



THE ROLE OF EMERGING INFORMATION AND COMMUNICATION TECHNOLOGIES IN FACILITATING PARTICIPATORY URBAN GOVERNANCE

By

Ghada Sherif Ahmed Mourad

A Thesis Submitted to the
Faculty of Engineering at Cairo University
in Partial Fulfillment of the
Requirements for the Degree of
MASTER OF SCIENCE
in
Architectural Engineering

FACULTY OF ENGINEERING, CAIRO UNIVERSITY
GIZA, EGYPT
2017

THE ROLE OF EMERGING INFORMATION AND
COMMUNICATION TECHNOLOGIES IN FACILITATING
PARTICIPATORY URBAN GOVERNANCE

By
Ghada Sherif Ahmed Mourad

A Thesis Submitted to the
Faculty of Engineering at Cairo University
in Partial Fulfillment of the
Requirements for the Degree of
MASTER OF SCIENCE
in
Architectural Engineering

Under the Supervision of

A. Prof. Dr. Mohamed Anwer Zayed

A. Prof. Dr. Heba Allah E. Khalil

.....
Associate Professor
Architectural Engineering
Faculty of Engineering, Cairo University

.....
Associate Professor
Architectural Engineering
Faculty of Engineering, Cairo University

FACULTY OF ENGINEERING, CAIRO UNIVERSITY
GIZA, EGYPT
2017

THE ROLE OF EMERGING INFORMATION AND
COMMUNICATION TECHNOLOGIES IN FACILITATING
PARTICIPATORY URBAN GOVERNANCE

By
Ghada Sherif Ahmed Mourad

A Thesis Submitted to the
Faculty of Engineering at Cairo University
in Partial Fulfillment of the
Requirements for the Degree of
MASTER OF SCIENCE
in
Architectural Engineering

Approved by the
Examining Committee

A. Prof. Dr. Mohamed Anwer Zayed, Thesis Main Advisor

A. Prof. Dr. Heba Allah Essam Khalil, Advisor

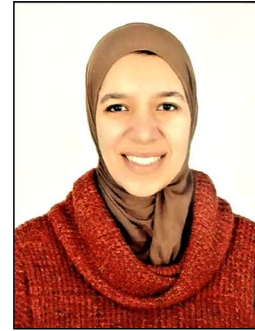
Prof. Dr. Emad Aly Eldin El Sherbiny, Internal Examiner

Prof. Dr. Ayman Fathallah Wanas, External Examiner

- Professor at Arab Academy for Science and Technology and Maritime Transport

FACULTY OF ENGINEERING, CAIRO UNIVERSITY
GIZA, EGYPT
2017

Engineer's Name: Ghada Sherif Ahmed Mourad
Date of Birth: 11/6/1990
Nationality: Egyptian
E-mail: ghada_1990@hotmail.com
Phone: 01222748751
Address: 44 Mohi El-Din st., Dokki, Giza
Registration Date: 1/10/2013
Awarding Date:/....../2017
Degree: Master of Science
Department: Architectural Engineering



Supervisors:

A. Prof. Dr. Mohamed Anwer Zayed
A. Prof. Dr. Heba Allah Essam Khalil

Examiners:

Prof. Dr. Ayman F. Wanas (External Examiner) Professor at AAST
Prof. Dr. Emad A. El Sherbiny (Internal Examiner)
A. Prof. Dr. Mohamed A. Zayed (Thesis Main Advisor)
A. Prof. Dr. Heba Allah E. Khalil (Advisor)

Title of Thesis:

The Role of Emerging Information and Communication Technologies in Facilitating Participatory Urban Governance

Key Words:

ICT-based participation; Citizen participation; Online platforms; Urban governance; Spatial knowledge management

Summary:

There is a lack of proper communication channels between different governing bodies and the society that can enable inhabitants to participate in urban governance in Greater Cairo. The aim of this research is to investigate how the emerging Information and Communication Technologies (ICTs) facilitate and enhance citizen participation in the urban governance process. This research started with a theoretical study of Henri Lefebvre's right to the city concept with a focus on the right to participation, in addition to a study of three different levels of citizen participation in spatial knowledge management in the urban governance process. Then the research analyzed three online platforms from around the world that enable citizen participation in spatial knowledge management. Finally, the research evaluated the situation of Greater Cairo with regards to ICT-based participation through mapping local ICT-based participatory initiatives, analyzing El-Nargis Neighborhood Development Association, and carrying out a questionnaire that measures readiness of Greater Cairo inhabitants to participate in the urban governance process through the emerging ICTs. The results of this study indicate that the emerging ICTs are currently complementing the traditional ways for participation in Greater Cairo. The potentials of ICTs are not fully exploited despite the willingness of the inhabitants to make use of them in future participatory practices. This research ended with a set of recommendations derived from the overall study for future ICT-based participation in Greater Cairo.

Acknowledgments

First of all, I would like to express my deepest gratitude to Allah. I could not have accomplished any of this without Allah's guidance and blessings. And as the Prophet Muhammad said, "He who does not thank people, does not thank Allah".

I have been very lucky with all the caring and supportive people around me. I would like to start by thanking my parents for their heartfelt and unconditional support, and my siblings for their continuous motivation. With a special thank you to my sister Heba for her generous efforts and guidance in every step of the way.

I would like to thank a very special person who motivated me and helped greatly with my local case study, my aunt Sahar Mourad. Thank you for introducing me to El-Nargis Neighborhood Development Association, for helping me gather all the necessary information for my study, and for being so patient.

Of course, I was very lucky to have Dr. Heba Khalil and Dr. Mohamed Anwer as my advisors, whom I've learnt a lot from. Thank you, I really appreciate all the time and effort you put to enrich this research.

I would sincerely like to thank each and every one who answered my thesis questionnaire and generously helped me with the distribution, including my family members and friends. I would not have been able to reach such a huge number of participants in my study without your help and support.

Finally, I would like to thank my dear colleagues who motivated me, and were generous enough to share with me useful advice and information throughout the process.

Table of Contents

ACKNOWLEDGMENTS	I
TABLE OF CONTENTS.....	III
LIST OF TABLES	VII
LIST OF FIGURES	VIII
ABSTRACT	XI
CHAPTER 1 : INTRODUCTION	3
1.1. GENERAL INTRODUCTION	3
1.2. PROBLEM BRIEF	3
1.3. RESEARCH GOAL AND OBJECTIVES	4
1.4. RESEARCH HYPOTHESIS	4
1.5. RESEARCH METHODOLOGY	4
1.6. CONTENTS OF THESIS	6
CHAPTER 2 : THE RIGHT TO THE CITY	11
2.1. INTRODUCTION	11
2.2. RIGHT TO THE CITY CONCEPT DEVELOPMENT	11
2.3. WHAT RIGHT?	12
2.3.1. Right to participation.....	12
2.3.2. Right to appropriation.....	12
2.3.3. The role of public space.....	12
2.4. WHOSE RIGHT?	13
2.4.1. Diversity.....	13
2.4.2. Marginalized groups.....	13
2.5. THE RIGHT TO APPROPRIATION.....	14
2.5.1. Right to adequate housing.....	14
2.5.2. Right to a safe environment	15
2.5.3. Right to mobility	16
2.5.4. Right to public space	17
2.5.5. A collective right.....	18
2.6. THE RIGHT TO PARTICIPATION.....	19
2.6.1. Importance.....	20
2.6.2. Levels of participation	21
2.6.3. Who is responsible?	23
2.6.4. Citizen role in different public administration models	24
2.6.5. Challenges of participation	25
2.6.5.1. The issue of size	26
2.6.5.2. Social Exclusion	26
2.6.5.3. The issue of time	27
2.6.5.4. The issue of cost	27
2.6.5.5. Level of citizen organization.....	27

2.6.5.6.	Political will	28
2.6.5.7.	Participatory skills	28
2.6.5.8.	Different approaches to overcome these challenges	29
2.7.	CONCLUSION	29

CHAPTER 3 : PARTICIPATORY SPATIAL KNOWLEDGE MANAGEMENT

..... 33

3.1.	INTRODUCTION	33
3.2.	RIGHT TO INFORMATION	33
3.2.1.	What is the right to information?	34
3.2.1.1.	Transparency	34
3.2.1.2.	Accountability	34
3.2.2.	Impact of the right to information on urban governance	35
3.2.2.1.	Public awareness	36
3.2.2.2.	Effective citizen participation	36
3.2.2.3.	Empower the urban poor.....	36
3.2.2.4.	Fight corruption	36
3.2.3.	Right to Information in legislation	37
3.2.4.	Right to information tools	38
3.2.4.1.	Public meetings	39
3.2.4.2.	Information centers and stands.....	39
3.2.4.3.	Media	39
3.2.4.4.	Online information provision.....	39
3.3.	KNOWLEDGE PRODUCTION	40
3.3.1.	Local knowledge	40
3.3.1.1.	Types of local knowledge	41
3.3.1.2.	Characteristics of local knowledge	41
3.3.2.	Perceptions about local knowledge	43
3.3.2.1.	Deficit	43
3.3.2.2.	Complementary.....	43
3.3.2.3.	Co-production	44
3.3.3.	Role of citizens.....	44
3.3.3.1.	Monitoring and evaluation	44
3.3.3.2.	Give opinions and perspectives	44
3.3.3.3.	Share ideas	45
3.3.4.	Role of government	45
3.3.4.1.	Be available.....	45
3.3.4.2.	Reach out for citizens.....	45
3.3.4.3.	Empower	46
3.3.4.4.	Provide feedback.....	46
3.3.5.	Tools for gathering local knowledge	46
3.3.5.1.	Surveys.....	47
3.3.5.2.	Public hearings	47
3.3.5.3.	Report cards	47
3.3.5.4.	Community-based mapping.....	47
3.3.5.5.	Online knowledge production.....	48
3.4.	KNOWLEDGE PARTNERSHIP	48
3.4.1.	Forms of knowledge partnerships	49
3.4.1.1.	Community knowledge partnerships	49
3.4.1.2.	Multi stakeholder knowledge partnerships	50
3.4.2.	Purpose of knowledge partnership	51
3.4.2.1.	Issue exploration	51
3.4.2.2.	Conflict resolution	52

3.4.2.3.	Decision-making	52
3.4.2.4.	Action planning.....	52
3.4.3.	Success factors for knowledge partnership	52
3.4.3.1.	Stakeholder analysis	53
3.4.3.2.	Information provision	53
3.4.3.3.	Purposeful collaboration	53
3.4.3.4.	Transparency and trust.....	54
3.4.3.5.	Everyone's knowledge matters	54
3.4.3.6.	Avoid pre-determined outcomes	54
3.4.4.	Tools for knowledge partnership	55
3.4.4.1.	Workshops	55
3.4.4.2.	Charrettes	55
3.4.4.3.	Conferences	55
3.4.4.4.	Online partnerships	56
3.5.	CONCLUSION.....	56

CHAPTER 4 : TRENDING TECHNOLOGIES FOR CITIZEN PARTICIPATION IN URBAN GOVERNANCE59

4.1.	INTRODUCTION	59
4.2.	TRENDING TECHNOLOGIES FOR PARTICIPATION	59
4.2.1.	Internet and social media widespread.....	59
4.2.2.	Spatial technologies.....	62
4.3.	CHALLENGES OF ICT-BASED PARTICIPATION.....	62
4.4.	INTERNATIONAL CASE STUDIES.....	63
4.4.1.	596 Acres: Community Land Access Advocates.....	63
4.4.1.1.	Overview.....	64
4.4.1.2.	Citizens' online participatory experience	66
4.4.1.3.	Data collection and processing	68
4.4.1.4.	Impact.....	68
4.4.2.	FixMyStreet.....	69
4.4.2.1.	Overview.....	70
4.4.2.2.	Citizens' online participatory experience	70
4.4.2.3.	How they work with local authorities	72
4.4.2.4.	Impact.....	72
4.4.3.	Neighborland	73
4.4.3.1.	Overview.....	74
4.4.3.2.	Citizens' online participatory experience	75
4.4.3.3.	How they work with local organizations	78
4.4.3.4.	Impact.....	78
4.5.	KEY FINDINGS FROM INTERNATIONAL CASE STUDIES	78
4.6.	CONCLUSION.....	80

CHAPTER 5 : EVALUATION OF THE SITUATION IN GREATER CAIRO ...83

5.1.	INTRODUCTION	83
5.2.	LOCAL ICT BASED PARTICIPATORY INITIATIVES	83
5.3.	LOCAL CASE STUDY	86
5.3.1.	El-Nargis Neighborhood Development Association	86
5.3.1.1.	Overview.....	87
5.3.1.2.	Citizens' online participatory experience	88
5.3.1.3.	How they work with local authority	93
5.3.1.4.	Impact.....	93
5.3.2.	Key findings from local case study	97

5.4.	READINESS OF GREATER CAIRO INHABITANTS TO PARTICIPATE USING THE EMERGING ICTs	99
5.4.1.	Questionnaire description.....	99
5.4.2.	Sample profile.....	99
5.4.3.	Access to information	101
5.4.4.	Knowledge production.....	102
5.4.4.1.	Problem reporting.....	102
5.4.4.2.	Idea suggestion	105
5.4.5.	Knowledge partnerships.....	107
5.4.5.1.	Discussions with neighbors	107
5.4.5.2.	Working with different entities	108
5.4.6.	Future ways for participation	109
5.4.6.1.	Access to information.....	109
5.4.6.2.	Knowledge production	110
5.4.6.3.	Knowledge partnerships	111
5.4.7.	Key Findings from the questionnaire.....	112
5.5.	CONCLUSION	113
CHAPTER 6 : CONCLUSION AND RECOMMENDATIONS.....		117
6.1.	SUMMARY OF CONCLUSIONS	117
6.2.	RECOMMENDATIONS FOR FUTURE PRACTICE	118
6.3.	RECOMMENDATIONS FOR FURTHER RESEARCH.....	120
REFERENCES		121
APPENDIX A: QUESTIONNAIRE IN ENGLISH.....		133
APPENDIX B: QUESTIONNAIRE IN ARABIC		143

List of Tables

Table 2.1: Clarifying the definition of citizen engagement	19
Table 2.2: Public participation spectrum	22
Table 2.3: Citizen and administrator roles in public administration models	24
Table 3.1: Typology of local knowledges	42
Table 4.1: 596 Acres platform brief description.....	64
Table 4.2: FixMyStreet platform brief description.....	69
Table 4.3: Neighborland platform brief description.....	74
Table 4.4: Online platforms collective analysis	79
Table 5.1: El-Nargis Neighborhood Development Association brief description	87
Table 5.2: Citizens' online participatory experience via Facebook	89
Table 5.3: Citizens' online participatory experience via WhatsApp.....	91
Table 5.4: Collective analysis of the two online platforms	97

List of Figures

Figure 1.1: Research methodology	6
Figure 1.2: Research outline	8
Figure 2.1: Space occupation by different means of transportation	17
Figure 2.2: Ladder of citizen participation	21
Figure 2.3: Reciprocal actions by government and citizens in decision-making	23
Figure 2.4: Challenges of participation.....	26
Figure 3.1: Levels of citizen participation in spatial knowledge management.....	33
Figure 3.2: The right to information sequence of study.....	34
Figure 3.3: The assumed relationship between participation, empowerment, transparency and accountability	35
Figure 3.4: Principles of right to information legislation	38
Figure 3.5: Citizens as producers of knowledge sequence of study	40
Figure 3.6: Perceptions about local knowledge	43
Figure 3.7: Roles of citizens and government in knowledge production	45
Figure 3.8: knowledge partnerships sequence of study	49
Figure 3.9: Abstract, local and networked knowledge	50
Figure 3.10: Purposes of knowledge partnership.....	51
Figure 3.11: Success factors for knowledge partnering.....	53
Figure 4.1: Internet users in the world	60
Figure 4.2: Screenshot of Lichfield district council website homepage	61
Figure 4.3: Mobile compared to desktop internet usage by the end of 2015	61
Figure 4.4: Challenges of ICT-based participation.....	62
Figure 4.5: Printed materials for education and awareness	64
Figure 4.6: Screenshot of 596 Acres homepage	65
Figure 4.7: On-site information about a vacant lot	65
Figure 4.8: Screenshot of Living Lots NYC homepage	66
Figure 4.9: Screenshot of Manhattan block 544 lot 68 page on Living Lots NYC	67
Figure 4.10: Screenshot of Electric Ladybug Garden page on Living Lots NYC	67
Figure 4.11: Java St. Garden before and after local project organization	68
Figure 4.12: Screenshot of Lots to Love homepage of Pittsburg	69
Figure 4.13: Screenshot of FixMyStreet homepage	70
Figure 4.14: Screenshot of a problem reported on FixMyStreet	71
Figure 4.15: Screenshot of Brighton and Hove City Council problem reports on FixMyStreet	71
Figure 4.16: Screenshot of FixMyStreet page on Stevenage Borough Council website	72
Figure 4.17: Screenshot of PorMiBarrio homepage of Uruguay	73
Figure 4.18: Screenshot of Neighborland homepage	74
Figure 4.19: (Left) Workshop in Central Market	75
(Right) Public event in Mountain View	75
Figure 4.20: Screenshot of Central Market project page on Neighborland	75
Figure 4.21: Screenshot of “I want Market Street closed to cars in Central market” page on Neighborland	76
Figure 4.22: Screenshot of “I want a resource center for area young people on 6 th Street in Central Market” page on Neighborland	77
Figure 4.23: Screenshot of Ideas in New Orleans page on Neighborland	77

Figure 5.1: Screenshot of TADAMUN homepage	84
Figure 5.2: Screenshot of Cairoobserver homepage	84
Figure 5.3: Screenshot of Cairo Urban Initiatives Platform	85
Figure 5.4: Screenshot of Cairo Downtown Passageways platform	85
Figure 5.5: Screenshots of Bey2ollak Traffic mobile app	86
Figure 5.6: Screenshot of El-Nargis Neighborhood Development Association group on Facebook	87
Figure 5.7: Screenshots of the WhatsApp groups for cleanliness and gardens, and the main group	88
Figure 5.8: Screenshots of some of the questions asked on El-Nargis Facebook group	89
Figure 5.9: Screenshots of some of the announcements made on El-Nargis Facebook group	89
Figure 5.10: Screenshot of a problem reported on El-Nargis Facebook group	90
Figure 5.11: Screenshots of some of the actions planned on El-Nargis Facebook group	90
Figure 5.12: Screenshots of some of the targets set on the main WhatsApp group	91
Figure 5.13: Screenshots of problems reported on the lighting WhatsApp group	91
Figure 5.14: Screenshots of some the problems discussed on two different WhatsApp groups	92
Figure 5.15: Screenshots of some of the announcements made on the roads WhatsApp group	92
Figure 5.16: Screenshot of a summary of one of the offline meetings with local officials posted on El-Nargis Facebook group	93
Figure 5.17: Fixing around 1500 street lighting fixtures in El-Nargis	94
Figure 5.18: Hassan Fathy Street development in El-Nargis	95
Figure 5.19: Before and after garbage removal in El-Nargis	95
Figure 5.20: A new garbage company and new garbage containers in El-Nargis	96
Figure 5.21: Relocating loaders and street vendors away from Fatma El Sharbatly Square	96
Figure 5.22: Enhancing public greenery in El-Nargis	97
Figure 5.23: Participants spatial distribution throughout Greater Cairo	100
Figure 5.24: Age of participants	101
Figure 5.25: Gender of participants	101
Figure 5.26: Professional background of participants	101
Figure 5.27: Whether participants had access to information or not	102
Figure 5.28: Whether information was sufficient or not	102
Figure 5.29: Means by which participants had access to information	102
Figure 5.30: Whether participants face problems in their neighborhoods or not	103
Figure 5.31: Kind of problems that participants faced	103
Figure 5.32: Current situation with regards to problem reporting	104
Figure 5.33: Whether participants had ideas for their neighborhood development or not	105
Figure 5.34: Kind of ideas that participants had for development	105
Figure 5.35: Current situation with regards to idea suggestion	106
Figure 5.36: Whether participants discussed neighborhood issues with their neighbors or not	107
Figure 5.37: Whether participants took action based on these discussions or not	107
Figure 5.38: The way participants communicated with their neighbors	107

Figure 5.39: Whether participants worked in collaboration with different entities for development or not	108
Figure 5.40: The different entities participants worked with.....	108
Figure 5.41: Whether the collaboration was successful or not	109
Figure 5.42: The way participants collaborated with the different entities	109
Figure 5.43: The way participants would like to have access to information.....	110
Figure 5.44: The reason for refusing to have access to information in the future	110
Figure 5.45: The way participants would like to communicate with officials to contribute with information	111
Figure 5.46: The reason for refusing to contribute with information in the future.....	111
Figure 5.47: The way participants would like to collaborate with their neighbors for development.....	111
Figure 5.48: The way participants would like to collaborate with the different entities for development	112
Figure 5.49: The reason for refusing to collaborate with neighbors in the future	112
Figure 5.50: The reason for refusing to collaborate with different entities in the future	112

Abstract

Greater Cairo is witnessing a great deterioration in its built environment and the inhabitants are the ones facing these urban challenges on a daily basis. However, there is a lack of proper communication channels between different governing bodies and the society that can enable citizens to participate in urban governance. The aim of this research is to investigate how the emerging Information and Communication Technologies (ICTs) facilitate and enhance citizen participation in the urban governance process in Greater Cairo. This research started with a theoretical study of Henri Lefebvre's right to the city concept with a focus on the right to participation, in addition to a study of three different levels of citizen participation in spatial knowledge management in the urban governance process. Then the research analyzed three online platforms from around the world that enable citizen participation in spatial knowledge management. Finally, the research evaluated the situation of Greater Cairo with regards to ICT-based participation through mapping local ICT-based participatory initiatives, analyzing El-Nargis Neighborhood Development Association, and carrying out a questionnaire that measures readiness of Greater Cairo inhabitants to participate in the urban governance process through the emerging ICTs. The results of this study indicate that the emerging ICTs are currently complementing the traditional ways for participation in Greater Cairo. The potentials of ICTs are not fully exploited despite the willingness of Greater Cairo inhabitants to make use of them in future participatory practices. This research ended with a set of recommendations derived from the overall study for future ICT-based participation in Greater Cairo.