

# Systems Thinking and E-Participation: ICT in the Governance of Society

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# Chapter 1

## Introduction: Searching upon the Limits of E–Government and E–Participation— A Systemic Appraisal

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### ABSTRACT

*This chapter gives an overview of the phenomenon of e-government within the context of the information society. The importance of values, critical thinking and boundaries is raised for the study of this phenomenon. The chapter offers a critical appreciation of the dominant discourse of e-government to open up new possibilities for enquiry, intervention and citizenship.*

### INTRODUCTION

Those of us who have had the fortune of witnessing the last years of the twentieth century and the beginning of the new millennium would say that the pace of change is still increasing. Computers are now essential part of our daily lives, and so is electronic information. Worldwide we see that we have become a global information society, and as such, it is time to think about how the ways in we relate to each other have unfolded.

This book is about the phenomenon of electronically mediated participation (e-participation) in society, which it has been commonly associated

with electronic government (e-government). One could say that e-government seems to be an explicit or visible manifestation of e-participation in the same way in which one could say that the internet is an explicit manifestation of the information society. In both phenomena we have to say that neither e-government nor the internet as visible manifestations can account for all past, present and future developments. Our task is then to go beneath the surface of these phenomena, and try to understand the thinking behind their development so we can contribute in theory and practice to better it. We do this to see if as policy makers, practitioners or citizens we need to positively change the ways in which both e-participation and the information society are being developed.

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This chapter presents an introduction to the topic of e-participation and the book in general. We contextualize it within the information society, a discourse that can help us make sense of the changes in societies that we have been witnessing and will continue to be either witnessing or intervening in. Our initial contextualization aims to dispel a common idea about this phenomenon as something completely revolutionary or emerging out of the blue. With this conceptualization, we offer two main alternatives to talk about e-participation. We hope to give the reader some elements that they could explore when reviewing the collection of essays that the book contains.

The chapter presents then two main perspectives to understand e-participation by looking at e-government in official and non-official ways. The first one refers to what has dominated the development of e-government in the context of the information society. The second one emerges as a response to the need to go beneath the surface of the official version and complement or challenge what we see is in place in e-government initiatives. The emerging nature of this second perspective also gives us the opportunity to include developments in the use of technologies by people in society. At the end of the chapter we propose some ways forward to inform the thinking about e-participation.

To start our discussion we put ourselves in the picture of the network idea of society.

## **SOCIETY AS A NETWORK OF INFORMATION**

Individuals who ventured to make sense of the changes happening in our societies in the 80s and 90s talked about the emergence of a new paradigm for society: That of a network. What they meant was that a society (national, regional, local or global) could be conceived of as a network of flows of information. Such network was de-centering traditional centers of power in organizations. It

was supposed to open space for the emergence of new forms of organizations. De-centering of power was possible because information could now flow instantly through different and geographically spread physical locations, and ultimately through different groups of individuals.

Through history we are used to think of society in terms of flows of resources, influences, relations with governments and power. However and recently, information and communication technologies were greatly contributing to a shift in our understanding of society as a network of information. Technologies have contributed to enhance information exchange as well as generate economic opportunities. With them not only there would be the possibility for societies to facilitate the creation and exchange of information anywhere as a capability to leverage economic growth. Technological change then leads to change the nature of job structures, consumer behavior and ultimately institutional arrangements (Perez, 1983)

The information-based network idea of society presupposes that social change is to be a partial result of technological one and conceived as a societal improvement in itself. Little is explicitly said about how social changes are to take place, or the sort of institutional impacts that are to unfold at different levels in society. We only know that there would be exclusions when traditional nodes of power (e.g. institutions) would be—in principle displaced to give way to ‘hubs’ or particular locations. Such hubs would attract talented individuals and leave behind those not so-talented or with little possibilities to skill themselves to participate in this network of flows of information and knowledge. Institutional resistance was considered but with time overcome due to the inevitability of technological adoption. How institutions could make use of technology to perpetuate them-selves at the expense of society was considered part of such change (Toffler, 1992).

Thus, within the network idea there was consideration of changes at high cost for those not

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being prepared to adapt to them. Information was to become the new strategic asset of organizations and governments which needed to be protected; those with access to it would be at advantage from others. This sort of exclusion was perceived by some as a threat to society. To this possible outcome of the development of the network society, Castells (2001) says:

*'Why don't you leave me alone?! I want no part of your Internet, or your technological civilization, of your network society!' Well, if this is your position, I have bad news for you. If you do not care about the networks, the networks will care about you, anyway. For as long as you want to live in society, at this time and in this place, you will have to deal with the network society (p.282).*

With this, Castells signals the inevitability of change, and the need of individuals to take action on the face of it. He shows how in a number of cases how people can take collective action with the help of technologies so as to redress existing imbalances of power as well as protect (or rescue) their own values, interests and ultimately concerns for their societies. Although this can help us make sense of the change that takes place, we need as individuals to go beyond the possibility of 'reactive' or 'one sided' (e.g. government-led) action, and involve both as part of a whole phenomena which we call e-participation. Critical thinking is needed not only to engage people but to review the assumptions and limitations of the network idea and its implications for people's participation in societal affairs. In this regard, it is important to consider that although individual potentiality increases in the information-based network idea of society, there is still a need of creating and developing collective groups in order to have a sustainable impact in society if it is considered to be relevant.

## VALUES, CONCERNS AND CRITICAL THINKING

The development of the information society has also brought its critics who argue that in this radical transformation the idea of community is being undermined if not lost (Afele 2003; Mansell, 2002; May, 2002; Menzies, 1996; Wresch, 1996). The voices of marginalized groups or countries can still be heard in this regard, but often these voices have been (hopefully partially) silenced by other discourses (environmental protection, economic crises, terrorism, etc). Such voices tell us that people are being uprooted from their communities, and they need to go back to it in some way or another. Critics of modern society discourses do not favor the radical nature of transformations and prefer a more gradual process (Webster, 2002) in which people could still maintain their social relations (Brown & Duguid, 1999) and decide on which values they want to keep for themselves and future generations. This claim also suggests that for new forms of interaction (e-participation included) needs consideration of the social context in which people are as a substratum that shapes change in society. It also needs active engagement with such social context and its particular forms of participation, community involvement, and information technology use. Unfortunately, this consideration is being replaced by forms of consumer-like engagement in the information society (Mattelart, 2003).

Maintaining the above consideration helps us to give momentum to the idea of collectively driven action that arises when some of the 'pioneer' information societies have not achieved a number of desired benefits (inclusiveness, participation, cohesiveness). In the words of Wickam (1997), for instance we have early evidence about the information society in Ireland. At that time, he acknowledged that despite the pervasiveness of information and communication technologies,

*Individuals buy and sell across the world, but are unable to sustain relationships of mutual trust with their neighbours. (p.289)*

This and other claims (Van Audenhove, Burgelman, Nulens, & Cammaert, 1999) speak about the social nature of changes and how we still need the social fabric even to promote radical transformations (Webster, 2002). There are to be intermediaries that ensure that people do not remain marginalized from accessing information and technologies (Madon et al, 2004). This can also mean that practitioners and policy makers or individuals with expertise in the management of information systems and technologies need to mediate between revolutionary possibilities for the development of societal change and the social fabric. Those advocating new forms of electronically mediated participation could benefit from looking at how a better degree of understanding of the context and conditions for such participation can be gained through theory and practice.

For the information society, rescue from this potential risk of individual isolation (or exclusion) comes through critically thinking about the network paradigm. There are two aspects we need to consider in order to review the revolutionary and inevitable nature of the network paradigm in society. Firstly, it is the idea that we are not dealing with a completely revolutionary idea. Some critical thinkers argue that the network idea was not new. Mattelart for instance (2003) argues that since the nineteenth century and with a concern to improve human communication in societies, the idea of a big communication network has been in the minds of many individuals. A network would facilitate the satisfaction of individual needs if we are able to highlight these needs and be supported by other people in the pursuit of needs' satisfaction. Behind this idea is the notion that mankind is in the pursuit of realization and that societies are to help individuals fulfill such goals. Paramount to the idea is the possibility of human communication directed to identify and address such needs,

but change takes place within a social context. As simply put by May (2002):

*...The vision of an information society itself often takes the character of an all-encompassing story about this new age...when we look at what allows some of us to become rich and the rest of us merely to get by on our pensions, this still has something to do with who owns what. (pp.1-2)*

Secondly and in support of the importance of considering the social context in which e-participation is to take place, there is a systemic view of society within the idea of a network. In the twentieth century we see again that some researchers aim to model the behavior of human, animals and organizations, and that communication processes can be improved so as to enable those parties involved to grow together (Turner, 2006). The idea is more evident in the case of Japan, where a plan was drawn to develop the Japanese Information Society. According to Masuda, one of the key writers of the information society in Japan (Masuda, 1980):

*The hypothesis can be formulated that the future information society will be a 'highly organismic society' resembling an organism. What I am referring to will probably be a multi-centered complex society in which many systems are linked and integrated by information networks. Moreover, this society will have the dynamism to respond more quickly and more appropriately to than contemporary society to changes in the external environment... (pp.58-59)*

The above two aspects (consideration of the social context and the systemicity of the new information-network based paradigm) give us the possibility to consider different aspects that are to be interacting with each other at different levels (individual, collective) in the information society. The phenomena of e-participation seems to adhere to the information-based network idea



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of society, but now we need to consider the social conditions that can help its development as well as how to mitigate potential exclusions that result from it. Thinking in terms of ‘systems’ (e.g. social, technological, intra and inter-organizational) can help us to mediate in the dynamics of change. Using the ideas and language of systems, we can then explore the implications of their unfolding, as well as make use of the systemic nature of change to improve e-participation and with it the society as a whole. Even more, adopting a systemic perspective helps us to critically address the way in which e-participation and information society are becoming social constructs upon which social change is grounded.

There is another challenge to face. The pervasiveness of technologies in business organizations influences the ways in which we adopt them when it comes to use technology in the realm of the ‘public’. The literature of management talks about the ‘value’ that technologies can leverage for customers, and of the importance of aligning corporate plans to those that aim to implement systems and technologies, all in the name of competitive advantage (Ward & Griffiths, 2002). This partly explains why now in the realm of public administration and for many societies, we now have a number of accounts that portray new forms of organization and management of the technology function within government (Contini, 2009; Dunleavy, Margetts, Bastow, & Tinkler, 2006), all of them driven by the notion of ‘value’ and ‘customer-oriented’ service. What is even more concerning is that the adoption of technologies for public administration or service delivery is said to be on the name of ‘citizen-centred’ perspectives of such services or functions. An example is the European strategy for e-government, whose policy documents reveal such a vision as a way of improving participation (European Commission, 2007).

This is also why we believe that e-government has been strongly associated with e-participation, and why we now make a plea for more socially

accountable approaches to develop and assess e-government service performance. It is time we broaden our boundaries and look underneath the surface of adoption of technologies and explore with a more critical eye what we mean by e-participation. Is it something that should be ‘aligned’ to public service delivery? What value do we (or should we) associate e-participation with? How is that we are to consider the social context in which e-participation is said to flourish? How will people (us) be able to produce alternative notions of e-participation, and use technologies to enable such notions to co-exist (or fight against) existing notions?

To help the reader in seeing how e-participation is being looked at with the help of systemic ideas, we now present what we see as an official (and so called revolutionary) perspective of this phenomenon. We take this as a point of departure for critical and systemically oriented thinking so as to consider the social context of e-participation.

## **THE VISIBLE FACE TO E-PARTICIPATION: ELECTRONIC GOVERNMENT (E-GOVERNMENT)**

As an initial and provocative element of the book, we now propose a perspective of the visible and widely used face of e-participation (electronic government) which seems to be the official one (to be) adopted by societies worldwide. It is a perspective that embeds revolutionary change. Interestingly, this perspective does not provide a unique definition of the term e-government. Bannister (2007) acknowledges this when he suggests that there is a spectrum of types of applications that are termed under the banner of e-government. West (2004) sees e-government as referring to the delivery of government information and services online through the internet and other digital means (p. 16). What we can discern from these definitions and the development of applications related to ‘government’ is that they involve the use of ICT

to deal with public (administration) matters and that require the concurrence of citizens at some stage, very often at the stage of ‘use’.

Interestingly, this perspective is one that sees a historical and linear progression in the interplay of technology and public service delivery and administration domains. The story behind it promises to deliver a number of benefits, one of which is to contribute to “build better relationships between the government and the public by making interaction with citizens smoother, easier, and more efficient” (Layne and Lee, 2001, p.123). It is a story with many manifestations worldwide and although it might be difficult to encapsulate it in a short ways, some stages can be identified.

The story begins when public administrations began using information technologies for their own administrative tasks. With the emergence of the web, the information to be offered to citizens in order for them to fulfill their part of the tasks was put into governmental websites. This is a stage called ‘information’, and it is still arguably the most popular and recognized by citizens in relation to their governments (Carter & Bélanger, 2005; West, 2004). It is included as part of the story to illustrate the nature of following changes as ‘revolutionary’.

In a similar vein to the spread use of information systems for competitive advantage in organizations, the next stage has become the proliferation of transactional facilities that government offices offer to citizens. Thus the stage is called ‘transaction’. Facilities include payment of taxes, renewal of licenses or acquisition of permits and certificates. E-government initiatives (and now the term appears too) focus on connecting an internal government system to online interfaces and allowing citizens to transact with government electronically (Layne & Lee, 2001:125). With automation, governments pride themselves in having achieved important cost reductions and efficiencies which the citizens (should) value as they also increase the transparency and accountability of government methods and processes.

The transactional proliferation leads then to the unification (or integration) of interfaces, platforms and technologies. Governments embark in the construction of sophisticated portals which although connecting legacy systems from different government institutions (via technologically remarkable platforms or architectures) offer one single type of environment (e.g. a single electronic interface) to citizens. The expectation is that with friendliness and efficiency, citizens will then become more prone to use online services. We see this stage in the form of national portal projects that take the form of one stop online shop for citizens (customers). A recent policy document of the European Union in relation to e-government describes this transition as:

*Using what is termed a ‘life-event’ approach, citizens will be able to access government services using a web portal to select their desired life event, such as ‘I want to get married’ or ‘I want to drive a car’, without having to worry about the services, organizations or processes involved underneath (European Commission, 2007). (p.6)*

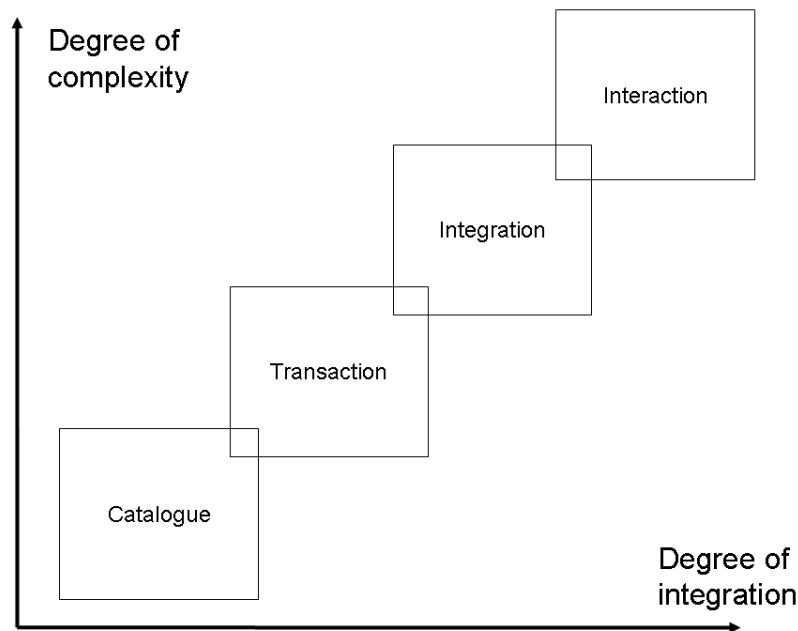
This is what is termed ‘citizen-centred’ electronic government. Its purpose is to include different citizen stages. This type of discourse assumes that citizens are to be served throughout their whole life. It also assumes that governments are to integrate horizontally their services, so that citizens can do many things in one-stop online shops (similar to what one could do in a banking branch: buying insurance, a mortgage, and retirement products to cover the whole of one’s life).

More often than not, horizontal or vertical<sup>1</sup> integration of services in portals seems ahead of the regulatory and appropriate environments for the sharing of electronic information (Contini, 2009), and lacks any explicit theoretical justification (Heeks & Bailur, 2007) . Despite these difficulties, the story continues progressing, now with consideration of issues of information privacy and confidentiality. Policy makers and adminis-



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Figure 1. Stages of e-government (adapted from Layne and Lee, 2001)



trations struggle to come to terms with possibilities and realities of information redundancy and ownership. Cases of lost of data have come to the fore, and the tensions between two different domains become evident: The technological and the governmental (Ciborra, 2001; Dunleavy et al., 2006). The initial success and possible integration of e-government into a technological infrastructure now generates constraints and potentially new problems for governments who want to innovate and get closer to their citizens. These problems are being seen as related to institutional factors, conflict between groups, culture and political behavior among others (West, 2004).

At this point the official story seems to acknowledge the need to consider the social context in which the visible face of e-participation is unfolding. Unfortunately, the focus is still on the progression towards transformation and managing the complexity due to arrival of new 'actors' (Dunleavy et al., 2006). Despite these minor 'social' hiccups, the official story suggests that there is a last stage to be fulfilled. It is the

stage of *online interaction* with citizens. In such a stage, it is assumed that governance systems are in place, meaning that government systems are transformed for the benefit of the public; information is securely shared; trust is gained and maintained across government departments at different level (locally, regionally, nationally and internationally). Any barrier of communication is overcome, and it could look like all a citizen has to do is click and type (or even speak) to interact with their governments and be listened to or fulfill their duties. Safe and secured democracy now takes place in an electronic type of setting, market or one-stop shopping portals. Moreover, existing systems (stemming from government websites, possibly with mobile, and virtual access to them) move beyond service delivery to 'system-wide political transformation' (West, 2004). In the case of websites, they offer options for 'personalisation' according to one's own interests so that one can receive relevant information. People can provide feedback and exert some degree of accountability through two-way communication. They can

engage in conversation and exert influence on government matters.

Technological design can make this type of engagement friendly so that confidence in government can increase. However the degree of influence of citizens in governing their own affairs via the government is an area which still is not discussed, partly because the challenges of institutional integration and transformation seem to be take most of the effort of those involved (policy makers, technology suppliers, government officers). Citizens and their needs take a secondary role in the process. This role is relevant for us though, because it could provide us with a space where systemic inquiry could reveal the becoming of a new form of society and of requesting political support and responsibility.

Within the official story, systems-thinking is starting to make an impact. Some of the existing 'institutions' (law, public administration) are seen as self-produce at the expense of others (Brans & Roszbach, 1997; Luhmann, 1996) at the expense of other systems (e.g. participatory systems). Outside the 'official' version of e-government, the use of systemic thinking could enable the identification of self-producing behavior for change. It can help us to see how we can as individuals provoke change and include several aspects of it. In this book we aim to show how the official and widely used story is only part of a whole phenomenon of participation in society, and how such a phenomenon has different manifestations in the social, economic, political and communitarian spheres of society. To be able to show this holistic nature of e-participation, we need to evaluate the impact it has had so far in societies and in different spheres, as well as how it is being impacted by them.

This story is allegedly biased towards what we consider a very linear (not systemic) way of thinking whose hiccups have to do with the context of people in which it is developed. The evaluation of the degree of success of e-government systems is limited to performance when not to the number of services being delivered online (Dunleavy et

al., 2006). The story also makes it homogeneous the deployment of systems under the discourse of transparency and accountability, something to which citizens are supposed to have been consulted. This 'exclusion' is reinforced at the policy level. In Europe for example, the priority of eEurope initiatives are to first bring 'everyone' into the digital age and online; this can then pave the way to literacy and social inclusion (European Commission, 2007).

Moreover, the story generates a low degree of uptake of e-government services. Benchmarking is used as a practice to ensure homogenisation and penetration of services 'online'. Benchmark shows that on the one hand, governments get better at what is to be measured. On the other, priorities efforts are determined by what is to be benchmarked, often leaving out consideration of aspects to be addressed if citizens are to be involved. As Bannister (2007) says:

*The result [of benchmarking] is that countries build clever and impressive looking systems that people rarely use (p.181) (brackets added).*

## **EMERGING ALTERNATIVES: E-GOVERNMENT ASSEMBLAGES AND CONTEXT RE- INTERPRETATIONS**

The official story on e-government thus begins to be reviewed. From a variety of perspectives, there is concern about how the challenges of integration between technologies, organizations and people are really dealt in practice. Contini (2009) shows how in reality some e-government systems are deployed with particular reference to the judicial realm. Using the concept of *assemblages* as collections of institutional and technological components which tend to maintain their specificity, he proposes a new 'model' for e-government systems. This model involves the following stages:

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- a. Identification of e-government services that can “reasonably be handled online”
- b. Identification of simple *procedures* embedded in such services which can be functionally simplified, and of sub procedures that can be easily translated into strict cause and effect, streamlined and inscribed into an electronic (online) system. For instance, when making a claim against the judicial system, the payment is part of the procedure of completing a claim and it can be selected for automation.
- c. Selection of appropriate gateways and interlocking mechanisms between online and offline procedures to support their smooth flow, even then these go beyond the limits of online proceedings or when it is appropriate to switch between online/offline. This includes for instance the use of existing payment facilities (credit and debit card) or the use of email systems to communicate with citizens and other stakeholders involved in a procedure.
- d. Identification of organizations involved in the innovation process (some third parties included, and organizations that need to regulate the ‘new’ process)
- e. Statutory changes to ease translation of procedures, so that in this case, online payment and electronic signatures are considered ‘legal’.

Contini (2009) also suggests two principles can apply when developing effectively an e-government system. The first one refers to focusing on a specific user group to whom the existing infrastructure adds value via simple adaptation. This signals that e-government is to start from some feasible possibilities and use some technology. The second one refers to avoiding getting ‘locked in’ by the installed technological base so that dependencies from third parties, their norms and ultimately their interests are to be avoided. These two principles acknowledge the importance

of what is in the context and what is feasible to accommodate given technologies and users.

Still, the focus on the interplay between concerned actors is limited to those being part of formal institutions. However, and between these two principles the role of a mediator gains importance. Such a role consists of (Contini, 2009):

*[facilitating] communication between the parties to assist them in focusing on the limited compatibility between the elements to be assembled and in unraveling the techno- juridical knots in a workable way and, as a consequence, to design and set up robust assemblages. (p.268)*

This speaks about the importance of being able to identify certain opportunities in the process of e-government transformation (Lyytinen & Newman, 2008; McLoughlin & Cornford, 2006), as to operate within constraints and possibilities that an e-government service can offer to users.

A perspective like Contini (2009)’s has similarities with those developed by Heeks and collaborators (Heeks, 2005; Heeks & Stanforth, 2007) to gradually manage implementation of e-government systems. Heeks (2005) identifies the existence of different (social) contexts: Design, implementation and use. In each, there is a variety of assumptions that influence the deployment of systems and which is necessary to identify, challenge and/or accommodate. Heeks et al suggest a piecemeal e-government development approach to indicate a more and context sensitive approach to its deployment. In such approach there is also involves consideration of people’s values and concerns. Such concerns might be embedded in sub-networks of relations which also act as ‘gates’ that facilitate the adoption or rejection of information systems (Introna, 1997). There could be a variety of such sub-networks being developed through time; some of these are excluded or marginalized within the process of e-government systems definition and implementation (see the chapter by Cordoba and Orr in this

book). It becomes essential to be able to identify and study the dynamics of such sub-network; in there we might find the seeds of new, innovative and more empowering forms of relations between individuals, some of which speak more truthfully about how they govern themselves and others than the official sub-networks of government in their social context.

The emerging nature of these and other approaches suggests that now people are to be at the front of e-government development, not necessarily at the front of its official manifestations. If consideration of the social context is taken into account, then the focus on e-participation systems (not only e-government ones) deployment is shifted. Within such a context (and now with citizens fully included) there are a number of possibilities. We can improve the uptake of e-services (those to be deployed) but we can also question their nature and their implications for the relationships between individuals.

Moreover and using the ideas about the information society, we can then look beyond institutions and consider a more holistic type of development and evaluation of e-government. Complexity is not there to be tamed but to be operated within. Systemic thinking can reinforce the possibility of mediation in different types of contexts. It can also help us to critically review the notions that have been associated with e-participation and the context where it is supposed to take place (citizenship). We now conclude with some remarks about the role(s) that we attribute to systemic thinking in dealing with e-participation and the uses of information and communication technologies in societies worldwide.

## **CONCLUSION: THE ROLE OF SYSTEMS THINKING**

Systems-thinking has been regarded at the same time as a discipline and as an operational arm of other disciplines that aim to pursue societal

improvements. Confusions might still exist as to what is its true nature and purpose and as we see it, this is part of the continuous dialogue within and beyond the systems community. To us, systems thinking is an ally that will help us clarify existing conceptualizations about e-participation and e-government, and will also help us appreciate different ways of making these two phenomena more 'citizen' friendly. By focusing on exploring these phenomena we also hope to inform discussions in systems thinking.

Moreover, adopting a systemic view will also enable us to include other perspectives and to enrich our current understanding of the phenomenon of e-government beyond the assumed limits of being a technological provision for running public affairs. We expect that such insights could reach to all of us interested from whatever perspective on the subject, and for the reader, to appreciate their history, similarities and differences with what s/he could be experiencing now as a citizen, technology practitioner, government officer or member of a community.

In this chapter we have started a disclosure and openness of the social scene in which e-government takes place as a technological answer but also as a social challenge. In following a path of a systemic inquiry it should become paramount that what has been a dominant (official, widely used) perspective of e-government requires to be understood and surpassed by a will for gaining comprehension on the issue beyond the dimension of the citizen as a user or customer. In such a strive lies the challenge of considering the effort contained in this book as a step towards a critical systemic account of e-government, e-participation and the configuration of a new social context in which we are already living without realizing the advantages and disadvantages that are self-contained in such a process. Therefore, it is not possible to arrive at a better conclusion now, except to indicate that the challenge to inquiry even further and more critically about the phenomenon although has been accepted here is far from being completely solved.

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## ENDNOTE

- <sup>1</sup> Layden and Lee (2001) distinguish two stages within the stage of transaction in e-government. They argue that vertical integration takes place when a service delivery requires the concurrence of different government institutions. Once this is automated, horizontal integration of services takes place to cover the whole ‘citizen life cycle’ services under a single interface or transaction.