference and so forth. However, he suggests that in general there are at least three basic elements of transparency; (1) who is watching (2) what (3) and in what medium or method. If applied in government-citizen relationship, the elements are 1) citizens who watch 2) the government 3) through certain medium (e.g. published report, meeting transcription, website, media publication, etc.). Transparency actually attempts to represent the concerned reality and the initiatives use any means to represent closely the reality to reduce uncertainty (Meijer, 2009). In public administration context, Meijer (2009) defines transparency as "the ability to look clearly through the windows of an institution". This definition implies the existence of an institution such as a government body and its relation with the ability to observe through certain medium.

The use of transparency term sometimes leads to openness term. It is hard to draw a clear distinction between transparency and openness. Some scientists consider those two terms are synonyms, and the use both of them has no significant difference (Heald, 2006). However, other scientists distinguish the two terms. In terms of open government, although transparency is frequently used interchangeably with openness, Meijer et al (2012) argue that transparency is an element inside the concept of openness.

Another element is participation. So openness is transparency plus participation. Then Meijer et al (2012) clarify the definition of transparency as "open access to government information".

With reference to definition above, transparency is strongly associated to how the government and citizens can interact on specific activities for which the government is responsible. So, discussing transparency involves discussing the means to interact (including the way in which information is being shared or transferred) and it involves the rules to interact (including the obligations, rights, and duties on their side of interaction).

Thus, transparency is a condition of being transparent where citizens can view inside the government activities or process through medium (means or ways) and under certain regulation. Transparency consists of elements: citizens, government, information, medium, and rules. In simpler words, transparency means the availability of government information to the public.

Refer to the transparency definition above transparency initiative can be defined as any effort to make government information available for the public. Thus, as well as the element of transparency, the transparency initiative involves; 1) the interaction of citizens and government, 2) any effort to make the information -of activities/process that government is responsible- available, 3) through certain medium, and 4) there should be rules of the interaction.

The aims of transparency initiatives vary, since every transparency system has its own designed aims (Fung et al., 2004). The aims cover; avoid corruption and malfeasance, improve government efficiency, protect citizens, and improve government accountability (Fung et al., 2004). In essence, transparency initiative aims to further public goals. The transparency initiatives may also rely on how policy in certain institution framed. The frame of policy makers is their structure about how to deal with certain situation (Hoppe, 2010). There may be several frames comes up and the frame which is supported by many supporters will be imposed and will determine how the transparency conducted.

2.1.2. Assumptions around transparency

The reason why the attention on transparency has increased might be due to the discussions around transparency contain many promising assumptions. The assumptions include;

- 1) Allowing people to access information about what happens inside the government may make the officials work effective, efficient, avoid malfeasance and corruption otherwise criticism and punishment will afflict upon them (Meijer et al., 2012). Here, transparency considered will lead to effectiveness, efficiency and clean government.
- 2) Transparency policy has benefited citizens by make them more informed and lead to act based on rationality (Fenster, 2006). Information provided to the public will educate citizens, building awareness, help citizens to make rational decision in their daily activity and can solve their problems.
- 3) By disclosing information about products and services of companies, citizens can avoid risk by choosing safer or healthier products, as well as information about companies' financial condition can help in making the right decision about investment (Fung et al., 2004).
- 4) In terms of State-citizens relationship, transparency may build closer relation whereas informed citizens with their knowledge about factual condition can voice and participate in government process, therefore they will trust to who govern them (Fenster, 2006) and increase government legitimacy (Birkinshaw, 2006).

These assumptions have driven any effort for transparency implementation, include efforts initiated by parties outside government such as NGOs, CSOs, journalist, and non-profit organisations (Fung et al., 2010; Sasaki et al., 2010).

2.1.3. Problems around transparency

There are some problems that can deter transparency initiatives to achieve aims and cause the above assumptions do not work. The problems related to each assumption above are follows;

- 1) Government naturally favours of secrecy (Fenster, 2012) and adapt its behaviour towards transparency systems to maintain secrecy (Roberts, 2006). This behaviour hardly leads to changes aimed of transparency.
- 2) Information provided for public does not automatically solve their problems. Deficiency in government data even can cause another problem. Raman (2012) exemplifies the case where a lack of accuracy of land record data which does not cover information of land claims over time makes difficult to protect land rights. Moreover, the "openness" of the data is used by other parties to take financial advantage over the poor group (Raman, 2012).
- 3) Poor design of transparency system has increased risk of consumers (Sasaki et al., 2010). The unclear of information disclosed causes misinterpretation and leads to underestimate or overestimate the risk (Fung et al., 2007).
- 4) The effort to improve trust to government by implement transparency facing obstacles from inside the government itself (Roberts, 2006). The government lacks of resources and expertise to implement transparency (Sasaki et al., 2010).

Those problems of transparency may challenge the assumptions. To look clearly the coverage issues around the transparency problems, Fenster (2006) has classified the problems into three. Firstly, the problems related to the government. Government body is the provider of information to the public when it is required by law. However, as the sender, government sometimes are not responsive, in favour of secrecy, not capable to provide appropriate information to public, and afraid of criticism. Thus, government may dodge from obligation to provide the information, or citizens may face long bureaucracy when asking information. This condition has undermined the transparency. Secondly, the problems related to the information itself. The information may not exist. If it exists, it may be incomprehensible because provided in raw format, table, chart that ordinary citizens are not familiar with. This makes the information. Citizens lacks of capability in interpreting the information. They also lack of power and reluctant to involve in political process and tend to apathy. The transparency initiative that is meant to empower citizens to involve in government process by giving input and controlling will be useless if the citizens themselves powerless or apathy.

These problems have made either government or citizens frustrated toward transparency initiatives (Fenster, 2006). The frustration of citizens may ruin the trust toward government (Roberts, 2006). While the frustration of government cause the government resistant to openness (Fenster, 2006).

As well as assumptions around transparency, the problems also drive the emergence of initiatives from parties outside the government that I call ICT-enabled intermediaries.

2.2. Transparency initiatives over time

There are various research and reports showing examples of transparency initiatives. Some reports are evaluation of transparency policies in country level (Fung et al., 2004) and international level (Fung et al., 2007). Some other contain documentation of transparency effort initiated by citizens and NGOs (Avila et al., 2010; Sasaki et al., 2010). There is also field report about competition to create computer application that can be used as instrument of open government (Demeyer, 2012).

When comparing transparency initiatives over time one can distinguish them in three periods (or 3 generations):

In many countries, access to government information is regulated in a law to enforce the citizens' right-toknow. Fung et al (2007) consider this condition as the first generation of transparency. Every time citizens need government information, they can directly ask the information to the government body by specifying which data needed and explain the purpose of data used.

The second generation of transparency emerged to overcomes more complex, sectorial and dispersed policy problems (Fung et al., 2007). The regeneration indicates the transformation of modern government and transition from government to governance (Meijer, 2009). In this second-generation -also called targeted transparency-, transparency policy is applied upon targeted sectors (e.g. safety, health, financial) and requires public organizations (e.g. government agencies, companies) to disclose standardized information in order to inform the public (Fung et al., 2007; Fung et al., 2004). Examples of this kind of transparency are food labelling, water hygiene rate publication, work place hazard announcement and safety standard labelling in vehicle.

On the basis of the second-generation and shaped by revolution on the way people communicate, generate and share information, the third-generation of transparency emerged (Fung et al., 2007). It is a condition where authorized institutions are not the only information provider in transparency initiatives. It is called collaborative transparency due to its nature which enables collaborative use and production of information to advance public goals. Users of information (e.g. citizens, academicians, NGOs, politicians, professionals) can be the information producer in the same time. Fung et al (2007) explain that unlike the second generation which depends on regulation and/or self-initiative for disclosing information, the third generation enable anyone to contribute essential information without mandate. Here, ICT holds the key role in which it enables people collect, generate and share information related government. The example of this is online pooling created by citizens to assess performance of certain public service provided by government (Fung et al., 2007). The published pooling result in the end may inflict improvement on the services performance. Besides, ICT also allows creation of more interactive and customized information display to ease citizens to comprehend the information.

Collaboration and contribution from individual citizens has become increasingly important over time in conjunction with transparency. Therefore it is necessary to look into what is referred as "participatory sensing" in more detail.

2.3. Participatory sensing

Increasing possibility of reporting and disclosing information by ordinary citizens cannot be separated from participatory sensing term. The term is related to the ordinary people's ability to capture data and spread it to the public. Capturing data is not difficult at this moment due to the massive use of mobile phone which equipped with ability such as taking picture, recording voice and video, and locating position with GPS. Pervasive internet networks either through wireless or mobile data has facilitated people to disclose the data to the world. In addition, the web services allow the data aggregated, visualized and then accessed by anyone.

Essentially, participatory sensing is about data collection and interpretation which emphasize citizens' involvement in the process either in sensing or documenting (Goldman et al., 2009). There are three approaches of participatory sensing that Goldman (2009) concludes. Either 1) citizens can share their personal experience, 2) deliberately involve as participants in collective inquiry or 3) work as a group to collectively design the project, collect, document, investigate and interpret the data.

The discussion of participatory sensing involve; 1) citizens participation either as a group or individual who act as sensors capturing data and information, 2) the use of ICT (such as mobile phone, laptop, GPS, mobile internet network, etc.) and 3) the share of data and information (Goldman et al., 2009; Goodchild, 2007).

In transparency initiatives, participatory sensing is potentially used due to its strength of citizens' involvement in generating and sharing information. Citizens' participation in generating information can fill the gap of information, especially information which hardly provided by formal and institutionalized method (Goodchild, 2007). For example, the participatory sensing approach is used to disclose citizens SMS reports of defective public facilities spot on internet (Georgiadou et al., 2011). This disclosed information is expected to affect the authority's accountability to improve the facilities.

In many transparency initiatives (which are the concern of this research), government information that available for public is not provided by government, but by intermediaries. The intermediaries use participatory sensing approach either to generate or to share the information. The use of ICT in this approach explains the term "ICT-enabled" in ICT-enabled intermediaries. This refers to the roles of ICT in enabling the intermediaries to conduct transparency initiatives.

2.4. ICT-enabled Intermediaries in transparency initiatives

This section introduces what is ICT-enabled intermediary in transparency initiative. The explanation covers the underlying reason behind the emergence, the roles, the important, the ICT utilization and some research related to that issue.

In transparency initiatives, several examples documented by Sasaki et al (2010) show that citizens in their endeavours towards transparency seldom act in isolation or completely unorganized. Often there is some sort of mobilization and/or intermediation. In this context, ICT-enabled intermediaries occur.

It is recognized that intermediaries still play important role, although in the digital age, there are claims that ICT will discourage intermediation in political process (Edwards, 2006). The argument says that intermediation which traditionally conducted by political parties, interest group or journalist will be replaced by direct communication between citizens, government and parliament. Internet and many sophisticated communication means allow this direct interaction. However, there are evidences that intermediation still occur and even has adopted ICT as a means (Edwards, 2006). The evidence can be seen from the cases where traditional intermediaries still exist and even deploy ICT in running their task (e.g. collect aspiration from citizens through mobile phone, e-mail or web) (Edwards, 2006). Another evidence is the emergence of new ICT-enabled intermediaries such as online discussion and online social movement (Avila et al., 2010).

What are the advantages of the presence of the intermediaries in transparency initiatives? One of the advantages comes from the nature of the intermediaries. The strength of intermediary is its position which mediate and connect two parties (Anderson & Anderson, 2002). Intermediaries own knowledge about the

need, demand, and source from parties they mediate. They then use the knowledge to match the need of parties involved and solve problems (Barnes & Hinton, 2007). The important of this mediation role can be seen in various fields. One of them is in political context where intermediaries facilitate citizens-government interaction, aggregate and articulate citizens' aspiration to the government (Edwards, 2006).

In transparency context, intermediaries mediate citizens-government interaction and help to solve problems around transparency (see section 2.1.3). The ICT enables those functions. Here are some examples of mediation and solving problems around transparency using ICT:

- 1) In some cases, the information related transparency is not provided by government. Intermediary such as Mumbai Votes using internet and social network platform to provide information about political process such as promise of politicians, the profile of candidate, and the realization of the promise (<u>http://mumbaivotes.com/</u>). The information is obtained from various sources such as newspaper archives, online interview or campaign materials. It then publishes information in internet that available for everyone. This addresses problems related to the government's limitation in providing data.
- 2) ICT enables intermediaries customize the data (Sasaki et al., 2010). This effort eases citizens to comprehend the government information. Budget tracking tools transform budget data from government into readable and attractive budget allocation information (Sasaki et al., 2010). Originally the data is difficult to understand since still in raw format database. This addresses transparency problem regarding the data.
- 3) ICT also allows aggregating, sharing, and articulating the information. For example, Kiirti collects citizens' complaint about public services through SMS report. Then, it channels the complaints to responsible public authority to find resolution (Fung et al., 2010). Here, the intermediary has helped to resolve the problems with regards to citizens' lack of power to influence government.

With regards to the potential power of ICT and citizen's participation in transparency initiatives, there are some research that explore that issue. Sasaki et al (2010) has identified and documented 37 cases where ordinary citizens, NGOs and CSOs enabled by ICT strive for transparency and accountability. It provides basic description and context where the transparency initiatives conducted. Likewise, Avila, et al (2010) documented 63 cases around the world of transparency and accountability movement powered by ICT. It maps the cases based on the actors involved, the kind of ICT used, function and geographic level. It also describes how the projects work, the role of ICT inside the projects and the way citizens involve. In line with those two research Fung et al (2010) take several cases from the work of Sasaki et al (2010). Fung et al (2010) then observe further the selected cases and develop socio political perspective of ICT intervention in transparency and accountability projects. Fung urges that technology intervention should not only be seen as technical matters. There are factors such as socio-political context, organizational strategy and technological design which should be taken into account when conducting transparency and accountability efforts. Another research is SEMA (Sensor, Empowerment and Accountability) project (Georgiadou et al., 2011). It wants to understand how citizens through Human Sensor Web platform can improve government accountability in delivering public services.

Several research mentioned above observe transparency initiatives conducted by parties outside of government which enabled by ICT. This research has similar concern, but focusing in several things. What this research does is to evaluate the worth of some characteristics of the parties (some of them considered as intermediaries in this research) in furthering public aims. This research also focuses on a subset of ICT used for conducting transparency project namely geo ICT. However, before the evaluation, this research needs to identify the characteristics of the intermediaries. The lesson mainly drawn from the research mentioned above is used as the basis for the identification task in this research.

2.5. Geo ICT-enabled intermediaries in transparency initiatives

As well as ICT-enabled intermediaries, geo ICT-enabled intermediaries have similarity in roles and the reason behind the emergence. One of things that make geo ICT-enabled intermediaries different is the use of geo-ICT. This section is more devoted to describe the use of geo ICT by the intermediaries in transparency initiatives while the explanation about the intermediaries has been covered in section 2.4.

Geo ICT is a subset of ICT which specifically deal with geospatial information and technology (de Vries, 2008). As a technological means, geo ICT is shaped by social circumstance and vice versa the geo ICT itself can have social impacts amid society (Akingbade, Navarra, & Georgiadou, 2009). One of the strengths of geo ICT is it provides spatial information to support decision making. Its crucial role in governance is particularly to support policy making process which deals with spatial components (Georgiadou & Miscione, 2009).

In conjunction with transparency, geo ICT is used particularly for information provision. It has strength in aggregating and customizing information. Tool like a map can visualize a lot of information in one display which can include location, events around the location, pictures, neighbourhood condition and any information embedded in the location. Good visualization of information that eases the interpretation can enhance the possibility of information to be embedded in users' perception and then lead to user's action (Fung et al., 2007). In transparency initiative, information embedment is important to change behaviour either users of information or targeted entities (Fung et al., 2010).

Beside aggregating and customizing information, geo ICT at this moment also allows anyone to contribute in spatial information provision. Thanks to combination of Geo ICT and web 2.0 service that has enabled collaborative production and publication of spatial information massively (Goodchild, 2007) by just using means such as mobile phone or laptop (Goldman et al., 2009). Some examples of collaborative spatial information production are Openstreetmap (<u>http://www.openstreetmap.org/</u>), Ushahidi (<u>http://ushahidi.com/</u>), and wikimapia (<u>http://wikimapia.org</u>. Even, at this moment there are many social network have embedded geo-information in their facilities (Boulos et al., 2011). For examples; twitter (<u>https://twitter.com/</u>), foursquare (<u>https://foursquare.com/</u>), and geochat (<u>http://geochat.instedd.org/</u>). The embedment of geo aspect in social network increases possibility for information production.

In transparency initiatives, I consider geo ICT as any means to retrieve, generate, aggregate and display spatial information related to transparency. It can include the use of Google maps, openstreetmap, Ushahidi, foursquare, map visualisation and any platform/means embedded such as , twitter, SMS, e-mail, mobile phone, laptop, GPS, sensors, camera, recorder etc.

Thus, geo ICT-enabled intermediary in transparency initiative is intermediary in citizens-government relation that deploys geo ICT to carry out effort to enhance public aims by generating/contributing information for public. This type of intermediary combines the strength of intermediaries' roles and geo ICT. This combination is considered will offer added value in transparency initiatives.

2.6. Transparency realm

The concept introduced above shows the context of transparency realm where the geo ICT-enabled intermediaries emerge. The context particularly is within the third generation of transparency which is characterized by collaborative production and customization of information. Within the context, the ICT and participatory sensing approach are utilized to improve transparency. The advancement of ICT which increases possibility for anyone to contribute in generating information has enabled the intermediaries to initiate transparency initiatives. Here, the intermediaries overcome problems related transparency that can

deter the purpose of applying transparency. The initiatives conducted essentially attempt to make information available for public in order to achieve public aims.

Among the intermediaries, some of them harness the potential of geo ICT in conducting the transparency initiatives. Geo ICT is good for aggregating and customizing information. Customized and aggregated information -that can ease the users to comprehend- may enhance possibility of the information to be embedded in users' decision making process. The added value of geo ICT and intermediation roles in transparency initiative will be examined further in the remaining chapters. The focus of this research on the use of geo ICT and intermediation role is a subset of a wider research context which observes how technology can bring greater impact on transparency.

3. GEO ICT-ENABLED INTERMEDIARIES

This chapter addresses the first research objective of describing the characteristics of geo ICT-enabled intermediaries in transparency realm. It identifies features to be seen when evaluating the characteristics in the empirical case. The features identified should show the identity, context and other important things inherent within the intermediaries that contribute to achieving goals related transparency. The approach used is by examining a number of cases to construct a classification of the characteristics.

The characterizing task addresses multiple research questions as follows; who or what the geo ICT enabled intermediaries (research question 1), which (common and specific) characteristics they exhibit (research question 2), how they are traced (research question 3), and how they emerge and who are behind them (research question 4).

I address this objective in 4 steps. First, I explain the method to derive the characteristics in section 3.1. Secondly, I describe the characteristics of the cases of transparency initiatives to show the context where the intermediaries emerge in section 3.2. Then I describe the characteristics of the intermediaries in section 3.3. Finally, I conclude by linking the characteristics derived to the research question addressed.

3.1. Deriving characteristics of the transparency initiatives and the geo ICT-enabled intermediaries

The ICT-enabled intermediaries face challenges in transparency initiatives. Fung et al (2007) has noticed that the challenges are related to the nature of third generation of transparency. The challenges are; 1) Working without mandate means no obligation for targeted entities to respond any effort attempts to influence their behaviour; 2) Information is vulnerable of manipulation. This is because there is no standardized requirement in the way data customized and the power of technology to magnify information; 3) Responsibility and credibility of the information. Technology enables information contributors to hide their profile. This causes the information provided lose credibility.

Facing the challenges, the ICT-enabled intermediaries are assumed to develop ways to adapt in order to achieve ultimate goals of transparency. The adaptation may be reflected in intermediaries' characteristics and the characteristics may influence the success of the transparency initiatives. Thus, it is valuable to know the worth of the characteristics in transparency initiatives. However, before the evaluation process to know the worth of the characteristics, it needs prior knowledge and implies identification task.

This research does the identification by examining the research/project reports documenting transparency initiatives and checking the web pages of the initiatives. The reports are: 1) Global mapping of technology for transparency and accountability by Avila et al (2010), 2) Documentation from Technology for Transparency Network which contains 63 case documents, interview transcription and links to web pages of the initiatives (http://transparency.globalvoicesonline.org/projects/all).

After examining the 63 cases listed in the report and checking the 63 websites, 19 projects where geo ICT used are selected. Then, to derive the characteristics of both the cases and the intermediaries, I make a matrix where each column contains information that can be used to classify the characteristics.

Considerations in defining the classification of the characteristics are:

- 1) It can clearly describe common identity of the geo ICT-enabled intermediaries;
- 2) It can exhibit common and specific characteristics;
- 3) It contains overall information of how the intermediaries can be traced;

4) It should illustrate generally the way of the geo ICT-enabled intermediaries dealing with challenges such as incentives for discloser of information and targeted entities, and credibility of information.

The methods in defining the classification of the characteristics are:

- 1) The points that become the concern to be observed are derived from literatures that discuss about transparency initiatives such as:
 - Full disclosure: The perils and promise of transparency (Fung et al., 2007)
 - The role of technology and citizen media in promoting transparency, accountability and civic participation (Sasaki et al., 2010)
 - Impact case studies from middle income and developing countries (Fung et al., 2010)
 - Global mapping of technology for transparency and accountability (Avila et al., 2010)
 - Sensors, empowerment, and accountability: a Digital Earth view from East Africa (Georgiadou et al., 2011)
 - Practical ethics for PGIS practitioners, facilitators, technology intermediaries and researchers (Rambaldi, Chambers, Mccall, & Fox, 2006)

These literatures are taken to give insight of transparency initiatives, activities within, the parties that involve, assumptions used, ethics issues and factors that contribute to transparency goals achievement.

- 2) From the literatures, the points obtained are set to become columns in the matrix.
- 3) The information from each column is the source of the characterization.
 - The columns are follows:

Column 1	:	Name of the initiatives or projects of transparency as well as place and coverage
		area
Column 2	:	Who or what the intermediaries within the initiatives/projects
Column 3	:	Activities of the intermediaries (brief description of main activities related to the
		transparency)
Column 4	:	Tools and method for data collection used in information disclosure
Column 5	:	Tools and method for data presentation used in information disclosure
Column 6	:	The ways to spread the information about the initiatives
Column 7	:	Funding and partnership
Column 8	:	Disclosers of information in the transparency initiatives/projects
Column 9	:	Targeted entities of the transparency initiatives/projects
Column 10	:	The credibility of information disclosed
Column 11	:	Incentives scheme offered to parties who contribute to disclose the information
		in the transparency initiatives
Column 12	:	Incentives scheme offered to parties whose behaviour want to be influenced by
		the transparency initiatives

4) Information from the columns in the matrix then used to derive the classification that conforms to considerations.

The first research objective necessitates describing only the characteristics of geo ICT-enabled intermediaries in transparency realm. However, when trying to create the classification of the intermediaries' characteristics, I found that it would be mixed with the classification of characteristics of the cases/initiatives whereby the intermediaries involved. The mixed is more due to unclear boundary between those types of characteristics. Suppose if I just take the characteristics of the intermediaries and eliminate the characteristics of the cases/initiatives, it would be difficult to have a

more detail description that explains how the characteristics may influence the achievement of transparency goals. After all, the transparency initiatives' characteristics can show the context of which the intermediaries emerge. Thus, I take the characteristics of both the cases and the intermediaries but separating them in different sections.

The characteristics of the cases are features that more attached to the initiatives/projects. These include; the roles, parties involved within the transparency initiatives, funding and partnership, incentives scheme offered and credibility of the information disclosed. Meanwhile, the characteristics of the geo ICT-enabled intermediaries are features attached to the intermediary itself as an entity within the initiative which strives for transparency. These include; the form of the intermediaries, tools and methods used, position of the intermediaries in relation with other parties, and how the initiatives traced. The next two sections show respectively the classification of the characteristics of both the initiatives and the intermediaries derived from 19 selected cases.

3.2. Characteristics of the transparency initiatives

The matrix of transparency initiatives (appendix 2) contains points obtained from the examination of documented reports and visiting the web page of the 19 cases. From the matrix, the classifications of the characteristics are derived where one class can be extracted from one or multiple columns of the matrix. The classifications should show common features of transparency initiatives. Those are in the next following subsections:

3.2.1. The roles of the transparency initiatives

The roles meant here are functions of the transparency initiatives amid the society. These vary following transparency goals which are stated either in the documents on the website or in the interview documentations. Knowing the roles of certain transparency initiatives can give a glance of what kind of activities and what kind of intermediaries may exist within the initiatives. This classification is derived from column 3 of the matrix (appendix 2). The roles are:

- a. Building awareness of citizens through providing information, news, and data. This covers diverse issues such as human rights, civic rights, politics
- b. Empowering citizens by involving them in discussing about political issues and monitoring their representatives.
- c. Informing and educating citizens by allowing them to view their representative, simulate their view on certain issues and confront the view with legislators' view.
- d. Supporting for fair governmental and political process. The initiatives' mission is to monitor the political process such as election, report abuse of power, corruption and bribe.
- e. Aggregating and articulating citizens' voice. The initiative consists of tasks such as collecting citizens' complaints or as aspirations and then channeling the aggregated aspirations/complaints using various means and methods.
- f. Helping voter to make choice in election. This is done by providing profile of candidate and their political view.

3.2.2. Parties involved within the transparency initiatives (initiators, discloser of information and targeted entities)

This classification is derived from column 1, 8, 9 and 10 of the matrix. Information about initiator of the initiatives may show implicitly about background, motives and even interest behind the initiatives. For

example, the purpose of the initiative and the way it is conducted may be different if the initiator is from government instead of ordinary citizens or NGOs/CSOs.

I found from the cases that some initiatives originate from ordinary citizens either as individual or groups. Others are initiated by journalist, academicians, professional, and activists. Also, there are NGOs, CSOs and non-profit organizations as the initiators. Even, there is one commercial company out of those. However, none out of the 19 case originates from government.

The disclosers of information are the main source where information for the initiatives comes. Rely on certain type of source may determine different quality, credibility and effect of the information. For example, information from crowd source may have lower credibility than other types, but may have more power due to the large number of participants. I found this type is dominant. It is 11 out of 19 cases. Other type may have higher credibility due to more rigorous and carefully method as well as filtering mechanism in the process of obtaining information. Those are trained or certified persons who capture the information in the field and also researchers who unearth data from government's websites.

Targeted entities mostly are parties that have political power. The main reason for this is because those parties' behaviour can have significant effect towards society. Recognizing the right targeted entities can help initiatives pursuing the defined goals which are mainly regarding furthering public aims. Those targeted parties include government bodies, public service providers, parliament members, police, political parties, municipalities, judiciaries and candidates for public offices.

3.2.3. Funding and partnership

Information about fund sources may imply in/dependency and sustainability of the initiatives. Information about partnership may shows supports and helps from other entities as well as network. The source of this classification is column 7.

Some initiatives get fund from their members' own pocket, from international donor and from businessman. While some other get donation from donation. None of them get fund from government.

Having partnership with other entities can mean having support that can be technical, logistics, fund, information, and political support. From the examined cases, there are supports such as translating local language into English as well as technical training before deploying Ushahidi platform from expert organization. The type of partners vary which include local and national NGOs, universities, professional organizations, company, international foundations, researchers and even government bodies.

3.2.4. Incentives scheme offered

This classification developed from column 3, 11 and 12. It describes scheme of incentives offered for disclosers to provide information and for targeted entities to change their behaviour as the response to the transparency initiatives.

Incentives for the disclosers may determine whether they want to participate in the initiatives by submitting information. From the selected cases, most efforts are motivated by a value of fairness, justice, transparency, accountability and fight against corruption. Citizens' motivation, besides strive for virtue, are also related to their interest. Citizens need to voice their demands, looking for resolution and appeal for development of their environment. In one case, discloser of information is a group of students. They involve in the project as the requirement for obtaining academic credit.

Incentives for targeted entities may enhance the likelihood of those entities to respond any effort to change their behaviour. In the examined reports and websites, only a few evidences given that the

incentives offered have influenced to the change of targeted behaviour. Most of the cases just show the theory about how the conducted initiatives can lead to the change. One of those is the type of "ashamed" mechanism. For example, by publishing violence such as vote-buying or bribe widely to the public, it is expected that the targeted actors will feel ashamed and then change their behaviour. Another scenario is triggering authorized government institution to take action over inappropriate behaviour. This is done by make a report directly or indirectly to the authorized institution. While other initiatives use voter penalty by suggesting citizens to not choosing the politician in the next election if they do not implement their promises during campaign.

3.2.5. Credibility of the disclosed information

Credibility of information affects the use of information by other parties as well as whether it can influence the target groups. Users of the information disclosed can be media, citizens, NGOs, and other transparency initiatives. This classification stems from column 10 and shows the characteristics of how the transparency initiatives address credibility issues.

The examination shows that some projects do not verify information that comes from crowd source and just publish it as it is. While other oblige reporters to register before submit the report, so the reporters' identity can be traced. Some others are ensuring the validity of information by just relying on trained or certified monitors to get the data, not from the crowd sources. However, there are also initiatives that combine both data from trained monitors and crowd sources. The other way to ensure credibility is by distinguishing the information disclosed with colour code showing which one it is from verified or which from unverified source.

3.3. Characteristics of the geo ICT-enabled intermediaries

These classifications can show common features of the geo ICT-enabled intermediaries which strive for transparency. Those are in the next following subsections:

3.3.1. The forms of geo ICT-enabled intermediaries

This classification stems from column 2 of appendix 2. The forms meant here is the appearance of the intermediaries either as organizations, persons or virtual entities such as website, online portal, internet platform and so forth. Knowing the form of intermediary may show the realm where their activities take place and who are the users. For example, internet platform will mostly move through only network, thus only people with internet access who can use it. Determining the form of these intermediaries is a tricky task, especially when categorizing intermediaries as virtual entities. This is because sometimes intermediary is considered as human or a group of human and not non-living things. However, some literatures (Anderson & Anderson, 2002; Barnes & Hinton, 2007; Edwards, 2006) which discuss about intermediaries in cyber world suggest that intermediaries can be virtual entity. It is also tricky when determining whether human behind the virtual entity or the entity itself which is the intermediary. So, this differentiation determined by looking at the process whether it is predominantly controlled by human behind the entity or automated by the machine. Who or what which is more dominant will be the intermediary. Below are some forms of the geo ICT-enabled intermediaries;

 Group of volunteered citizens: This is not a formal organization. It consists of people who care on issues like social change, transparency and government accountability. e.g.: Sharek961

- Network of organization: Various organization and individuals that care on changes and have the same vision unite in a network. This network then arranges its own programs and activities which one of the programs is related to transparency.
 e.g.: ALTSEAN-Burma
- Online meeting medium: It is a virtual place for people that interested in social change to meet, share experiences, offers solution and discussed about politics e.g.: Tak-Tak-Tak
- 4) Online portal: website that provide links and access to data and information e.g.: Sejmometer, Democrator, Sithi
- Election observer/monitor organizations: Those specifically monitor the election process in their country, either in national or regional level.
 e.g.: Golos, Amatora Mu Mahoro, Cuidemos el Voto, Sudan vote monitor, Centre for monitoring election violence, voter report PH
- 6) Online database and visualization tool. Provide a large amount of data that can be accessed by citizens through internet as well as perform and display data requested in attractive way and depend on users' query.

e.g.: Excelencias, Dinero Y Politica, and Votenaweb

- 7) Social network platform : Connect people and provide information only within the network e.g.: Ijanaagraha
- 8) NGO/CSO which specifically concern on issues transparency and accountability. e.g.: Mumbai votes (monitor politician before and after elected)
- Complaint platform: A medium that allow citizens to complaint about public services and connect the complaint to government.
 e.g.: Kiirti.

3.3.2. Tools and methods used

This classification shows common tools and methods used by the geo ICT-enabled intermediaries either to collect or present the information related transparency. It is developed from column 4 and 5. The tools and methods determined by resources and technology limitation in the coverage area. Knowing the tools and methods can show technological design to help intermediaries achieve their goal. In term of transparency, a good tools and methods should provide valuable, accessible and comprehensible information for users. The increase of the likelihood to use the information given can enhance the likelihood of the intended changes to occur. Below are several tools and methods from the 19 cases:

- a. Data collection
 - Internet based tools such as; web form and twitter. Through these means citizens are asked to submit reports/information relevant to the transparency.

Ushahidi and Uchaguzi are also internet based tools which through these means any reporter can pinpoint location of problem reported. Report/information from web form and twitter can also be connected to Ushahidi and Uchaguzi.

- In the areas that are not covered by internet networks, mobile phone based tools are effective to send information. These include; SMS and phone call.
- Other data is gained by accessing government officials' website. Besides, research through interview, collecting newspaper clipping and campaign posters, and record of politicians' promises are conducted to unearth hidden and scattered data.
- b. Data presentation

The use of map to show spatial information and to aggregate available information is the prominent tool. Ushahidi is the dominant platform. There are also Uchaguzi (derivative platform of Ushahidi), Google maps and Openstreet maps. Beside, simple map visualization in jpg format also used to describe and frame the information based on location.

These maps contain rich data and information in a single visualization. For example, election violence map provide point of the incident, the information of kind of accident, sometimes equipped with photo as the evidences. The data displayed can also be customized based on users' query. It is easy to operate. It also provides visualization that can give understanding of the data. However, these maps are accessible only for everyone with internet connection.

3.3.3. Position of the geo ICT-enabled intermediaries in relation with other parties

This classification shows common position of the intermediaries in the relation between citizens and parties like government, legislatives, judicative, political parties, and politicians. It is developed from column 2, 3, 7, 11 and 12 of matrix 1. This position can be seen in figure 3.1.

In general, the intermediaries act as the only mediator within the relationship. Here, the intermediaries get input (reports, complaints) from citizens and disclose the information and expect this information will reach targeted entities. The input flow from citizens described as the line arrows. In some case, instead receive input directly from citizens there are other intermediaries (media, trained monitors) between citizens and the geo ICT-enabled intermediaries (the input flow shown in dashed line).

Most of the cases cannot provide evidence whether the disclosed information reach and influence the targeted entities. Thus, in the figure 3.1 the arrows from the intermediaries towards targeted entities are only two out of nine. These two arrows can reach targeted entities because they build partnership with the government bodies.

Arrows from targeted entities to citizens are the cases where the sources of information disclosed are from those targeted entities. This information then is accessed by citizens as part of monitoring and controlling task of citizens over government. Here, there is another type of intermediary (researchers) between the targeted entities and the geo ICT-enabled intermediaries.

3.3.4. How the geo ICT-enabled intermediaries traced

The existences of the intermediaries with their activities are sometimes hard to find since they operate mostly only through internet. However, they do diverse ways to make their activities discovered by many people as well as targeted entities. This classification is developed from column 6 and shows the ways how the intermediaries and their activities can be traced.

From the 19 cases, I found that some intermediaries advertise their projects through newspaper or radio, so citizens can view or listen and interested to involve. Promotions about their activities also conducted through workshop or press conferences. However some of them cannot make advertisements in the media due to the lack of time and budget. For those whose budgets are tight, the promotion is simply by spreading information through mouth-to-mouth of their network and partners. Other do creative ways by creating hashtag on twitter and/or making Facebook fan page.



Figure 3.1 Position of geo ICT-enabled Intermediaries in relation with other parties within transparency initiatives

3.4. Geo ICT-enabled intermediaries in the transparency realm

Based on the examination of 19 selected cases, I created classifications of characteristics of both transparency initiatives and the geo ICT-enabled intermediaries. The classification is a part of identification task required by the first objective of this research before assessing the worth of those characteristics. Basically, it identifies and groups common features of both the initiatives and the intermediaries. This identification helps to guide researcher in determining which points to be observed in the evaluation task. Classification of the transparency initiatives (needed to identify and explain the context of which the intermediaries involved) together with classification of intermediaries' characteristics are expected to explain the contribution of those characteristics to the achievement of the transparency aims.

The classifications and the descriptions address research question 1 of the identity of geo ICT-enabled intermediaries in transparency realm. The intermediaries can be a group of persons or an organization such as group of volunteered citizens, network of organizations, election observer/monitor organizations and NGO/CSO. The intermediaries can also be in virtual form such as online meeting medium, online portal, online database and visualization tool, social network platform and complaint platform.

Common and specific characteristics of geo ICT-enabled intermediaries (research question 2) were shown in the tools and methods used either to collect data or to present the information disclosure, the position of the intermediaries amid other entities and the way the intermediaries traced. Web form and twitter are common means to obtain data and information from citizens. Ushahidi and Uchaguzi platform are used to get spatial information. Other means used especially to deal with limitation of internet network are SMS and phone call. For information disclosure, Ushahidi is the common platform for monitoring election, defective public service and politicians' promises. Besides Ushahidi, Google maps, Openstreet maps are also common to provide spatial information and only a few that use maps in jpg format. In transparency initiatives, the geo ICT-enabled intermediaries are generally positioned between citizens and targeted entities, receiving input (reports, complaints, information) from citizens and disclose the information. In a few cases some other parties (media, trained/certified monitors, and researchers) occur and mediate the relation between citizens and geo ICT-enabled intermediaries as well as between targeted entities and the intermediaries.

The geo ICT-enabled intermediaries can be traced (research question 3) through diverse ways. Those are sought through the organization network as well as internet social network (twitter, Facebook, etc.), advertisement in the newspaper or radio, workshop and press conferences that concern on transparency and accountability issues.

The emergence of the transparency initiatives of which the geo ICT-enabled intermediaries involved were mostly encouraged by value of fairness, justice, transparency, and accountability. These initiatives commonly originated from citizens, NGO, journalist, academicians, professional, and activists. Only one case found that was initiated by businessman. The description of the emergence and the initiators of the geo ICT-enabled intermediaries address research question 4.

4. METHODS TO EVALUATE THE CASE STUDY

After the characterizing task in chapter 3, this chapter deals with the methods to evaluate the worth of the characteristics in particular empirical case. This chapter addresses research question 5, 6, 7 and 8 which are respectively about techniques and tools to evaluate, empirical indicators needed in evaluating, determining the appropriate case to study, and characteristics of the case study.

To address the research questions, this chapter uses the following steps: Section 4.1 describes the overarching approach in conducting the evaluation research. It is followed by section 4.2 which defining the evaluation research framework to keep the research structured. Then, the next section 4.3 explains the case study selection, followed by section 4.4 about the data collection methods includes kind of data needed, sources, method to obtain, resources and tools needed. Section 4.5 explains data analysis and interpretation methods. Finally, section 4.6 is conclusion.

4.1. The overarching research approach

This research examines the relation between geo ICT-enabled intermediary's characteristics and the changes related transparency in a particular case. To understand and explain the relation, this research employs case study approach. The case study observes and studies a single case to understand its complexity and its important in a certain circumstance (Stake, 1995). The reason of deploying this method is because it is suited with the evaluation task of this research which needs explanation of a certain relation in a certain context. That can be described with case study approach. Furthermore, the case study method is suitable to examine contemporary events. It does not separate the event from the real-life context like what usually done in laboratory research (Yin, 2002). As the complexity of intermediation cannot be understood without the context in the intermediation, it is best to study the elements at the same time within a given case study.

4.2. The research framework

This research aims to evaluate the worth of the characteristics of geo ICT-enabled intermediary in transparency initiative. It seeks whether the characteristics affect the achievement of public goals set by transparency initiative. Thus, it entails investigation of the characteristics of certain geo ICT-enabled intermediary and the characteristics of the empirical case. To construct the evaluation in an order way, it is essential to have a framework. The framework is developed based on the literatures on evaluation (Coenen & Lulofs, 2011; Patton, 1988) and lesson learned from the identification task in chapter 3. The framework guides which data and information from the transparency initiatives and from the intermediaries to be sought and analysed. The framework is in following sequences:

- 1) Describing the implementation of transparency initiative in the selected case
- 2) Examining the transparency initiative to derive the defined goals of the initiative
- 3) Choosing the evaluation criteria for the goals achievement
- 4) Examining the geo ICT-enabled intermediary to derive its characteristics based on classification of chapter 3
- 5) Determining the extent of which the chosen criteria have been accomplished
- 6) Determining the influences of the geo ICT-enabled intermediaries' characteristics towards goals achievement
- 7) Gaining insight to the factors that drive the goals achievement
- 8) Examining unexpected effects of the information disclosure as well as unexpected parties that take opportunities from information disclosure.

4.3. The case study selection

The case study is a transparency initiative that should meet the criteria as follows:

- 1) It has a purpose to further public aims by generating/providing information for public
- 2) It is conducted and/or involves the geo ICT-enabled intermediaries
- 3) It has observable impact (such as used by many people, influence government decisions)
- 4) Located in the Netherlands (where the research take place)

The search of the case is done through the internet using Google search engine. The key words typed are; transparency initiative, transparency app, transparency platform (intermediaries can be an application or internet platform) combined with Netherlands or Dutch. The lists of the results are examined for the relevance. Besides, the search also done by examining the web page which provides profiles of NGOs in the Netherlands such as <u>Dutch NGO data base</u> to find NGOs that work for transparency initiatives. Other way to search is by installing Ushahidi application in android phone. This instalment is inspired by finding in chapter 3 where many of geo ICT enabled intermediaries use this application. By installing the Ushahidi application, I can detect any project using Ushahidi within radius maximum 1500 km. I set the range of the radius up to 750 km so it can cover the whole the Netherlands. From the search I could not find case which fit with the criteria. Another way of searching includes asking to the experts in geo ICT which then lead to the finding of the case.

The case to study is citizen reporting system on public space issues in Dutch municipalities. The case is about the way of citizens to report any problem found in street or neighbourhood (such as litters, holes in the street, gravity and broken street lamp etc.) to municipality to get resolution. This case study is chosen due to transparency aspect, the use of geo-ICT and the present of intermediaries within the system. It is transparent because information about the report made by citizens as well as any response from municipalities toward the problems reported is available for public, at least for the reporter. The use of geo ICT is in form that the problem reported is equipped with spatial information and displayed in a map. While the intermediaries present in fact that the relation between citizens-municipalities in this case is mediated by smartphone applications (app/apps). Among a number of such applications in the Netherlands, there are two that are prominent and included in this research. Those are *Verbeterdebnurt* (www.verbeterdebnurt.nl) and *Buitenbeter* (www.buitenbeter.nl) which are claimed can be used by citizens in almost all regions in the Netherlands.

This research specifically observes the case in Municipality of Enschede. Access, the availability and willingness of contact persons who deals with citizens reporting system has made the Municipality of Enschede chosen for this research. Thus, the choosing of Municipality of Enschede is more a convenience based (Barnes & Hinton, 2007) and not directly be a representative of the whole Dutch Municipalities' reporting system. It is not intended to generate a statistical inference by generalizing from sample to population like quantitative research usually does, but more to establish a logical inference (Barnes & Hinton, 2007; Yin, 2002).

4.4. Data collection

This research relies on evidences from observations (either direct observation or participant observation), interviews, documents, archival records and physical artefacts which all derived from the case study (Walsham, 1995; Yin, 2002). The table 4.1 below summaries the kind of data needed and the way it obtained.

	Kind of data needed	Sources	Method to obtain the data	Resources/tools
1.	The characteristics of geo ICT-enabled intermediaries	The app website: a. <u>www.verbeterdebuurt.nl</u> b. <u>www.buitenbeter.nl</u>	- Conducting web content analysis to obtain relevant information based on classification of characteristics from chapter 3	 Internet access Matrix of characteristics <i>Chrome</i> web browser. It has automatic language translation
		The apps interface	 Installing the apps and examining the information on the interface Test the apps to examine how it works 	- Mobile phone with operating system android
2.	The goals statement of the	1) Documents or artefacts in the website:	Web content analysis	 Internet access <i>Chrome</i> web
3.	initiative Information, artefacts or	a. <u>www.enschede.nl</u> b. <u>www.verbeterdebuurt.nl</u> c. www.buitenbeter.nl		browser.
	documents to describe the	2) Documents from municipality	Request to the municipality staff members	- E-mail
4.	fulfilment of goals achievement criteria Information, artefacts or	3) Municipality staff members that deals with reporting system	Conducting semi-structured interview	- A set of questions about transparency initiative, goals and achievement
	documents that indicate the influence of the characteristics of the geo ICT- enabled intermediary toward the goals achievement	4) Developers of the apps	Conducting semi-structured interview	 Recorder A set of questions about the apps vision, goals, how it works, and transparency aspects Recorder
5.	The present of unexpected effects/parties of information disclosure	 Municipality staffs members that deals with reporting system Developer of the apps 	Semi structured interview	Questions about the presence of effects/parties due to the information disclosure

Table 4.1 Types of data collected and methods employed

Web content analysis was conducted by exploring the official websites of Municipality of Enschede, *verbeterdebuurt* and *buitenbeter*. Information about aims related transparency and how to achieve the aims as well as characteristics of the case and the intermediaries were investigated. This required searching and reading relevant pages in those websites. Points obtained from the websites were confirmed and grouped with other information from other sources (interview and observation). In addition, screen captures of website interface were also taken towards certain given information as evidences to support argumentation.

From the Municipality of Enschede website, information sought were how the municipality introduce the reporting system, kind of information related reporting system that available for public and how transparency initiatives established. The data searched also include any document or artefact relevant especially report or news about reporting systems, the goals/aims related transparency and the implementation. While web content analysis toward both *verbeterdebuart* and *buitenbeter* website were conducted to study how the apps work, transparency aspects, network and the relation with municipality. This is mainly to derive characteristics of both apps and how the characteristics influence the aims/goals related transparency.

In doing the web content analysis, researcher using *chrome* web browser. It has automatic language translation that is useful when analysing Dutch web pages. The automatic translation was set into Dutch to English. However, the automatic translation sometimes did not give clear information. Thus, this deficiency was addressed by combining other sources of information such as interviews and direct observation.

Further and more rigorous information was acquired from semi-structured interview. The interviews were conducted with the Deputy Head of Public Space of Municipality of Enschede, Internet Communication Advisor of Municipality of Enschede and the developer of *Verbeterdeburt* app. Other targeted interviewees such as Senior Advisor on Public Service Provision and Interoperability of Information Systems of Municipality of Enschede, and the developer of *Buitenbeter* app until this research written have not replied the interview requests.

The interviews explored the implementation of the transparency initiatives and the roles of geo ICTenabled intermediaries towards the achievement of the defined goals from transparency policy. The interviews took times about 30 minutes to 1 hour duration. The questions of the interview were developed from the literature reviews and lesson gained from the observation of documented transparency initiatives (see chapter 3). The questions were divided into two sets; one for municipality staff members and one for the app developer. The set of questions for the municipality concerns the mechanism of citizens reporting system, transparency initiative' goals, the use of geo ICT, the roles of intermediaries, the intended and the unintended effect of information disclosure and other parties that occurs due to transparency policy. The second set of question for app developer related to mechanism and organization of the app, transparency aspects, aims of the initiative, target groups of the app, the use of geo ICT, data treatment, partnership, and effects as well as parties that occurs due to information disclosure.

As part of research ethics, after conducting the interview researcher made a summary of the interview and sent it to the interviewees. This was done to ensure whether researcher understands and quotes correctly what the interviewees want to say as well as to know whether there is any objection towards the result of the interview.

Direct observation was conducted by installing both the apps in researcher's android mobile phone. After installation, the researcher explored the apps interface and registered to the apps by submitting personal information. The registration allows the researcher to make a report of problem found in the public space. The researcher also tried to report problems found in the streets (litters) through both the apps.

The documents were obtained from the Deputy Head of Public Space of Municipality of Enschede which contains; a) number of citizens' complaints/reports from 2007 to 13 May 2011 classified in problems category; b) number of citizens' complaints/reports during January 2011 and time response of the municipality towards the problems; and c) summary report of the municipality that discussed about the increased number of complaints from 2007 to 2010.

Several sources of the interview from the municipality are needed for triangulation. While triangulation for *verbeterdebuurt* and *buitenbeter* app observation was done by combining direct observation, interview and web content analysis as well information from municipality staffs. Unfortunately, interview with *buitenbeter* developer cannot be conducted due to there is no response from the developer toward the interview request.

4.5. Data analysis and interpretation

The data analysis and interpretation involves describing, arranging and explaining the data collected in the form which conforms to the framework (see section 4.2).

The data analysis presents the data as follows:

- 1) Describing the implementation of transparency initiative of the citizens reporting system on public space issues in Municipality of Enschede. The description here refers to the classification of characteristics of the transparency case (see section 3.2).
- 2) Describing and explaining the defined goals of the transparency initiative as well as the evaluation criteria for the goals achievement
- 3) Describing the characteristics of Verbeterdebuurt and Buitenbeter
- 4) Describing the extent of which the chosen criteria have been accomplished
- 5) Describing unexpected effects of information disclosure as well as unexpected parties that take opportunities from information disclosure

This analysis is put in chapter 5. Meanwhile, the interpretation is discussed in chapter 6. The interpretation includes:

- 1) Building logic explanation of the influences of the geo ICT-enabled intermediary's characteristics towards transparency and goals achievement
- 2) Gaining insight to the factors that drive the goals achievement
- 3) Gaining insight to the occurrence of unexpected effects and unexpected parties of information disclosure

4.6. Conclusion

This chapter deals with the way to evaluate the geo ICT-enabled intermediary's characteristics and particularly addresses research question 5, 6, 7 and 8.

Research question 5 is about the choice of research methodology. I derived that a case study approach is most appropriate, because it is not yet clear how intermediaries operate within the municipal environment and what kind of effects they have on their environment. Moreover, it was considered that the technological apps could be closely linked to the context and interests of app developers. Given this complexity a case study approach was most suitable.

Research question 6 deals with empirical indicators for the evaluation. The indicators were determined by the characteristics of the geo ICT-enabled intermediaries and the extent of the characteristics contributes

to the achievement of transparency goals defined in the case study. This implies this research to examine and to present the characteristics of the case study as well as the characteristics of the intermediaries, and the goals achievement. From this examination (described later in chapter 5) derived indicators which are the extent of contribution of the characteristics towards effectiveness, efficiency and citizens' participation in managing public space management of municipality of Enschede.

The choice of citizens reporting system on public space issues in Municipality of Enschede as the case study addresses research question 7 (which case appropriate to study). An overview of the case study (section 4.3) has partly addressed research question 8 which is about characteristics of the case. The characteristics are featured by the presence of transparency aspect, the use of geo-ICT and the presence of the intermediaries. The given characteristics as well as the availability access and contact persons with the Municipality of Enschede had made this case was chosen for this research. More comprehensive description about the case study in the next chapter also addresses research question 8.

5. CHARACTERISTICS OF GEO ICT-ENABLED INTERMEDIARIES IN ENSCHEDE'S CASE

This chapter is devoted to present the results of investigation on the case study: one of the transparency initiatives in Municipality of Enschede. The transparency initiative itself is part of the citizens reporting system on public space issues. The investigation aims to find changes due to the transparency initiative and contribution of the geo ICT-enabled intermediaries towards the changes. The changes meant here are related to the extent the goals related transparency achieved as well as any other effect of information disclosure. The changes sought are used for further analysis to find the worth of the characteristics in transparency initiative. By seeking the changes related transparency, this chapter addresses research question 9 which seeks which changes relate to transparency when the geo ICT-enabled intermediaries are involved.

The sections in this chapter show the points obtained after applying methods as explained in chapter 4. The arrangement of the sections corresponds with the framework developed in section 4.2 where a set of headings assigned to give an order explanation. It starts with description of the transparency initiative and the surrounding system in section 5.1. It is followed by presenting the goals related transparency and criteria to evaluate the contribution of intermediaries in section 5.2. Characteristics of geo ICT-enabled intermediaries are summarized in section 5.3. Then section 5.4 shows the extent of the intermediaries' contribution. Section 5.5, 5.6 and 5.7 reveal changes due to transparency but from unexpected direction. Finally section 5.7 concludes this chapter and explains research question addressed and how it is dealt with further.

5.1. Transparency initiatives in citizens reporting system on public space issues of Municipality of Enschede

Enschede with 158,048 citizens (CBS, 2012) in an area of 142.75 km² is a city with historical textile industries in the past. Now it is featured as a city with a major knowledge-based industry with the presence of University of Twente and Saxion Hogeschool (Enschede.nl). In managing the city, Municipality of Enschede as well as all municipalities in the Netherlands offers various services in the fields such as Physical planning, public housing, transport, environment, social services, education, culture, and welfare (Figee, Eigeman, & Hilterman, 2008).

To manage public space, besides maintaining public goods such as city roads and paths, greenery, street and traffic lights, sewer and forth, the municipality's staff said that it engages its citizens to help the city in improving the neighbourhood. One of the engagement forms is by enabling them to report any problem they find in the public area to the Municipality. The problems can be potholes in the street, broken public lights, broken public play set, litters on the street, bad roads, weed and so forth. The problems reported then will be resolved by the municipality.

According to the staff, the municipality of Enschede has a centralized system to manage the citizens reporting system namely Melddesk. The system that has already been employed for about 10 years allows citizens to report either through phone call in line 14053, sending a letter to municipality, or filling in a web form on municipality's official website. The reports are received by authorized employees in the contact centre who process all the coming reports in a central database. The staff stated that the report is admissible if meets the requirement for further treatment. It is determined by the complaint handler. If it

is admissible, from this central data base, the reports then forwarded to the certain department that in charge of the problems. That department will decide what proper action to be taken towards the report. Some reports can be very urgent that immediate action should be taken. For examples there is a hole in the street that may cause accident. While other should wait one to five days, weeks or be put in a regular schedule, depend on the problems.

The municipality have conducted this reporting system in a transparent manner. From examination to the municipal website, it can be seen that the information about the system, the procedures and requirements, and the quality standard of the services is available for public (see figure 5.1). In the website also stated that the system can also notify the handling of the problems actively to the reporters if they want to actively involve.



Figure 5.1 Information about citizens reporting system in the Muncipality of Enschede's official website (in Dutch)

This system has an additional means that enables reporting and complaining any problem right away on the spot. It is a reporting method using a smartphone application namely *verbeterdebuurt*. Besides using smartphone app, *verbeterdebuurt* can also be used through internet website. It was first introduced to be used in Enschede city on December 9, 2010. This means posts all the problems reported in map visualization either in the website or in the app's interface. All actions taken by the municipality to fix the problems are also displayed in the map. Report from citizens is symbolized in the map as a red pinpoint in the location reported. It will be replaced by a green flag if the problem has resolved. However, the map of complaints as well as any publicity of this platform does not appear in the municipality official website.

Nevertheless, this means is considered more transparent than the other means inside the reporting system (phone call, fill in web from, and writing letter). It because the app enables not only the reporters to view the problems reported and the responds from municipality, but also others who access the map (see figure 5.2). The citizens are able to contribute their vote to the same problem that has been reported by other.

As an extra tool, *verbeterdebuurt* is developed and managed by third parties (its developer/operator). *Verbeterdebuurt* in this case is considered as an intermediary that mediates the relation between citizens and municipality. It connects citizens' voice to the government as well as informs citizens about government's action. It is recognized by both the municipality's staffs and the app developer that through such a contract, *verbeterdebuurt* system is integrated to the melddesk system. This integration implies that all report made by citizens in the area of Enschede city go to both *verbeterdebuurt* database and melddesk database. It also allows the municipality to signal the *verbeterdebuurt* operator to replace red pinpoint with the green flag after the municipality has resolved problems. Nevertheless, the app developer emphasized that even without a contract between *verbeterdebuurt* and municipality reports from citizens will still be displayed in the map as well as be sent to the official e-mail of the municipality. However, notification that the problems have been resolved cannot be displayed without the system integration between municipality and *verbeterdebuurt*.

Besides delivering a report, *verbeterdeburt* also has the option for citizens to contribute with an idea. For example, when they notice that a traffic light is needed in a crossroads. In this case, they can use the *verbeterdeburt* on their smartphone to take picture and locate the location of the idea. The idea is sent to the municipality. The researcher had tried to contribute an idea of locating traffic light using this app. Indeed that idea appeared in the map, but researcher did not notice there was response from the municipality. This is because based on the mechanism of the reporting system, the idea can be responded if it gets at least ten votes (similar to the "likes" on Facebook) from other citizens.

It was emphasized by the municipality's staffs that within the reporting system of the Municipality of Enschede's, all the reports coming from *verbeterdebuurt* are treated similarly with other reports which coming from other means. Those are all managed in the central database. The responds from the municipality is also the same based on standardized procedure and urgency levels of problems reported. There is no priority of certain means over the other. The municipality's staffs also admitted that their response is not really pushed by the information disclosure. This does not mean that the municipality does not work to repairs problem reported through the *verbeterdebuurt*. But the trigger is not because many eyes look at it, but more due to procedure and regulation which obliges municipality to act. For example, if problems such as car accident caused by unsafe or broken road in an area where municipality's staff also admitted that they do not want to be assessed badly in managing public space. Thus, the municipality works hard to comply with their standard and procedure.



Figure 5.2 Map of problems reported and responds from municipality in the Verbeterdebuurt interface. The left side is display in the smartphone app and the right is display in the website.

From the documents obtained from the municipality and information from the interview with the staff, it is known that the average report received by municipality through melddesk is about 22,000 reports/complaints per year. Out of 22,000, in 2011, the reports coming from *verbeterdebuurt* are about 1,000 reports (4.5%), from internet form are about 3,000 (13.6%) and the rest (81.9%) are from phone calls.

Besides *verbeterdebuurt*, there is a smartphone app namely *buitenbeter* which can also be used by citizens in Enschede city to make reports of problems they find in the public area. It also uses map display in its interface. Unlike *verbeterdebuurt*, *buitenbeter* has no connection with melddesk in Enschede. The municipality staff admitted that the reason why the municipality does not integrate the *buitenbeter* is mainly because it is a commercial system and offer much higher fee for contract than the *verbeterdebuurt*'s offer. Another reason is it does not have option for citizens to deliver ideas. Nevertheless, *buitenbeter* is still an intermediary that mediates the citizens-municipality relation, but with different condition from *verbeterdebuurt*. From the *buitenbeter* website and researcher's experiment to make the report, even without connection any report made by citizen will still be forwarded by *buitenbeter* to municipal's official e-mail. The municipality's staff also admitted this and said that the municipality of Enschede welcome and consider the reports coming from *buitenbeter*. However, the staff said that they need extra works to handle that kind of reports since the reports do not directly go to melddesk database.

In term of transparency, if *buitenbeter* has connection to municipality, it is transparent but only to users/reporters. It notifies only the users about government action towards the report while other citizens cannot see report made by other. However, since in this case there is no connection with the municipality, it can only tell reporters that their report has been sent to municipality.

As I stated in chapter 3 that it is difficult to distinguish which characteristics belong to the intermediaries and which belong to the transparency case/initiative due to the unclear boundaries between those two. As suggested by chapter 3, characteristics like the roles of the transparency, parties involved, funding and partnership, and incentive scheme offered are grouped into characteristics of the case not the

intermediaries. However, I noticed in this case that characteristics such as the credibility of the information, incentives scheme and funding and partnership are more attached to the intermediaries, not the case. So, I put it in the section 5.3 instead of putting it in section 5.1.

5.2. Goals of the transparency initiatives and the evaluation criteria

The transparency initiative in the case of citizens reporting system is making available for public the information about the present of the system, procedures, the problems reported and notification whether the municipality responds the problem. This involves means such as webpage, phone call, e-mail and *verbeterdebuurt* system. Here, *buitenbeter* also involves but with different way since it has no connection with municipality (see section 5.1). This research only focuses to the transparency initiative which involves *verbeterdebuurt* and *buitenbeter* as geo ICT-enabled intermediaries.

From the web content analysis and the interviews, this research derived some goals related to the citizens reporting system. The ultimate goal of the system is to make environment clean and safe. Actually, there are many factors such as the way municipality fixes the problems reported, compliance of regular maintenances of public goods, support from citizens, financials and resources as well as transparency initiative which contribute to create clean and safe environment. However, since this research seeks the relation between transparency and goals achievement, those other determining factors besides transparency will not be included further.

To achieve the ultimate goal, some intermediate goals related transparency are set as followings; 1) increasing effectiveness and efficiency of the municipality in dealing with public space issues; 2) involving citizens in public space issues.

Thus, the present of the geo ICT-enabled intermediaries as a part of transparency initiative should contribute to increase effectiveness and efficiency of municipality to address public space problems and to involve citizens. The contributions eventually should contribute to create clean and safe environment in Enschede city (see figure 5.3).

It is difficult to measure directly the contribution towards the goals achievement because the present of *verbeterdebuurt* and *buitenbeter* is not the only determining factor. Thus, one of ways to know the type and the extent of the contribution is by questioning the authorized municipality's staffs concerning how the apps help the municipality in the reporting system. The questions are around the effects of the apps towards municipality's works in managing public space. Points from the interview are collaborated with points obtained from analysis of web contents. Those points are then classified into effectiveness, efficiency and citizens' participation.

The effectiveness relates to how the transparency aspect, the use of geo ICT and the status of the apps as intermediaries give added value to municipality's performance. The efficiency is about how geo ICT-enabled intermediaries can help municipality enhances the value of time, efforts, and cost in managing public space. For example; the existence of the apps leads to more work can be done with the same amount of money or save more time when addressing the same problems. Citizens' participation refers to number of involvement and the extent of interaction between municipality and citizens due to the apps.



Figure 5.3 Chart of the way of geo CT-enabled intermediaries contribute to the goal achievement

5.3. Characteristics of geo ICT-enabled intermediaries

This section observes closer and describes the geo ICT-enabled intermediaries' characteristics. The description based on identification of points available in the websites, occurred during the interviews and obtained from direct observation. Unlike the section 5.1 which describes the characteristics of transparency initiatives in a flowing story, this section aggregates and arranges the intermediaries in a matrix of characteristics built from lesson learned in chapter 3. It is done because the former is more to describe context which needs chronological description while the later simply highlight the characteristics of intermediaries. However, the characteristics of both the transparency initiative and the intermediaries are examined later to seek the contribution towards changes related transparency.

Below are the characteristics of the intermediaries.

Table 5.1 presents the characteristics of *verbeterdebuurt* derived from web content analysis, interview and direct observation.

No	Type of	Characteristics
	characteristics	
1	The form	It is a mobile application. It is able to be installed in smartphone with
		operating system: android and iOS (iphone).
		It also operates as internet platform in website: <u>www.verbeterdebuurt.nl</u>
2	How it is traced so	It is published and promoted in mediums as followings:
	anyone knows and	- Website
	uses it	- Application Markets For Android, Iphone
		- Website of Municipalities that employ the app

Table 5.1 Characteristics of verbeterdebuurt

		- Newspapers
		- Social media (twitter, Facebook and blog)
		- Provide news feed for media
3	Tools and method	Tools:
	used	Smartphone with operating system android and iOS, equipped with camera
		and has internet connection. It can also be used through computer with
		internet connection.
		The reports and the handling problems are displayed in the map available
		either on the website or in the mobile app. The location of problem is
		symbolized as red pinpoint while the resolution is symbolized as green flag
		Meanwhile the idea from citizens is symbolized as lamp. Inside the symbol
		there are some data about the problem: picture, category, brief description
		submission data and response from the municipality.
		Methods:
		If someone finds a problem in public space, he/she can make a report
		directly on the spot by using smartphone. The report can also be made
		through computer. It is started by opening the app and pinpoints the location
		in the map (automatically by the app). Then he/she determines the category
		of the problem before taking a picture of the problem. After that, types a
		brief description or comment. The app will display the report in the map as
		well as send to the municipality. The same way applied if someone has an
		idea and wants to deliver it to the municipality.
4	Position of the	The platform/app is a third party of which through it the citizens report
	intermediaries	complaints to the municipality. Amid the citizens-municipality relationship
	interineenanes	this platform has an integration of back office with municipality's system
		where database of municipality and the platform are connected and allow all
		coming report immediately come to the municipality database as well as
		conting report initiately conte to the municipality database as well as
		problems resolved.
		The app also expected can link citizens with their neighbour especially in
		issue to take care together their neighbourhood
5	Ways to ensure	Users can never make report if not registered in the app by filling some
5	credibility of	personal information such as name address, telephone number and email
	information	address. This is to avoid irresponsible report and to ansure credibility of
	disclosed	information. Vorification is also done by sonding amail notification to the
	disclosed	reporter In addition, the plotform operator randomly checks the reports to
		find incorrections and conduct some security sets
		Eind inappropriate report and conduct some security acts.
		Furthermore, sometimes more information is needed by municipality that
	x · 1	makes it calls the reporter back to clarify or ask additional information.
6	Incentives scheme	For citizens as the users and information source:
	offered	It provides incentives by lowering the barriers for citizens' participation by
		making the app easy to use. It provides a medium where citizens' voice
		channelled to the right institution to handle the problems reported. It also
		amplifies citizens' voice by letting the public view and vote the report.
		For municipality as the targeted entities:
		All the reports and ideas submitted can be viewed by many eyes including

		media, authorities, politicians and forth. It is expected to give such a pressure	
		to municipality to be more accountable. Furthermore, by showing to the	
		public if the problems solved by municipality, it can enhance citizens' trust to	
		the municipality.	
7	Funding and	Funding:	
	Partnership	It is free of charge for any municipality to connect with the platform, but the	
		municipality should pay if wants to build back office integration. So, this	
		payment has partly funded the operational of the platform. Other sources are	
		from the developers own pocket and from donation.	
		Partnership:	
		In the case of Enschede, verbeterdebuurt developer has worked together with	
		melddesk developer to integrate the back office of reporting system.	
		Verbeterdebuurt also has partnership with some media which receive its news	
		feed regularly. In addition, 70% municipalities in the Netherlands have	
		partnership (connected) with verbeterdeburt platform which allow it learns from	
		the experiences of those municipalities.	

Table 5.2 presents the characteristics of *buitenbeter* derived from web content analysis and from direct observation.

No	Type of	Characteristics
	characteristics	
1	The form	A mobile application. It can be installed in smartphone with operating
		system: android, windows, iOS (iphone), and blackberry.
2	How it is traced so	The information about the app is available in:
	anyone knows and	- website
	uses it	- Application Markets For Android, Iphone, blackberry, windows
		- Website of Municipalities that employ the app
		- Newspapers
		- Social media (twitter, Facebook and youtube)
3	Tools and method	Tools:
	used	Smartphone with operating system android, iOS, windows, and blackberry.
		The phone should be equipped with camera and has internet connection.
		Methods:
		A problem found in public space can be reported directly on the spot by
		opening the app which then leads to several steps in making the report. First,
		taking the picture of the problem, pinpoints the location in the map, then
		determining the category of the problem and giving a brief description or
		comment. The report then will be sent to the municipality as a regular e-mail
		to municipality's official e-mail address. The reporter gets e-mail feedback
		which notifies the reporter that the report was sent to the municipality.
4	Position of the	In general, the platform/app is a third parties used by citizens to report
	intermediaries	complaints to the municipality. However, the municipality of Enschede does
		not have a connection with this platform. Thus, the mediation position is; the
		platform still in the middle where complaints from citizens still possible go to

Table 5.2 Characteristics of buitenbeter

		the app, but the app cannot ensure that the messages are treated by the
		municipality as it treats other reports through the municipality system itself.
5	Ways to ensure	The app requires the users to register before can send the report. The
	credibility of	registration is done by filling some personal information such as name,
	information	address, telephone number and email address.
	disclosed	
6	Incentives scheme	For citizens as the users and information source:
	offered	The incentive here is providing an easy and simple way for ordinary citizens
		to make a report directly on the spot.
		For municipality as the targeted entities:
		The report contains spatial information and picture which is expected can
		ease the municipality to handle.
7	Funding and	Funding:
	Partnership	According to the municipality of Enschede staff, buitenbeter had ever
		proposed a connection with the municipality with certain amount of
		payment. It means this platform get fund from this source. Other sources are
		unknown.
		Partnership: The information is unavailable

The tables above provide some intermediaries' characteristics which together with the transparency characteristics described in section 5.1 are assumed to have influences to the changes related to transparency.

5.4. The contribution of the geo ICT-enabled intermediaries

As a part of the initiative to create clean and safe environment, it is implied from the interview with the municipality's staffs and web content analysis that the involvement of geo ICT-enabled intermediaries in citizens reporting system should contribute to the three intermediate goals as described in figure 5.3; effectiveness, efficiency and citizens' participation.

The effects of *verbeterdebuurt* on the intermediate goals are summarized in table 5.3 below: The contents of this table are mainly derived from syntheses of responses during interview with municipality's staffs.

Effectiveness	- The app makes the municipality employees know exactly where the location of the problem reported. It eases the way to handle the problem.
	- Information that made available for public can avoid duplication. The duplication can cause troublesome to whom that handle the reports. Duplications that possibly happen are several phone calls, multiple e-mails/reports from different people for the same problem. Using the app can avoid this because users can see whether the report has been made by other just by opening the app's interface. Instead of duplication, it allows giving vote for those who still want to contribute. Thus, this can help the work in handling the coming report.
	- It is a real time system which can upload report to be viewed directly as well as if municipality has solved problem, it can directly inform citizens

Table 5.3 Effects of verbeterdebuurt on the intermediate goals

Efficiency	-	Information from the app can save time in finding the location. For example the report about one hole in the long road can be found quickly due to the point in the map
	-	By knowing the location of some problems, the municipality can arrange a plan to manage the problems in an efficient way. For example arrange a route of city car that can cover the whole problems in the shortest distance. This reduces the fuel and saves time.
	-	Avoiding duplication can reduce cost in managing report. It is because every complaint that comes need to be responded, put into the system, examined by employees which those all absorb resource and money.
Citizens' participation	-	Disclosing the information when municipality fix the problem can take the citizens closer to what government has done.
	-	Enabling interaction, not only complaints but also idea.
	-	By displaying green flag when municipality has fixed the problem, citizens can control whether problem fixed properly.
	-	Reports coming from this platform are about 1,000 reports (4.5%) out of 22,000 average reports per year.

Meanwhile, the effects of *buitenbeter* on the intermediate goals are little known especially because it has no connection with municipality. So, not much information obtained from interviews with municipality's staffs about the performance of the app. However, from that little information combined with direct observation by the researcher, there are some points that can be considered as effects on the intermediate goals. Those are summarized in table below.

Table 5.4 Effects of buitenbeter on the intermediate goals

Effectiveness	- Even though without connection, <i>buitenbeter</i> still sent reports from citizens to municipality through regular e-mail. The e-mail report contains information of problem, picture and location on the map. If the reports come from this platform are accepted as any other report from other source, this kind of report should help municipality to handle the problem. Likewise, <i>verbeterdebuurt</i> the reports from buitenbeter equipped with picture and information location
Efficiency	- Although municipality of Enschede still receives and considers any report comes from it, the municipality's staff admitted that the employees need extra work to handle the report. No connection makes the report from <i>buitenbeter</i> which comes to municipality's e-mail need to be put into the database system manually. Thus, the involvement of the <i>buitenbeter</i> in this case is less efficient
Citizens' participation	- In this case, <i>buitenbeter</i> can only deliver complaints from citizens and cannot inform citizens whether the municipality handle the complaints. This is one direction interaction. Also there is no possibility to send idea. Meanwhile, data about number of citizens that use this platform in Enschede is not available which make difficult to assess the degree citizens participate through this platform compare to other means.

5.5. Future involvement of the intermediaries in the Municipality of Enshcede transparency initiative

The fact that the map of *verbeterdebuurt* or link to the map does not appear to the municipality' official website may influence the degree of transparency. Both of the municipality' staffs who were interviewed admitted that the *verbeterdebuurt* bring some advantages for municipality as described above. Thus, one of the staffs implied that the app will be used extensively in the future and the map or link will also be displayed in municipal website. He said that the current condition where it does not appear is more due to technical reasons. On the other hand, another staff said that there is a possibility that the platform will be replaced by municipality's owned platform. The reasons are to reduce dependency on the third parties and to minimize cost. The desire for replacement implies that the third parties platforms are not promoted in the municipality's website since it will cause confusion for citizens if the replacement happens latter.

5.6. The presence of unexpected effects of the involvement of the geo ICT-enabled intermediary

The municipality staff said that the municipality expects that citizens are encouraged to actively keep their environment clean and safe if citizens can see what are happening surround them. The *verbeterdebuurt* also stated that it is also aimed by the *verbeterdebuurt*. For example, if many garbage piled out of the bin in one neighbourhood reported, people surround who see the problem in the map can take action by throwing the garbage to the disposal bin. However, it seems not happened. The municipality's staff recognized that even people complain for things that actually they can do themselves.

Another effect found by the municipality's staff is that indeed the map displaying all report to the public leads to duplication reduced. However, it is suspected that the increase number of reports received by municipality is because it is easier in making the report. Before, report is rarely made on the spot. People should go home, make a phone call or turn on the computer to get into the municipal website. Now with the massive use of mobile phone, the report also increased. It includes the report comes from phone call.

5.7. The presence of unexpected parties that take opportunities from information disclosure

The municipality staff members recognized the possibility that other parties can occur and take opportunities from the information disclosed. In fact, there are companies come to the municipality and offer services or want to get contract related to the public goods maintenance such as public lights. However, the staffs have no idea even doubt that those companies come due to the disclosed information. Furthermore, the municipality has contracts (mostly 2 to 5 years) with third parties which dealing with public space maintenance. Even though there are parties that want to take opportunities from the disclosed information, the existed contracts deter those parties to get the contract.

The *verbeterdebuurt* developer also recognized that information disclosed from the app can be used as an opportunity by certain parties. There was one person expressed his idea to get information about potholes in the roads so he can fix it for his business. At least he can make estimation and send it to the government. However, the developer does not notice whether the person implemented the idea. The app developer actually does not mind with this parties' emergence as long as those parties do not cheat, break the rules and the municipality happy with that.

Besides, the developer also knows there is possibility that insurance companies may use information from *verbeterdebuurt*. Recently, there was an accident that cause a woman died. From the accident report, the insurance company suspected that the municipality responsible since it knows that the road is bad but did not act upon it. So, what the insurance company could do is to see the *verbeterdebuurt* to find any report along the road where the accident happened. If the report of bad road is there and no response from the municipality to fix problem reported, the insurance company can make the municipality bear the cost.

5.8. Conclusion

This chapter presents some results from web content analysis, interviews and direct observation. The responses indicate that there are changes related to transparency in term of effectiveness, efficiency and citizens' participation because the data (complaints and resolutions) are displayed publicly in internet based map. The app is actually a way to outsource the monitoring of defects or problems; municipality does not need to do it themselves, it can avoid duplication, it saves time in finding the location and can take the citizens closer to what government has done. So it helps operational processes on the one hand.

On the other hand there are also unexpected changes or effects which include; the citizens' participation increased in term of number of reports, but citizens prefer to report than to act toward problems that they can handle themselves. There is also the possibility of the emergence of the third parties that take opportunities from the disclosed information. Besides, there are contested views that can change the transparency which are about whether the third parties will still be involved in the future.

The changes identified in this chapter addresses research question 9 which seeks changes related transparency are possible when the geo ICT-enabled intermediaries involved.

6. EVALUATING THE CHARACTERISTICS OF GEO ICT-ENABLED INTERMEDIARIES

After identifying the changes related transparency and the contribution of the geo ICT-enabled intermediaries, this chapter addresses research question 10 which discusses the worth of characteristics attached to the intermediaries in term of theoretical building on transparency and technological intermediation. To deal with that, the characteristics found in chapter 5 are arranged as sections in which each heading covers certain characteristics and links the characteristics to the theories and the concept from chapter 2 and chapter 3. In each section, the extent of contribution of the characteristics as well as the limitations is also discussed.

6.1. Information disclosure and the crowd as the source

As described in section 5.1, the information disclosed in the transparency initiative is about the problems and defectives in public space that citizens found as well as idea from citizens of how to manage public space. The information disclosed through the *verbeterdebuurt* platform (figure 5.2) is actually not available before the platform was employed. Indeed, through existing system meldesk (figure 5.1) citizens can report problems and defectives in public space, but the handling of the reports is only available for the reporters if they want to be actively notified. The notification itself is in form e-mail or phone call. By employing the intermediary platform, citizens can make reports through the platform and also both the reports and the resolutions are available for public. So, there is an increase in transparency whereby there is a provision of data opened for public which before was unavailable.

The choice to publishing certain information is not simply putting the data on the website, there must be certain frame and motive attached to the information disclosure (Meijer, 2007; Ossebaard, Gemert-Pijnen, & Seydel, 2012). As suggested in section 3.2.2 that knowing parties involved within transparency initiatives (disclosers, targeted entities, and intermediaries) may reveal backgrounds and motives behinds. In this case, the frame follows the purpose of the platform development as well as the municipality of Enschede's policy. By making information can be seen by many eyes, the verbeterdebuurt developer expected that the citizens' report get more attention either from the municipality or the surrounding citizens close to the problems reported. The municipality is expected to resolve the problems while the citizens are expected to be aware and if possible help to resolve the problems. This aim resonates with the municipality's policy which intended the citizens to be closer to what the municipality doing in managing public space. The municipality also wanted to show when they have resolved the problems. The frame that transparency can bring citizens closer actually based on assumption that when citizens know what is happening inside the government, they will be encouraged to involve within the process at least by voicing their aspiration (Birkinshaw, 2006; Fenster, 2006). In the case of Enschede, the frame of the municipality matched with the capabilities of verbeterdebuurt which then explains the choosing of verbeterdebuurt rather than buitenbeter to be connected with municipality's system. The verbeterdebuurt itself has two abilities the buitenbeter does not have which related to the degree of transparency and citizens' participation (see table 5.1 and 5.2). Those are enabling public to view the reports and the resolution on the internet based map and enabling people to contribute an idea. These are considered by the municipality can bring citizens closer to the municipality as the citizens can see what municipality has done and they can aspire their idea to the municipality.

Either the *verbeterdebuurt* or *buitenbeter* are crowd source platforms since those two rely on citizens participation (Boulos et al., 2011) who sensing their surrounding (Goldman et al., 2009). The crowd as the source has added value for its local knowledge (Georgiadou et al., 2011) which sometimes can provide information that hardly provided by official source (Goodchild, 2007). This added value was recognized by the municipality's staff that the information from citizens has helped the municipality in monitoring public space.

However, information from crowd source raise issue of credibility (Georgiadou et al., 2011). As mentioned in section 3.1 that transparency initiatives may face challenges regarding information credibility (Fung et al., 2007). Credibility of information may increase the likelihood the information embedded in decision making, in this case especially for municipality. It will be wasteful if municipality respond fake report from anonymous person. As suggested in subsection 3.2.5 that normally registration of reporter is required to discourage people to deceive. In this case, *verbeterdebuurt* also requires reporter to register and randomly conducts checking the reports (see table 5.1 column 5).

6.2. Internet platform as well as mobile application as the technological intermediaries

There are two intermediaries in the case studied which those two have different degree of influence because of their connection status with the municipality. The *verbeterdebuurt* has contract with municipality while *buitenbeter* does not have it. This connection –beside the abilities of the platforms- determines the degree of contribution of these intermediaries to the Enschede's public space management (see section 5.4).

The technological intermediaries connect ordinary citizens with municipality of Enschede (see table 5.1 and 5.2 column 4). The intermediation bridges two things; problems/complaints reported by citizens in public space and aspirations to manage public space. The *verbeterdeburt* is the only channel if citizens want to see their report and the handling of reports available in internet. However, the *verbeterdebuart* is not the only channel to make report since the existing system (meldesk) provides other channels for reporting such as phone call and web form (see section 5.1). The presence of intermediary has given an alternative means for citizens. Since first introduced, *verbeterdebuart* had been used to send 1000 reports in 2011 out of 22,000 average reports per year. It is predicted will increase if more publicity available in Enschede website such as by putting the map or links of the platform. Besides, the intermediary also mediates the access of information has increased citizens' capability to monitor government performance (Fenster, 2006) in handling public space.

Besides the mediation above, other mediation is connecting the citizens with their neighbours that is also aimed by the *verbeterdebuurt* (see table 5.1 column 4). The visibility of problems in the map is expected to encourage people surrounding the problems aware with problems in their environment and if possible take action together. However, no evidence until now that the citizens take collective action towards certain issue rose in the map of *verbeterdebuurt*.

The technological intermediation also has a possibility to create links with other parties which before unexpected to emerge (see section 5.7). Although the platform developer does not think it would not be misused and the municipality also has certain procedure to tackle the potential bad effects, the emergence of third parties must still be aware of. In the case of land information disclosure in India exemplified by Raman (2012), the third parties emerged brought bad impact by taking financial advantages from poor community. The unexpected effect shows that technology not only can be shaped by social circumstance but technology also has a social impact (Akingbade et al., 2009) that can go to either positive or negative.

As suggested in section 3.3, the form of the intermediaries may show the realm of their activity and who is the potential user. Being internet platform which operates in virtual realm may raise digital divide issue where only certain segment of society that able to use the platform. It frequently happens in area that has poor internet access. Thus, the use of appropriate tools and methods (sub section 3.3.2) can show technological design to address some limitations related to technology (Fung et al., 2010). I found that both the *verbeterdebuurt* and municipality of Enschede realized the technological issue when deploying this app amid the citizens. The deployment has realized the fact that the Netherlands is a country which has great internet network. About 94% in 2011 and 2012 of Dutch household have internet access, which out of it about 46% in 2011 and 55% in 2012 use internet through mobile phone (CBS, 2013). Besides, the form as mobile app can address mobility issues where it allows making report on the spot, avoiding citizens from forgetting the problems.

Digital divide may also relate to users' age. For example, the *verbeterdebuurt* developer suspected that the most users of the platform are youths as they likely to know and familiar with smartphone technology rather than people with older age. In fact, the developer said that they surprised that the age of average users is 45 years old. Explanation for this comes from the *verbeterdebburt* developer who recognized that in the Netherlands people with that age are more active involve in local politics. So, it is plausible if people with that age that use the platform more frequent.

The fact that 1000 citizens used this app though without massive publicity in municipal website shows citizens' enthusiasm of the new platform. Trend of massive use of mobile device by people as human sensor (Goldman et al., 2009) is predicted as the trigger that this app will be used more extensive in the future. Technological design may also influence the likelihood people to use the platform in transparency initiatives (Avila et al., 2010). It was recognized by the platform developer that it was designed by getting input and ideas from the citizens in order to fit with citizens' feels. However the ease also has side effect. As mentioned in section 5.6, the municipality's staff suspected that the ease to making the report has caused the increase report coming to the municipality's system, include reports that contain trivial things that citizens can handle themselves.

The use of geo ICT in the platform (see table 5.1 column 3) contributed to the effectiveness and efficiency as described in table 5.3. Spatial information eases to find location of the problem as well as helps to arrange strategy to overcome the problems. This resonates with what suggested in section 2.5 that geo ICT can support to handle problems which has spatial components.

In term of transparency, geo ICT is useful to customize data. Customization data to ease the comprehensible of information is important element that determine whether the information embedded in user's decision making process (Fung et al., 2007). The map visualization to disclose information about problems and resolution is capable to aggregate abundant data and make citizens easy to know who have made report surrounding them. This was recognized by the municipality's staffs that the duplication has decreased. Besides, geo ICT as a part of the tools and methods used in transparency helps to represent reality. Transparency actually tries to represent the concerned reality, where the means to represent should be able to present information close to the reality represented to reduce uncertainty (Meijer, 2009). The use of geo ICT and added with camera function give more dimensional aspects; spatial and picture of information disclosed. The map and picture attached to the submitted report make the municipality employees can see the degree of problem reported. It helps in deciding what proper action to be taken.

Besides tools mentioned above, methods offered by the technological intermediary (table 5.1 column 3) which allow vote and contribution of idea may contribute in term of increasing the degree of citizens' participation. The method can indirectly assert demand to influence of how the policy made. This is the

concept of openness which Meijer et al (2012) define as transparency plus participation. Openness implies not only information disclosed but also there should be a chance for citizens to influence government decision making. In this case, the way to influence is more subtle; by voting and submitting idea through the platform. Besides, the method which giving signal if municipality has resolved problems actually allow citizens to control what municipality doing. If the map indicates that the municipality has repaired the problems but the result is not satisfied, the citizens may know and can make another report or assess that the municipality's work is not good.

6.3. Incentives of the transparency initiatives

One of challenges stems from the nature of third generation of transparency mentioned in section 3.1 is transparency initiative has no mandate which oblige the targeted entities to comply any effort that wants to influence their behaviour (Fung et al., 2007). Thus, as suggested in sub section 3.2.4 that incentives offered by the transparency initiative may determine whether the targeted entities move to the direction of the initiatives aimed. Besides, the incentives should also be able to move potential users or disclosers to contribute to the initiatives.

Incentive scheme in the case studied is a type of social accountability (see table 5.1 column 6) where the government is expected to be more accountable if citizens view and participate in the government's work. Social accountability relies on civic engagement (Bovens, 2007) and is the expected effect of transparency (Fox, 2007; McGee & Gaventa, 2010). However, this incentive seems not really efficacious in this case since as admitted by the municipality's staffs in section 5.1 that the regulation and internal procedure are more the driven factors of their response to the problems. The explanation of this refers to what Fox (2007) has stated that transparency does not automatically lead to accountability especially if the initiatives lack of power to impose answerability or sanction. However, theoretically by disclosing information for public, citizens can view and judge the reputation of the municipality. Even though municipality's staffs admitted that they are not pushed by citizens pressure, but since in this information age reputation of an government organization is very important (Meijer, 2007), the incentives of reputation will be damaged in front of their people in managing the public space. Furthermore, the strategy to publish information through many means such as media by sending news feed (table 5.1 column 2) may enhance the degree of influence since media has power to drive public opinion.

Incentives for citizens as the users and disclosers are the ease to use the app and the ability to connect problems and idea to the right institution (table 5.1 column 6). The 1000 number of reports in the first year deployment and the increase used predicted if more publicity available may indicate that the incentives are managed to attract citizens. Sub section 3.2.4 mentioned several motivations that encourage citizens to actively contribute in the transparency initiatives, while in this case no data from citizens that reveals their motivation. However, since the transparency initiative is about managing public space, the motivation of contributions can be (adapted from motivations to contribute geographical information (Coleman, Georgiadou, & Labonte, 2009)); to benefit other which live in that environment although no gain for the reporters, as part of professional work (municipality's staff also contribute), or to find solution for reporter's own problem.

Besides, information disclosure actually may invite citizens to politically active on certain issues (Meijer, 2005), for example if municipality fail to fix problems or do not respond the idea that has more than ten votes. As citizens may know the failure or ignorance from the disclosed information on internet, citizens may write to the media, organize public movement to pressure municipality or lobby the city council. In

fact, -in line with what Meijer (2005) found- as far as this the municipality's staff said that movements due to information disclosure have never happened.

As suggested by subsection 3.3.4, the degree of citizens' participation through the platform is also determined by how the platform can be discovered by citizens. Thus, diverse ways to promote the platform (table 5.1 and table 5.2 column 2) can attract more users. It is also recognized by the municipality's staffs that if the platform publicity available in website of municipality it would have been used by more citizens.

6.4. Sustainability

Sub section 3.2.3 suggested that the source of funding may connect to the issue in/dependency and sustainability of the initiatives (Avila et al., 2010). In the table 5.1 and 5.2 column 7, one of the funding source is from municipality's payment for back office integration. This payment (described in section 5.1) is one of driven factors that make the municipality choose one platform over the other since one is less commercial, which then determined the operationalization of the platform in the city. Even, an idea has come up from the municipality's staff if the municipality can develop their own app with cheaper cost rather than connect with intermediary. It is a tricky part since the platform also need fund to operationalization. Thus, it shows that transparency has cost and the likelihood of government to conduct transparency may depend on cost. In this case the municipality which bear the cost. If the cost cannot balance the benefit that municipality potentially can get, the municipality may suspend the initiative or find other means or ways that offer lower cost. Option of free of charge may be interesting, but no connection can decrease transparency. It is a trade-off.

Sub section 3.2.3 also suggested that partnership may determine support from other sources that can be obtained. In this case, the partnership of *verbeterdebuurt* has helped to address interoperability issues when the platform was connected to the existing system of municipality. Furthermore, partnership with many municipalities in the Netherlands can benefit the platform development by learning from experience of other cities.

The transparency initiative is possibly influenced by the decision on future involvement of the intermediaries. As stated in the section 5.5 that there are two different views on the future involvement issues. There is nothing wrong with this seems conflicting issue, but it can be explained based on framing theory. This difference reflects the framing where each of them impose their own structure on certain situation (Hoppe, 2010). One said that the municipality will maintain the connection with the intermediaries in municipal reporting system. Outsource is a good way to disclose information on defective problems. This means that the intermediary platform will be used extensively in the future. This view also frames this as technical issue for the current unavailability of publicity of the intermediate platform. As the consequence, there should be more publicity for the platform. The other view implied that the third party platform is useful but the municipality wants to bring the technological app in house (owned by the municipality). The dependency reason stated may reveal the view that wants more control over the platform, something that could not happen if the platform is in form third parties. This condition possibly will have impact on transparency like how the information disclosure should be displayed and what sort of data is accessible. For this view, the dependency is the central issues. If this framing comes out as "the winner", the impact on transparency is there will be alternative of information sources of defective problems; from official source and from third parties sources.

6.5. Conclusion

This chapter addresses research question 10 which evaluates the worth of contribution of the geo ICTenabled intermediary' characteristics in term of theoretical building. I conclude that transparency with the involvement of intermediaries and the use of geo ICT can improve public space management in municipality of Enschede but with some notes as followings:

- The involvement of *verbeterdebuurt* has increased transparency since it can make available information that was unavailable before. The municipality also considered that the platform is able to bring citizens closer to the municipality since it can present the performance of municipality in handling public space as well as can be a channel for citizens to aspire their idea to the municipality.
- The value of crowd source has been recognized in helping municipality in monitoring public space. The credibility issue is handled by requiring reporter to register and also the platform operator has randomly checked the submitted reports.
- The *verbeterdeburt* connect citizens and municipality where it is the only channel to make reports available in internet. However, other channels are still available (phone call, web form, e-mail) to make report although the reports through these means are not available online. The technological intermediary is an alternative means for citizens and can enhance citizens' capability to monitor government in handling public space. In the meantime, the intermediation aimed to connect people surrounding the problems reported has no evidence whether it is achieved. Instead, it potentially creates links with other parties which take opportunities from information disclosure.
- As an internet platform, the technological intermediary does not face significant obstacles related to digital divide issue since in the Netherlands internet access is everywhere. The massive use mobile phone is an opportunity to increase citizens' capability to monitor public space by providing mobile app. The average users of this platform are people with age who usually more active engage in local politics.
- The significant number of citizens who use the platform is estimated caused by the trend of massive use of mobile device by human sensor and the technological design which eases the users. However, these factors also may contribute to the increase number of overall reports coming to the municipality's system which include trivial things that citizens can manage themselves.
- The use of geo ICT has supported the municipality to handle problems which has spatial components. The geo ICT is also powerful to customize data which eases the users to comprehend the information disclosed. This comprehensible determine whether the information embedded in user's decision making process.
- Allow vote and contribution of idea as the methods may increase participation and may indirectly influence the municipality's policy. Also the information provided when the municipality has resolved problems allows citizens to control municipality's performance.
- The incentives of reputation works towards the municipality of Enschede. Incentives provided for citizens are the ease of using the intermediary platform as well as the channels to links problems and idea to the right institution. Information disclosure did not trigger citizens to write to the media, organize public movement to pressure municipality or lobby the city council.
- The diverse ways to promote the platform is needed to attract more users.

- The cost to conduct transparency should be balanced with the benefit that municipality potentially can get.
- The partnership has helped to connect the technological platform with other existing system within the municipality's system. The partnership also contributes in the platform development.
- The future involvement of the intermediaries brings two views which each of the views has its own consequence on transparency. One view that maintains the involvement of the third party leads to extensive use of outsourcing the monitoring public space task. The other view which wants to creating municipality's own platform may lead to the more power municipality will have to control how the information disclosed and what sort of data is accessible.

7. CONCLUSION AND RECOMENDATION

This chapter presents main conclusions and recommendations of this research where the conclusion is drawn from revisiting research objective and research questions.

7.1. Conclusion

The main objective of this research was to identify and to evaluate the characteristics of geo ICT-enabled intermediaries' in transparency initiatives. This objective referred to the emergence of various types of geo ICT-enabled intermediaries which seems promising to bring greater transparency, while still little research evaluate the worth of their contribution on the transparency initiatives.

In order to identify the technological intermediaries, it was needed to look at theoretically the transparency realm as a context where the intermediaries emerge. The transparency realm is particularly characterized by the presence of collaborative production and customization of information where ICT and participatory sensing approach are at the heart. Within that context, the intermediaries overcome problems around transparency.

The need for identification led to examination of 19 selected cases of transparency initiatives where geo ICT used. Based on the examination, classification of characteristics attached to the intermediaries was created. The classification was needed to guide researcher in determining which points to be observed in the evaluation task. The classification specifically addressed research question 1 of the identity of geo ICT-enabled intermediaries in transparency realm. It was found that the intermediaries can be a group of persons or an organization such as group of volunteered citizens, network of organizations, election observer/monitor organizations and NGO/CSO. The intermediaries can also be in virtual form such as online meeting medium, online portal, online database and visualization tool, social network platform and complaint platform.

Research question 2 was about common and specific characteristics of geo ICT-enabled intermediaries. These were shown by the tools and methods used, the position of the intermediaries and how the intermediaries traced. Web form and twitter are common means to collect data as well as Ushahidi and Uchaguzi platform which used to collect spatial data. Other means such as SMS and phone call are used to deal with limitation of internet network. For information disclosure, Ushahidi is the common platform including Google maps and Openstreet maps, while only a few that use map in jpg format. The intermediaries' position generally are between citizens and authorized parties where in a few cases some other parties (media, trained/certified monitors, and researchers) occur and act as mediator the relation between citizens and geo ICT-enabled intermediaries.

Research question 3 looked at the way the geo ICT-enabled intermediaries can be traced generally. Those are sought through organization network as well as internet social network (twitter, Facebook, etc.), advertisement in the newspaper or radio, workshop and press conferences that concern on transparency and accountability issues. Research question 4 was about background of the emergence and the entities behind transparency initiatives where the geo ICT-enabled intermediaries involved. The emergences were mostly encouraged by value of fairness, justice, transparency, and accountability. The transparency initiatives are commonly initiated by ordinary citizens, NGO, journalist, academicians, professional, and activists. There was only one case initiated by a businessman.

Research question 5 was about the choice of research methodology where this research considered that a case study approach is most appropriate, because the unclear of how intermediaries operate within the municipal environment. This complexity relation between the context and the intermediaries is suitable to be addressed by using a case study approach.

Research question 6 sought empirical indicators for the evaluation. The indicators are the extent of contribution of the geo ICT-enabled intermediaries' characteristics towards effectiveness, efficiency and citizens' participation in managing public space management of municipality of Enschede.

Research question 7 which was about the case appropriate to study was addressed by choosing citizens reporting system on public space issues in Municipality of Enschede as the case study. The choice was determined after considering whether features such as the presence of transparency aspect, the use of geo-ICT and the presence of the intermediaries are available. The intermediaries examined are *verbeterdebuurt* and *buitenbeter*. Those are internet platforms/applications in which citizens can make report about problems found in public spaces. In the meantime, description of transparency initiatives in section 4.3 and 5.1 had addressed research question 8 which was about characteristics of the case.

Research question 9 sought changes related transparency when the technological intermediaries involved. The responses and the examination of the case study indicated that there were changes related to transparency as the data (complaints and resolutions) are available for public in internet based map. The data was not available before the *verbeterdebuurt* (technological intermediary) employed. The platform has helped municipality in operational processes by monitoring the defects or problems in public space. Its contribution are; avoiding duplication, saving time in finding the location and taking the citizens closer to what government has done. The changes also occurred in the direction which is unexpected before. Those are the increase of number of reports including trivial reports that citizens can handle themselves and the possibility where third parties emerge to take opportunities from information disclosure. In addition, there is also a potential changed of transparency due to contested view about future involvement of the intermediary.

Research question 10 evaluated the worth of contribution of the geo ICT-enabled intermediary's characteristics and related it to the theoretical building. It was considered that the involvement of the use of geo ICT enabled intermediary within the transparency initiative of citizens reporting system of municipality of Enschede can improve the public space management. The contribution specifically relates to the transparency aspects, value of crowd source, intermediation roles, and the use of geo ICT. The contribution also to the increase number of overall reports includes trivial things, providing extra means for citizens, enhancing citizens' capability to monitor government, and potentially creating links to the other parties which take opportunities from information disclosure.

7.2. Recommendation

- 1. This research has evaluated the contribution of the geo ICT-enabled intermediaries towards the public space management in municipality of Enschede. This research only took a little part of a larger scope which is evaluating whether the contribution can further public aims (social impacts, see figure 5.3) because of time constraint. Thus, it is recommended to do the evaluation of furthering public aims since it may reveal the worth of the geo ICT-enabled intermediaries in a wider context especially on social impact part. The evaluation can use the polis perspective to disentangle the complexity behind the social construction of geo ICT (Georgiadou et al., 2009).
- 2. One of the targeted technological intermediaries is the *buitenbeter* platform. This research got a little information about it because no response for interview request and no connection between

the municipality and the platform. This research concluded that the platform has no significant influence in the public space management of Enschede city. Thus, it is recommended to evaluate that platform in the cities which have connection with the platform using the same method applied in this research. It is worth to compare with this research to know whether different characteristics of platform (*buitenbeter* and *verbeterdebuurt*) but has connection with the city will have the same or different results.

Decision whether to involve technological intermediaries in municipality's system or to create 3. municipality's own platform is a trade-off between cost, dependency and transparency. For practitioners in municipality of Enschede, it is recommended to weight it carefully. The cost is incurred either from the expense of integrating with third parties' system or building municipality's own system. The former option may make the municipality bear higher cost and have less independency. However, citizens may consider it more transparent since the transparency is conducted by neutral (third) parties. Meanwhile, the former may has lower cost and the municipality has more control in transparency (what and how to disclose information). However, the citizens may think that the information disclosure is not neutral since conducted by municipality which is potentially blamed for the content of the information disclosed. Each option has its own cost and consequence. This research has identified characteristics/features of third party platform and assessed its contribution in term of effectiveness, efficiency and citizens' participation in managing public space. If the municipality can develop its own platform which has the same or better features and promising greater contribution with lower cost, it may be better to develop municipality's own platform. However, if the municipality cannot build such a platform, it does not matter to employ the existing third party.

LIST OF REFERENCES

- Akingbade, A., Navarra, D. D., & Georgiadou, Y. (2009). A 10 years review and classification of the geographic information systems impact literature (1998-2008). Nordic Journal of Surveying and Real Estate Research, 4, 84-116.
- Anderson, P., & Anderson, E. (2002). The new e-commerce intermediaries. *MIT Sloan Management Review Summer*, 53-62.
- Avila, R., Feigenblatt, H., Heacock, R., & Heller, N. (2010). Global mapping of technology for transparency and accountability: Transparency and Accountability Initiative.
- Barnes, D., & Hinton, M. (2007). Developing a framework to analyse the roles and relationships of online intermediaries. *International Journal of Information Management*, 27(2), 63-74. doi: 10.1016/j.ijinfomgt.2006.04.003
- Birkinshaw, P. (2006). Transparency as a human right. In C. Hood & D. Heald (Eds.), *Transparency: The key to better governance* (pp. 47-57). Oxford: Oxford University.
- Boulos, M. K., Resch, B., Crowley, D., Breslin, J., Sohn, G., Burtner, R., Pike, W., Jezierski, E., & Chuang, K.-Y. (2011). Crowdsourcing, citizen sensing and sensor web technologies for public and environmental health surveillance and crisis management: trends, OGC standards and application examples. *International Journal of Health Geographics*, 10(1), 67.
- Bovens, M. (2007). Analysing and Assessing Accountability: A Conceptual Framework1. *European Law Journal*, 13(4), 447-468. doi: 10.1111/j.1468-0386.2007.00378.x
- CBS. (2012). Population dynamics; birth, death and migration per region. from Centraal Bureau voor de Statistiek of The Netherlands <u>http://statline.cbs.nl/StatWeb/publication/?DM=SLNL&PA=03759ned&D1=0,3,6,9,12&D2=129-132&D3=60,82,295&D4=(l-1)-l&VW=T</u>
- CBS. (2013). Household with access to internet Retrieved 23 January 2013, from <u>http://statline.cbs.nl/StatWeb/publication/?VW=T&DM=SLNL&PA=71102ned&D1=a&D2=</u> <u>0&D3=%28l-11%29-l&HD=100201-1929</u>
- Coenen, F. H. J. M., & Lulofs, K. R. D. (2011). Policy analysis: The substance, processes and effects of policy.
- Coleman, D. J., Georgiadou, Y., & Labonte, J. (2009). Volunteered Geographic Information: The Nature and Motivation of Produsers. *International Journal of Spatial Data Infrastructures Research (IJSDIR), 4*, 332-358.
- Davies, T. G., & Bawa, Z. A. (2012). The Promises and Perils of Open Government Data (OGD) (Vol. 8).
- de Vries, W. T. (2008). review of the political nature of ICT in G2G integration based on 3 cases from the geoICT domain. In: Proceedings of the 2008 international conference on digital government research, 18-21 May 2008, Montreal, Canada. Digital Government Society of North America, 2008. ISBN:978-1-60558-099-9 (ACM International Conference Proceeding Series; Vol. 289) pp. 124-131.
- Demeyer, T. (2012). Apps For Amsterdam (Vol. 8).
- Edwards, A. (2006). ICT strategies of democratic intermediaries: A view on the political system in the digital age. *Info. Pol.*, *11*(2), 163-176.
- Enschede.nl.). About Enschede Retrieved 30 December 2012, from <u>http://www.enschede.nl/ontwikkeling/English/</u>
- Fenster, M. (2006). The Opacity of Transparency. Iowa Law Review, 91, 885-949.
- Fenster, M. (2012). The Transparency fix: Advocating legal rights and their alternatives in the pursuit of a visible state. Retrieved from <u>http://works.bepress.com/mark_fenster/13/</u>
- Figee, E., Eigeman, J., & Hilterman, F. (2008). *Local Government in The Netherlands*. The Haque: VNG (Association of Netherlands Municipalities).
- Fox, J. A. (2007). The uncertain relationship between transparency and accountability. *Development and Practice*, 17, 663-671. doi: 10.1080/09614520701469955
- Fung, A., Gilman, H. R., & Shkabatur, J. (2010). Impact case studies from middle income and developing countries: Transparency and Accountability Initiative.
- Fung, A., Graham, M., & Weil, D. (2007). Full Disclosure : The Perils and Promise of Transparency Retrieved from <u>http://itc.eblib.com/patron/FullRecord.aspx?p=288626</u>
- Fung, A., Weil, D., Graham, M., & Fagotto, E. (2004). The Political Economy of Transparency: What Makes Disclosure Policies Effective? : Ash Institute for Democratic Governance and Innovation John F. Kennedy School of Government Harvard University.

- Georgiadou, Y., Bana, B., Becht, R., Hoppe, R., Ikingura, J., Kraak, M.-J., Lance, K., Lemmens, R., Lungo, J. H., McCall, M., Miscione, G., & Verplanke, J. (2011). Sensors, empowerment, and accountability: a Digital Earth view from East Africa. *International Journal of Digital Earth*, 4(4), 285-304. doi: 10.1080/17538947.2011.585184
- Georgiadou, Y., & Miscione, G. (2009). Geo ICT in public governance. *JournalGIS development : the global geospatial magazine*(August), 2.
- Georgiadou, Y., Miscione, G., Lance, K., & Vries, W. d. (2009). Framing the use of geo-information in government: a tale of two perspectives. *Earth Science Informatics*, 2(4), 271-282. doi: 10.1007/s12145-009-0036-5
- Goldman, J., Shilton, K., Burke, J., Estrin, D., Hansen, M., Ramanathan, N., Reddy, S., Samanta, V., Srivastava, M., & West, R. (2009). Participatory sensing, a citizen-powered approach to illuminating the patterns that shape our world: Center for Embedded Network Sensing (CENS), UCLA.
- Goodchild, M. F. (2007). Citizens as voluntary sensors: spatial data infrastructure in the world of web 2.0. International journal of Spatial Data Infrastructure Researach (IJSDIR), 2, 24-32.
- Heald, D. (2006). Varieties of transparency. In C. Hood & D. Heald (Eds.), *Transparency: The key to better* governance (pp. 25-43). Oxford: Oxford University.
- Hood, C. (2006). Transparency in Historical Perspective. In C. Hood & D. Heald (Eds.), *Transparency: The key to better governance* (pp. 3-23). Oxford: Oxford University.
- Hoppe, R. (2010). The governance of problems: Puzzling, powering and participation. Bristol, England: The Policy Press.
- McGee, R., & Gaventa, J. (2010). Synthesis report: Review of impact and effectivenss of transparency and accountability initiatives. London: Open Society Foundation.
- Meijer, A. J. (2005). Risk maps on the Internet: Transparency and the management of risks. *Information Polity, 10*(1), 105-113.
- Meijer, A. J. (2007). Publishing public performance results on the Internet: Do stakeholders use the Internet to hold Dutch public service organizations to account? *Government Information Quarterly*, 24(1), 165-185. doi: 10.1016/j.giq.2006.01.014
- Meijer, A. J. (2009). Understanding modern transparency. *International Review of Administrative Sciences*, 75(2), 255-269. doi: 10.1177/0020852309104175
- Meijer, A. J., Curtin, D., & Hillebrandt, M. (2012). Open government: connecting vision and voice. International Review of Administrative Sciences, 78(1), 10-29. doi: 10.1177/0020852311429533
- Oliver, R. W. (2004). What is transparency? New York: Mc-Graw Hill.
- Ossebaard, H. C., Gemert-Pijnen, L. v., & Seydel, E. R. (2012). Technology for transparency: The case of the web-based Dutch national health portal. *Policy & Internet, 4*(2).
- Patton, M. Q. (1988). How to use qualitative methods in evaluation. California: Sage Publications Inc.
- Raman, B. (2012). The Rhetoric of Transparency and its Reality: Transparent Territories, Opaque Power and Empowerment (Vol. 8).
- Rambaldi, G., Chambers, R., Mccall, M., & Fox, J. (2006). Practical ethics for PGIS practitioners, facilitators, technology intermediaries and researchers. Mapping for change: practice, technologies and communication (Vol. 54, pp. 106-113): IIED. Retrieved from <u>http://pubs.iied.org/pdfs/G02155.pdf</u>.
- Roberts, A. (2006). Dashed expectation: Governmental adaptation to transparency rules. In C. Hood & D. Heald (Eds.), *Transparency: The key to better governance* (pp. 107-125). Oxford: Oxford University.
- Sasaki, D., Avila, R., Chak, S., Górnicki, J., Heacock, R., Kaonga, V., Presley, S., Ribeiro, M. M., Singh, N., & Yang, C. (2010). The role of technology and citizen media in promoting transparency, accountability and civic participation: transparency.globalvoicesonline.org.
- Stake, R. E. (1995). The art of case study research. London: Sage Publication Inc.
- Walsham, G. (1995). INTERPRETIVE CASE-STUDIES IN IS RESEARCH NATURE AND
- METHOD. [Article]. European Journal of Information Systems, 4(2), 74-81. doi: 10.1057/ejis.1995.9 Yin, R. K. (2002). Case study research: Design and methods (3rd ed.). London: Sage Publications.

Appendix

Appendix 1: Interviews protocol

A. The interview sessions

1.	Date	: Monday, 3 December 2012
	Place	: Office of Municipality of Enschede
	Duration	: 1 hour and 8 minutes
	Interviewer	: Muhammad Kurniawan
	Interviewee	: Marcel Bouwhuis (Deputy head public spaces, strategic advisor at Municipality of
		Enschede)

2.	Date	: Thursday, 13 December 2012
	Place	: Office of Municipality of Enschede
	Duration	: 30 minutes
	Interviewer	: Muhammad Kurniawan
	Interviewee	: Derk Jan Eshuis (Internet Communication Advisor at Municipality of Enschede)

3.	Date	: Tuesday, 18 December 2012
	Place	: Office of Verbeterdebuurt (Amsterdam)
	Duration	: 1 hour
	Interviewer	: Muhammad Kurniawan
	Interviewee	: Stijn van Balen (One of founder and developer Verbeterdeburt)

B. The interviews protocol

Pre-interview	Sending e-mail request to the interviewees. The e-mail contains identity of the researcher, title of the research, brief explanation of the research, points that are sought during the interview and estimation of interview duration.
During the interview session	 Introducing interviewer identity Introducing the aim of the research Explaining briefly about the research and the information that is sought Explaining the reasons why the interviewee has been chosen for this research Informing that the interview will be recorded and asking for interviewee's consent Explaining that the data from interview will only be used for the research and not for other purposes Informing the interviewee that the summary of the interview will be sent to the interviewee to ensure that the researcher quotes correctly and whether the interviewee has any objection towards the contents Asking documents/data which relevant with the research (towards the municipality's staffs)
Post-interview	 Transcribing the interview records Summarizing the points obtained from interview and sending it to the interviewee Points obtained from interview were incorporated with other data from other

sources for further analysis.

- C. List of questions to guide during the interviews
 - A. Interviewee: Marcel Bouwhuis (Deputy head public spaces, strategic advisor)

Information sought			Questions
a.	The way citizens to	1.	How citizens involve solving problems found in public space such as
	participate in		pothole, litter dumped inappropriately, broken street lamp, etc?
	public space		Is there mechanism for citizens to report?
	problems, such as		What is the procedure?
	pothole, litter dumped	2.	Why do you think this method is appropriate (incentives for municipality and citizens to involve)?
	inappropriately,	3.	How long has the method been used?
	broken street lamp, etc.	4.	How many citizens involve per month/per year? (ask the document if possible)
		5.	Is the method effective? (involve citizens, helping municipality)
			Why or what should in your opinion?
		6.	Any rule or law regulates this method?
b.	Credibility of	7.	How this system verifies the information submitted to ensure the
	information issues		credibility? (e.g. to ensure that the report is not fake)
c.	Transparency aspects	8.	Does the system provide feedback for reporter? (for example: notification that the case resolved)
		9.	Is there any mechanism that enables public see the report and how municipality addresses the report? For examples display all the report
			and the undertaken action in the website?
		10.	If so, why? What are the aims of this transparency aspect?
		101	If not, why? Or what should in your opinion?
d.	Geo-ICT aspects	11.	Does the system include geo-ICT? (maps, navigation)
cı.			If so, why? (any particular reason) (advantages and disadvantages)
			If not why? (I just thought that it is common now)
e	Ethic issues such	12	How is the confidentiality of the reporters kept? (who can see
с.	as confidentiality.	12.	anonymity)
	security of the data	13	What about the security issues? Data taken for other purposes by other
		10.	parties (commercial etc.)
f.	Partnership	14.	Do you have partners related to the system outside municipality? (Media.
	- шр		NGOs, etc.)
g.	Parties that have	15.	Do you think there is any party that have interest and take advantage
	interest and take		from citizens' report?
	advantage from the		For example company that knows the problems reported (potholes, etc.)
	app. (Lurking		then ask the municipality to hand the project to it. If so, how do you deal
	intermediaries)		with that issue?
h.	Publication/how	16.	How do you publicize the reporting system to ensure anyone knows and
	to be traced		uses it?

1.	Limitations of the	17.	What are the limitations of this method? (not transparent, internet
	method		connection, etc.)
		18.	How do you deal with that limitation?
j.	The reason of not	19.	Do you know buitenbeter app? Mobile application that allow citizens
	to use the		using mobile phone report problem found in the street (equipped with
	buitenbeter app in the municipality		picture and geo-location)
		20.	Does the municipality want to deploy the app? Why or why not?
		21.	Do you think the app can bring a difference in the municipality's
			performance in dealing with public services? (mobility, easiness, geo-
			information, picture)
		22.	Is the report from the buitenbeter app credible (would you take action
			on it) for Enschede municipality?
k.	Important aspects	23.	What are the most important things in dealing public space problems?
			(Citizens' participation, the use of technology, the way to publicize,
			transparency aspects, etc.)

B. Interviewee: Derk Jan Eshuis (Internet Communication Advisor at Municipality of Enschede)

Ι	nformation sought		Questions
a.	The way citizens to participate in public	1.	Why the municipality relies on crowd source for helping them in public space issues?
	space problems	2.	What incentives that make citizens want to involve?
		3.	Is the crowd source power that pushes the municipality take action? Other factors?
		4.	How effective of this method in helping Municipality: a) facing the problems found in public space; b) involving the citizens; c) achieving certain policy
b.	Transparency aspects	5.	Do you think the system that allows everyone to see the report (through the internet) bring some effects? (For example: increase accountability of Municipality, change citizens' behaviour, etc.)
		6.	Why not put the map in your website?
		7.	The underlying value/reason behind the transparency policy
		8.	Who actors that also see the report then take action of that? For
			example other government body, politicians, and media that can force
			municipality to respond the report from citizens.
c.	Geo-ICT aspects	9.	What are the effects of the use of geo-ICT? (e.g. increase effectiveness,
			increase or reduce cost, helping municipality to solve certain problems
			that hardly to handle without geo-ICT)
d.	Partnership	10.	Partners related to the system outside municipality (media, NGOs, etc.)
		11.	Report from buitenbeter? Respond or not?
e.	Parties that have interest and take	12.	Do you notice that there are parties that have interest and take advantage from report that available for public?
	advantage		For example company that knows the problems reported (potholes,
c		12	etc.) then ask the municipality to hand the project to it.
Γ.	Publication/ now to	13.	uses it?

be traced

g.	Limitations of the method	14.	Limitations of the reporting method and the way to deal with that limitation
h.	The relationship with verbeterdebuurt app	15.	The way the verbeterdebuurt system included in Municipality system

C. Interviewee: Stijn van Balen (One of the founders and the developers the Verbeterdebuurt)

Information sought			Questions			
a.	History, vision and	1.	What are motivations behind the creation of the app?			
	goals behind the	2.	What is your vision and goals?			
	creation of the app	3.	Has the goals achieved?			
		4.	What metrics do you use to measure the achievement?			
b.	Mechanism of	5.	How the app and the system behind works?			
	Verbeterdebuurt system	6.	What's the role of people behind?			
c.	The relation with the municipality	7.	Could you explain what requirements for municipality to connect the app into their information system? (contract, fee, agreement) I saw in the website that 75 % of Dutch municipalities use Verbeterdebuurt, where are the rest municipalities? Why don't they use it? How is the relationship with those that don't use the app? Do you know the case that municipalities that do not employ the app but they respond the report from the app?			
d.	Incentives for	8.	What is the incentive for municipalities employ the app? Are they			
	reporters and target		satisfied? How do you measure it?			
	group	9.	What is the incentive for citizens using the app?			
			Does the incentive works? Are they satisfied? How do you measure it? How many reports per year since 2009? How many/percentage problems solved? Who is the most to user (student, age, sex, etc.)			
e.	Credibility of information issues	10.	How the system verifies the information submitted to ensure the credibility? (to avoid fake report)			
f.	Transparency aspects	11.	Besides providing feedback for the reporters, and displaying all the reports in internet, is there any other way that make more people see the report and how municipality addresses the report?			
		12.	What do you think the effects of the allowing all reports and response to deal to be seen by many eyes? (increase accountability, change behaviours) (is it part of your goals)			
g.	Geo-ICT	13.	What are the effects of the use of geo-ICT (e.g. increase effectiveness, increase or reduce cost, helping municipality to solve certain problems that hardly to handle without geo-ICT How do you measure the effect?			
		15	Do you think the map that increases the likelihood of response from			
		13.	by you time that the map that increases the incentiood of response from			

		16.	municipalities? (or picture, or contract or other aspects) What are the disadvantages to include geo-information in the app? (Costly, etc.)
h.	Ethic issues such as	17.	How is the confidentiality of the reporters kept?
	confidentiality, security of the data	18.	How do you treat the data? Do you use data for other purposes? Used by other parties?
i.	Funding	19.	How is the operational of the app/system funded?
j.	Partnership	20.	Do you have partners in developing the app?
			Partner that work together to operationalize, advertise, analyse, doing some part of the system?
k.	Parties that have interest and take advantage from the app. (Lurking	21.	Do you think there is any party that have interest and take advantage from the app? For example company that knows the problems reported (potholes, etc.) then ask the municipality to hand the project to it.
	intermediaries)		
1.	Advertisement, how to be traced	22	How do you advertise the app so anyone knows and use it?
m.	Limitations of the app	23	What are the limitations of this app? (Internet connection, smartphone ownership, etc.) How does this limitation addressed?

ntives	Targeted entities	12	It is expected that the information disclosed can attract attention of many eyes which eventually e	The increased awareness of people as well as human
Incer	Disclosers	11	Easy to report (but NS). Also value to create fair election.	Value to strive for Human rights in Burma
The	credibility of information	10	It does not verify the information submitted, just accept as it is.	,
	Targeted entities	6	It is supposed to target politicians which run for office in the election and government election supervisor. It hopes that citizens, media and other parties will follow up the information with actions	Parliament, governments, and politicians.
- Coolocia	UISCIOSEIS of information	80	Citizens, internation local media.	Mainly Media
Funding	and Partner- ship	7	Personal from members and ip with NGOs in Lebanon	Partners hip with other Burma NGOs, members
The way to	spread the information of the activities	9	Printing out business card, inform other friends, NGOs. Also spread through as RootSpace (host of several groups in Lebanon) and through hash tag on twitter	
and methods used	Data presentation	5	It uses map visualization (Ushahidi platform), timeline, and text reports. Map is used to display points of reports where the displayed can be customized by categorization such as type of reporters and kind of violence.	Using website to distribute information in form of: Text reports (PDF or word format), video, photo and Maps. Maps in the website are in
Tools a	Data collection	4	Report can be collected with many means such as; SMS, email, twitter, and web report form	-Collecting data and information from across source such as reports from UN, media.
	Activity	S	Monitoring Lebanon national election 2008. The project received report of violence during the election from citizens and media and spread the aggregated information in a map online	It collects information related to human rights issues from across sources. The information then managed and
Who or what	the intermediari es	2	A group of volunteered citizens which collaborativel y work to promote transparency. It consists of journalists, computer technicians, NGO members, etc.	A network of organizations and individuals strive for human rights
Name of the	project and the coverage area/ scale	-	Sharek961 (Lebanon/country) - listed in TTN website: <u>http://transpar</u> <u>ency.globalvoic</u> <u>esonline.org/pr</u> <u>oject/sharek961</u> - available online: <u>http://www.share</u> <u>k961.org/</u> It was initiated by citizens.	AL TSEAN-Burma (Alternative ASEAN network on Burma) (Burma/ Country)
	No		-	7

Appendix 2: Matrix of characteristics of transparency initiatives and the geo ICT-enabled intermediaries

61
	· · · · · · · · · · · · · · · · · · ·
right organizatio ns is expected to push authorized governmen t body to take action on human right issues	The reports published expected to influence the voters' preference
	Easy to report and the availability of feedback (check box of action taken toward the report). It gets 1,523 reports of peace. 4,982 visitors of the website
	It accepts the submitted information both from crowd and verified sources, but visualizatio n of the source based on color
	Candidates run for offices (legislative), politicians, and electoral authorities.
	Citizens and official trained monitors.
of parliame nt from several ASEAN countries	Partners hip: In Kenya case: NGOS, Interim Internatio nal Election Commiss ion (IIEC), informal relations hip with has relations hip with actors on the ground (police,
	Advertising in the newspaper (front page) on the days prior to the referendum, posters in malls, radio announceme nts, and through network of partners.
form of jpg format and Google maps. The maps are mainly to show information related election and protest of citizens. Geo ICT (maps) is used as a part of method to display aggregated data beside other methods. Information is mainly provided online, thus cannot serve area not covered by intemet.	Map visualization (Uchaguzi platform), timeline and text reports. Map (Uchaguzi platform) is used to display points of reports and can be filtered with categorization such as type of reporter and kind of violence.
-Conducting online pooling	The reports are coming from various means; SMS, email, twitter, and web report form
disclosed in a single website so that activists on Burma movement and other stakeholders can pick the information for other purposes. It also advocates and trains people to promote human rights	Monitoring election. It has been deployed in: Kenya's 2010 constitutional referendum, Tanzania's 2010 general election and Uganda's 2010 national election. It received report from citizens and trained monitors and displayed the aggregated information in a map online
and democracy in Burma. It is comprised of NGOs, political parties, journalists, student activists, think tanks and activists,	Internet platform (a derivative platform of Ushahidi).
 listed in TTN website: <u>http://transpar</u> <u>ency.globalvoic</u> <u>esonline.org/pr</u> <u>olect/altsean- burma-</u> <u>alternative-</u> <u>asean-network-</u> <u>burma</u> available online: <u>http://www.alts</u> <u>can.org</u> It was initiated by citizens. 	 3 Uchaguzi (Kenya, Uganda and Tanzania/ Country) Listed in TTN website: http://transpar ency.globalvoic esonline.org/pr oject/uchaguzi available online: http://www.uch aguzi.co.ke/ It was initiated by a group of individuals and organizations
	n

d d ss in the solution of the	
Value socia strive politic	
- It gets the credibility since the source of information comes from parliament' s official website.	
Government Members of Parliament	
Citizens Citizens ((tre-uses the public information)	
religious group, communi ty group) It gets grant from Europea n commissi on. The partnersh ip is with lnstitute for freedom frue for for for for for for for for for for	
Suggest people who access the web to spread information website	
Information can be seen by people by view the interactive discussion on website, map visualization, and blog. The website deploy Map of Ushahidi platform as a section of its pages. The map called Map of Social control. It discloses the promises from authorities related to public services and points it in the map. With the map, citizens can know where the settlement will be build, facilities which will get public funds etc. The map also shows the fuffillment of the promises (repaired, achieved, etc.) Re-use the public information from official website and format it in an attractive data presentation such as graph, statistics, provides API which allows data to be used by other developers to build applications using the data Map powered by Google is used as a spatial visualization to show the result of election and profile of the representatives. The map is combined with picture	the number of votes they
People can contribute to submit information or issues by filling in the web form or sending email. But The information about promises of politicians can only be submitted through email from parliament's official website	
Basically it bridges people with problems and people with problems and people who can offer the solutions. Some issues spread from civil rights, housing, health, poverty, law, criminal and how to deal with government administration. One of the activity sections is related to transparency; disclosing the promises of authorities related to development, budget allocation and the fulfillment of the promises of authorities related to development, thaget allocation and the fulfillment of the promises of authorities related to development. It also gives access for database such as the work of parliament, matendance of the MPs, voting statistics, decimentary decisions	
An online meeting medium for those who are interested in social change to communicate problems, offer and share the solutions. Online portal concern on legislative Poland.	
 Tak-tak-tak Tak-tak-tak (Russia/Country) listed in TTN website: http://transpar ency.globalvoic esonline.org/pr oject/tak-tak- tak available online: http://www.tak takak.ru/map/ taktak.ru/map/ available online: http://transpar ency.globalvoic esonline.org/pr oject/seimomet available online: http://www.sci available online: http://www.sci transpar ency.globalvoic esonline.org/pr available online: http://www.sci twas initiated by a 	Polisn man and then supported by

i		
it is hoped that the behavior of representat ives will also change	The reports are assumed will lead to the examinatio n of the violation by authorities. But this is very rarely happen due to the political situation in Russia	Governmen t is helped to know what is happening in the country. Sometimes police use the data to take measures towards violence
	Value of fairness in the election	Striving for transparen cy and fair election.
	It urges every reporter to provide evidence such as photos, videos or documents	It does not rely on crowd source information. Instead, it deploys trained reporters to submit the reporters to submit the agents who collect data from reporters will call back the
	Election commissioners and politicians	Government and police.
	Citizens	Trained reporters
	Partners hip with Media and Russia Russia	The funds supporte d by USAID. USAID. The partnersh ip with internatio nal and organizat ions. Supporte d also by Burundia n National
	1	
get.	The election violation reports are presented online using Ushahidi platform	The reports are presented using Ushahidi platform. It also publishes documents, and conducts press meeting with media.
	Receive report from citizens through phone call, SMS and the web form. The phone call is provided to overcome the internet network limitation	Receive report from trained monitors
	Providing hotline call to inform citizens about election. It also provides online tools for violation election reporting and documents the reports	Monitors Burundi's 2010 national election
	It is an independent election observer.	It is an Ushahidi based online platform to monitor election.
sponsors to develop the portal.	Golos (Russia/ Country) - listed in TTN website: <u>http://transpar</u> <u>encv.globalvoic</u> <u>esonline.org/pr</u> <u>oject/golos</u> - available online: <u>http://kartanaru</u> <u>sheniy.org/</u> It was initiated by election experts and civil society activists	Amatora mu mahoro (Burundi/Country) - listed in TTN website: <u>http://transpar</u> ency.globalvoic esonline.org/pr <u>esonline.org/pr</u> <u>intranspar</u> esonline.org/pr <u>intranspar</u> mu-mahoro - available online: <u>http://burundi</u> ushahidi.com/ It was initiated by
	Q	~

	1	
	The information is expected to influence preference of constituent s which eventually should change politicians' behavior	The response from the authorities and/or officials which are published and seen by many eyes in the website is expected to make them
	Struggling to fight against corruption	Citizens problems can be and articulated to be resolved
reporters to get more information. The reporters should fill in the form with specific	The source of information governmen vebsite website	It requires every reporter to register in the website
	Members of parliaments	Government authorities/offici als
	The NGO (data from officials website)	Citizens
Independ ent Election.	Work together journalist s and academic research ers	Privately funded by a business man
	Data presented as a database and can be retrieved from the website. The data categorized by area (municipal) are presented by a map. Pointing and clicking the area will show the data from the area.	Every submitted problem has registered number and is published on a webpage namely "card problem". The problem has a status that can describe whether problems solved, closed, there is petition and archived. A Google map is used to collect and show the location of the problems.
	Data collected from government officials websites	Issues are from citizens' reports/input through web form. Citizen fill in the data such as point on the map, and type of government organization that responsible for the issues
	Providing database surrounding legislative work and performance, from municipal, state and federal level. The data include; absence, donations, vote, spending, bills, lawsuits. The data are frequently used by journalists and researchers.	Offering an online medium (website) where citizens can post complaints, petitions, or inquiry towards government. This medium can unite the claims and then form petitions to be appealed to the government to get response. This response is monitored and displayed in the website.
	lt is a database.	An online portal.
Burundian citizens and international organizations	Excelencias (Brazil/ Country) - listed in TTN website: <u>http://transpar</u> <u>ercy.globalvoic</u> <u>esonline.org/pr</u> <u>oject/excel%C3</u> <u>%AAncias</u> <u>%AAncias</u> <u>esonline:</u> <u>http://www.exc</u> <u>elencias.org.br/</u> It was initiated by NGO transparencia Brazil	Democrator (Russia/Country) - listed in TTN website: <u>http://transpar</u> <u>ency.globalvoic</u> <u>esonline.org/pr</u> <u>oiect/democrat</u> <u>orru</u> - available online: <u>http://democrat</u> <u>orru</u>
	ω	თ

the problems properly.	Politicians/r epresentati ves will feel that they are monitored and eventually it is expected to change their behavior	The transparen cy is expected to change behavior of parliament members and governmen ť s officers
	Citizens are informed of legislation process and they can monitor their representat ives' political choice on certain issues	Value of empowerm ent where informed citizens can cause a social change
	Every citizen who wants to give input (votes) must register in the website	Any user or citizen who wants to submit information or report must register in the website
	Politicians and members of parliaments.	Government particularly municipality.
	Citizens	The platform and the citizens
	The funds is supporte d by ZENS ZENS	,
	1	Through community /members network and network.
	It presents information in form of graphic, statistics and map. The map can show votes of citizens and politicians and their region. Thus, users website can compare easily the voting on certain bills	Using Google map to display based on certain category about complaints, voter information, representative and the ward, and the location of community of the network
	It gets input from citizens through registration in the web	The data presented is mostly from government source. But some input such as complaints are from citizens through web form
	Presenting in its website an easy explanation of bills proposed by politicians with the information of the author. It also enables citizens to vote and compare their vote with politicians' vote.	Connecting people, informing and educating them in civic issues. Also providing online tools for citizens to see voter information, representatives, and to post their complaints on city issues
	An online web tool where citizens can vote to support and against on a bill proposed by their representativ e and compare their votes with politicians' vote.	A social network platform or a meeting for citizens who care in change.
It was initiated by citizens and supported by businessman.	Votenaweb (Brazil /Country) - listed in TTN website: http://transpar ency.globalvoic esonline.org/pr oject/votenawe b - available online: http://www.vot ceraweb.com.br/ transparency, accountability and participation)	ljanaagraha (India/Municipal) - listed in TTN website: http://transpar ency.globalvoic esonline.org/pr oject/jianaagra ha - available online: http://www.ich angemycity.com
	2	Ź

	There was a case where the reports of violence lead to investigatio n by prosecutors . This consequen ce may influence the behavior of politicians parties	Reports published are expected to influence which consequent ly can influence the politicians and governmen t
	The partnership with well- known and accepted NGOS give the project credibility that make citizens trust and want to involve the project	Strive for a fair election
	Any report from trained official reporters will be directly approved. While report from citizen will be verified by or.	Any report comes from certified monitors are accepted directly. While the report from citizen will be verified by administrat possible. But, if not possible, the report the report
	Politicians	Politicians and government
	Citizens and trained official reporters	Citizens and certified monitors
	The funds are from and backed up by volunteer workers. The parthers are well- known Mexican NGOs, local industries and	It is supporte d by Sudan Institute for Research and Policy. The partnersh partnersh ips ard with Civil society organizat ions and national and internatio
	Twitter campaign	Attending and giving presentation in conference which has which has interest in the election. Also through partners' network.
	It displays election monitoring reports and violence by using Ushahidi platform	It shows the reports of either violence or good condition during the election by using Ushahidi platform.
	The information is from citizens reporting through email, twitter and web form. Other source of reports is from official reporters	The information comes from citizens reporting through web form or SMS. The reports also come from certified monitors.
	Monitoring the election process (federal and local)	Monitoring the Sudan 2009 national election
	An election monitor/obser ver.	An election monitor/obser ver.
It was initiated by a non-profit organization Janaagraha	 Cuidemos el Voto Mexico/Country) listed in TTN website: http://transpar ency.globalvoic esonline.org/pr oject/cuidemos- el-voto available online: http://www.obs ervacionelectora 12012.mx It was initiated by citizens. 	 8 Sudan vote monitor (Sudan / country) - listed in TTN website: http://transpar ency.globalvoic esonline.org/pr olect/sudan- vote-monitor - available online: http://blog.ush ahidi.com/index . http://blog.ush ahidi.com/index . http://blog.ush ahidi.com/index
		(~

	The tool is used not only by citizens but also by media. The information disclosed is assumed can can the behavior of political parties	Politicians who caught doing the violence will be published the profile in detail and their vessels. So that it is expected will give effect "name and
	Value and motivation to eradicate corruption	Strive for transparen cy and a fair election
published as unverified report.	The data is from governmen t.	The data is collected by trained monitors and every report verified before sent to the headquarte rs.
	Political parties	Politicians and political parties
	The tool and people behind it which display information in attractive form such as chart and map	Trained monitors
nal NGOs	Sponsore d by a German opic organizat ion	Work together Human nght organizat ion of Sri Lanka
	Spread information through conference, and through partners' network	Campaign through press conference and Facebook fan page
	The aggregated data (donors, expenditures, alliances) is presented in chart, graph and map. The Google map is used to display the districts and the value inside the districts	In the website, it provides reports, press releases, podcast, and documents related to election. It also uses Google map to display information about incident and violence of the election. Within the points on the map, some detail information provided such as photo as the evidence.
	The data is obtained from officials website	The data is collected from the ground by deploying some stationary monitors and mobile team.
	Providing data about financial of political parties that has been aggregated and presented in easy to understand way	Gathering information on violence, mal practice and intimidation in election. Then the information is published to inform citizens
	An online database and in the same time an online tool to visualize financial data of political parties.	An organization concerned on fair election.
<u>monitor/</u> The development concept is from Sudan Institute for Research and Policy	 14 Dinero Y Politica Argentina / country) enurty) listed in TTN website: http://transpar ency.globalvoic esonline.org/price esonline.org/price pol%C3%ADtica money-politics available online: http://dineroyp olicca.org/ It was developed by a group of citizens who care about civic rights 	 15 Centre for monitoring election violence (Sri Lanka /Country) listed in TTN website: <u>http://transparency.jtpalvoic esonline.org/project/centrency.jtpalvoic election-violence</u> available online:

shame"	Published citizens' reports can invite society dissatisfacti on when not responded property. Thus, it is expected will lead to governmen t accountabil ity in delivering public services.	News and reports published will educate voters and change voters' preference. Politicians should consider this
	Value to bring social change	Volunteer view the task as a civic duties, while while citizens are more due to awareness value of fair election
	Every reporter must register.	Any published report from registered volunteer will be marked as approved and verified, while the report from crowd-
	Government	Government (election committee)
	Citizens	Volunteer reporters and citizens
	It is self- financed and conderned d by organizat ion that concerne d on civic issues. The partnersh ips are with local and national NGOS, Phone Network company ent	It is supporte d by computer professio nal union. The partnersh ip are with other NGOs
	Campaign through Facebook and partners' network	Campaign through Facebook and twitter, offline education session
	It uses map (Ushahidi platform) to display reports/complaints and can be filtered based on categorization.	It spread the information by posting news in the web. It also publishes citizens' report related to election violence in a map using Ushahidi platform.
	The issues are submitted through SMS and web form.	The information comes from citizens' report through SMS, email, twitter and web form.
	Receiving complaints from citzens about government services. Then it aggregates and publishes the information in the internet to get responses from government	Conducting citizen journalism, posting news, and publishing reports related to the election violence they get from citizens
	An online platform for civic complaints of government services.	An election monitor.
https://cmev.w ordpress.com/ It is initiated by organization concerned on election violence	 Kiirti (India/Country) listed in TTN website: http://transpar ency.globalvoic esonline.org/pr oject/kiirti available online: http://www.kiir ti.org/ It was developed by non-profit organization concerned on using mobile technology and internet to build 	 7 VoterReportPH (Philippine / Country) - listed in TTN website: http://transpar http://transpar ency.globalvoic esonline.org/pr oiect/voterepor tph - available online: http://voterepo

	e ormation closed but liticians indidate elected) noped ir ctability ctability entually entually ir navior	e ailable ormation expected courage d push d push orceme officials
	Journalism Th students do infr the task for dis applying aby principles (ca and also or seek credit is the or their can and also or ele eve eve the bel	By Th oublishing aver he infit violence, it is e s hoped to hat en disclosers an disclosers an inks to enti- inks to enti- hey need. to
source just marked as approved	The information from academic which can be verified ly ly	The reports I from other organizatio n are entered i entered i sithi itself and become a become a become a becomentat
	Politicians either candidate or elected representatives	Law enforcement officials
	The researcher who unearth the data from newspaper , interview, criminal records.	Human rights activists and organizatio ns and citizens
which concerne d on citizens journalis m, students, workers union, non-profit ion, professio nals	It gets funds from donation of Mumbai's citizens. The partnersh with national NGOs and Universiti es	lt is funded by some by internatio nal organizat ions. The partnersh ips are with
	Published by media which take the content from the web to publish. The information also spread through announceme nt in the nt in the radio, person- to-person by the members staff, and partners' network	Through media
	The data presented in in the website based on search query and map visualization. There are also data in form of podcast and video. The map is used to enable citizens to search politicians/representatives based on the region.	Some parts of the data are presented in Google map to show point of human right violation. Inside the points contains detail information when clicked. There are some problems related to slow internet connection and high fee internet access
	The data obtained from research journalism students to get their academic credit. The data is sometimes unearthed from parliament website, video interview, and online newspaper archive.	The data is submitted by human right activists and organizations as well as by ordinary citizens.
	Enabling citizens to track their representatives by providing a large database of politicians profile (elected and candidate), their promises and realization.	Providing database of human right violation in Cambodia
	A non-profit institution concerned to monitor politicians.	A human Right portal.
<u>rtph.org/</u> It was initiated by computer Professional union.	 18 Mumbai votes (India /Country) listed in TTN website: <u>http://transpar</u> <u>ency.globalvoic</u> <u>esonline.org/pr</u> <u>esonline.org/pr</u> <u>esonline.org/pr</u> <u>esonline:</u> <u>http://mumbaiv</u> <u>otes.com/</u> It was initiated by citizens. 	 19 Sithi (Cambodia/ country) listed in TTN website: <u>http://transpar</u> <u>ency.globalvoic</u> <u>esonline.org/pr</u> <u>oiect/sithi</u> available online: <u>http://sithi.org</u>

_		_		_		
It also	provide a	wide	network for	those work	in human	rights issue
ion.						
National	and	nternatio	nal	organizat	ons,	NGOs.
	It was initiated by	organization which	concerned on	human rights issues	>	