Chapter 1
E-Government 2.0: Back to Reality, a 2.0 Application to Vet

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Abstract E-government 2.0 refers to the inclusions of features like social web, user-generated content, the delivery and use of open data, and network effects through more user engagement. Integrating Web 2.0 technologies into e-government is expected to create opportunities to improve online public services quality, change the relationship with citizens and businesses. The integration of web 2.0 in e-government can contribute to achieve new e-government strategic objectives and policies. Yet it provides many practical and theoretical challenges as research is limited in this field. The accomplishment of the benefits and strategic contribution might be more difficult than initially anticipated.

This chapter goes back to the origins of e-government 2.0 concept and compares to initial e-government concept with regard to characteristics, related issues and research questions. Then, this chapter provides an overview of the book content—a comprehensive collection of research works concerning e-government 2.0 implementations by showing cases and business models enabled by various technologies and developed in different countries across America, Europe, Africa and Asia. E-government 2.0 is approached from the view of theory and practice interaction in this book. Contributions are based on concrete practical studies or suggested new solutions to guide e-government 2.0 initiatives grounded on the reality of the context. Many examples are available and the goal is to learn from the examples rather than on the buzz of the term and sometimes the "theoretical" speculation with plenty unproven assumptions and promises (e.g. Gartner hype curve, IT magazines, even some research papers and reports, etc). Government 2.0 is out there and much can be learned from the existing experiences. In sum, the content of the book attempts to lift the veil on challenges facing e-government 2.0 wide-spread adoption

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and to contribute to e-government literature towards a theoretical and strategic framework for guiding new 2.0 initiatives.

1.1 From E-Government to E-Government 2.0

Electronic government (e-government in short) was introduced in the mid/late 1990s. E-Government is often associated with policy choices and refers to the use of information and communication technologies (ICT) to optimize the internal and external functioning of public sector organizations. E-government implementation efforts started often with basic information provisioning and evolved towards more integrated and joined up service offerings. One of the key issues in e-government is service improvement. In many countries, the public services offered are highly bureaucratic and siloed where the citizens have no choice of service provider, whereas e-government enables the creation of integrated service delivery (Assar and Boughzala 2007; Assar et al. 2010; Weerakkody et al. 2009).

Literature related to ICT and government goes back to the 1970 (Grönlund and Horan 2005) even if the first use of ICT in the public sector goes back to the 1954 during the US presidential campaign. The origin of the term e-government is correlated with the rise of e-commerce and e-business. Indeed, the first sense of e-government covers the adoption of different e-business applications in the public services sphere—such as online transactions, CRM, electronic market places, e-auction, e-procurement and intranets/extranets (Grönlund and Horan 2005).

All around the world, significant efforts and progress are made in online public service delivery. According to the UN e-Government Survey 2012 (UN 2012), many countries are continuously putting in place e-government initiatives and ICT applications for their citizens and companies to streamline governance systems and further enhance public sector efficiencies. Indeed, citizens and businesses are benefiting from better access to information and improved interactions with governments. Furthermore, governments and public organizations have undergone considerable transformations through ICT (as a strong enabler for change) or because the rapid ICT development pressure and the context-awareness of Internet users. E-government initiatives were often accompanied by structural and process reorganizations and public agencies reform (Torres et al. 2005; Jansen and Løvdal 2009). This is often denoted as *transformational phase of e-government*. This phase involves reengineering and e-enabling back office processes and information systems to enable more joined-up and citizen-centric e-government services. This phase focuses upon cost savings and service improvement through back-office process and IS/IT change (Weerakkody and Dhillon 2008). This requires change of institution structures and various social, organizational and technological challenges at both governmental and individual citizen level (Gascó 2003). It is the transformation of government to provide efficient, convenient and transparent services to the citizens and businesses through ICT (Satyanarayana 2006). By the time, governmental organizations and decision-makers have understood that e-Government is not about (Satyanarayana 2006):

1. ‘e’ (electronic) but about government!
2. computers and websites but about citizens and businesses!
3. translating processes but about transforming processes!

In this sense, Janssen and Estevez (2013, p. 2) explain that “in the early days e-Government was primarily focused on creating citizen-centric service provisioning and on government itself, without looking beyond the boundaries of the public sector. E-Government was often discussed from the technological perspective and often with no clear connections to the public sector core values and objectives. Over the years e-Government policies and research have adopted a less techno-centric approach and the focus shifted to viewing citizens in their customer role and to creating customer-driven services.” Furthermore, slowly e-government has become more social-based and open, giving rise to the next e-government generation, called e-government 2.0, with the emergence of Web 2.0 and the rise of social networks.

This has opened up new perspectives that challenge the traditional relationship between public organizations and citizen and business. The role of citizen has been considered more central in the e-government framework. Businesses and citizens are no longer considered as an information consumer or service user but also as an information generator and service contributor. DiMaio (2009, p. 2) cites the e-government 2.0 Gartner definitions: “The use of information technology to socialize and commoditize government services, processes and data.” Business and citizens becomes actively engage and their role of service consumers and participation become integrated.

1.2 Web 2.0 as a New Opportunity for E-Government

Web 2.0 (O’Reilly 2005) is one major change that is being transforming work practices and more widely the organization at whole. Web 2.0 refers to characteristics like the delivery of software over the internet, the generation of content by users, consuming and remixing data from multiple sources and network effects gained through more participating users (O’Reilly 2007). In fact, new usages for information and knowledge sharing have emerged with the advent of Web 2.0 applications, giving rise to the Enterprise 2.0 concept (Anderson 2007). Enterprise 2.0—a new culture of technology usage—refers to “the use of Web 2.0, emergent social software platforms within companies, or between companies and their partners or customers” as defined initially by McAfee (2006). Web 2.0 is a combination of applications (Blog, Wiki, Podcast, RSS feeds, Tagging, Social networks, etc); new values related to the use of these applications (user as producer, collective intelligence, perpetual beta, extreme ease of use) and standardized technology behind these applications (Ajax, XML, Open API, Microformats, Flash/Flex) (O’Reilly 2005; Anderson 2007).

Web 2.0 applications, also called social media, are viewed as more intuitive, user-friendly, user- (social) centered, flexible and less formal than traditional information systems (Kaplan and Haenlein 2010). Kaplan and Haenlein (2010) have classified social media into six categories including:

1. collaborative projects (e.g. Wikipedia),
2. blogs and microblogs (e.g. Twitter),
3. content communities (e.g. Youtube),
4. social networking sites/systems (SNSs) (e.g. Facebook),
5. virtual game worlds (e.g. World of Warecraft) and
6. virtual social worlds (e.g. Second Life).

Used initially in the private arena, they are increasingly disseminated within professional spheres, regardless of organization type or field of activities (Boughzala 2010, 2011). They are participatory and personalized with a dynamic content, and are generated by users themselves. The generation of content attracts other users, who in turn generate content themselves. In this way the necessarily critical mass can be created to make such a social network happen, as a key condition is the creation of enough volume and transactions to create recurring users. Web 2.0 technologies are very useful for self-expression and mass participation, social networking, knowledge capitalization and co-creation, and skills and talents identification. They are a good opportunity for companies to improve best practices' sharing, and to encourage open collaboration/innovation (Chesbrough and Appleyard 2007), crowdsourcing and co-creation (Howe 2008).

Governments were not immune to these evolutions and awareness has grown among public agencies that Web 2.0 can further enhance public services and create new opportunities for change and innovation. Used the first time to name the Gov 2.0 Summit, held in Washington, DC on September 2009, the term e-government 2.0 points to the specific applications of social networks and Web 2.0 in the sphere of public services (Baumgarten and Chui 2009). The Australian Government 2.0 Taskforce (2010) defines it as the use of the new collaborative tools and approaches of Web 2.0 offers an unprecedented opportunity to achieve more open, accountable, responsive and efficient government. Many benefits were expected, such as a better match between public services and citizens' expectations, greater adoption of online services by citizens, or better control of costs and prevention of delays in the implementation of new services.

Beyond the effectiveness of information dissemination as a primary value in the first web generation, current e-government in the era of Web 2.0 could offer new opportunities for improving the involvement and participation of citizens and businesses (Nam and Sayogo 2011). This is an unprecedented opportunity for citizens to participate in discussions, develop applications and combine data from multiple sources (Osimo et al. 2009).

In addition more and more data is opened by the government to enable others to make use of it. Open data is even named the new gold (Kroes 2011; Scholl and Luna-Reyes 2011). The opening of data can crease many other advantages such as tapping into the intelligence of the crowd, improved policy making, accountability and transparency (Janssen et al. 2012). Open government data can easily be mashed up with data from other sources (companies, universities and other public bodies). In this way new innovate applications can be developed. It is also a tremendous opportunity for the government to involve the users in the development, evaluation and development of public services. There are many hackatons in which

the public developed apps based on government data. This enables new user-centric application in which information can be viewed at a glance (data visualization). A whole range of new business models are emerging adding value by making use of open data and combining these with social engagement (Janssen and Zuiderwijk forthcoming).

Indeed, several public agencies have focused on the Web 2.0 potential and the altruism of individuals to catch new opportunities of value creation (Osimo 2008). Thanks to Web 2.0, they collect ideas and opinions of a large population of citizens or businesses, sometimes even inviting them to provide services solutions (i.e. to profit from collective intelligence via Crowdsourcing platforms).

On this point, the example of the District of Columbia (Washington, USA), is quite significant in terms of e-government 2.0. Since 2009, an applications contest called *Apps For Democracy* (cited in Baumgarten and Chui 2009) makes it possible for independent developers, geeks, public and private research centers to compete in order to create innovative online services that solve practical problems expressed by citizens through a social network. The purpose may be for example to identify the different cycling routes in the district, or to check the availability of a book in a public library. Public agencies within the District of Columbia provided developers with public data in order for them to build their applications. This ability to make high-value public data available to the public encourages participation and collaboration.

1.3 E-Government 2.0 Characteristics

The move from e-government to e-government 2.0 is a phenomena clearly recognized by e-government stakeholders and the research community alike. It was announced in 2007 in the eGovRTD 2020 e-government road mapping research project (Wimmer et al. 2008). This exploratory project identified and characterized key research challenges and possible implementation models for holistic and dynamic governments in Europe in 2020 and beyond. Among the 13 interrelated research themes, the theme "E-participation, citizen engagement and democratic process" is clearly pointing to e-government 2.0 emergence. Moreover, European Community benchmark's five-stage maturity model (EUC 2009) suggests that targetization, i.e. personalized services, is the last step in e-government development and participation will be in this case the sixth next step (see Fig. 1.1).

At last, among e-government scholars, e-government 2.0 and e-participation became rapidly a subject of study such as (Chun et al. 2010; Dixon 2010; Hui and Hayllar 2010; Traunmüller et al. 2010; Nam 2011; Chun and Luna-Reyes 2012; Meijer et al. 2012; Susha and Grönlund 2012).

Main characteristics of e-government 2.0 characteristics can be summarized as follows:

- *Community-driven*: with social interactions among citizens, the government and citizens interact as equals. They are cooperating and co-creation in networks in which all parties contribute.

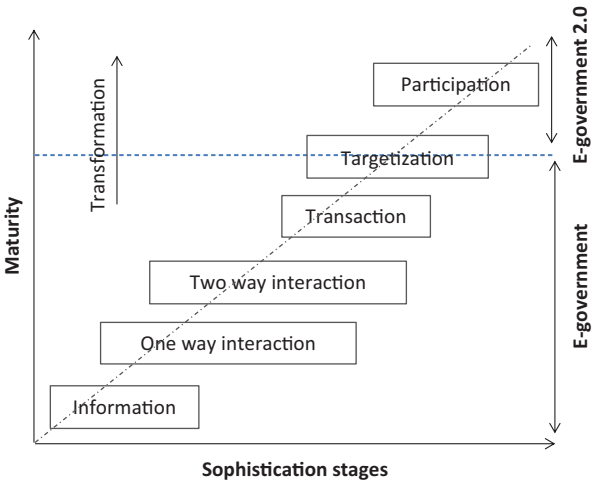

Fig. 1.1 E-government evolution framework toward e-government 2.0. (Adapted from EUC (2009))

- *User-generated content and development*. Users generate data in social networks or make use of open data by developing apps. Not the government, but business and citizens outside the government become involved in crowdsourcing, provide suggestions for improvement add ideas, develop new applications, which can ultimately result in new type of business models.
- *Openness* is a basic building block in e-government 2.0. Public sector data is opened to the public and can be used to give insight into the government operations, policy-effect, but can also used for private-sector innovation if the opening of data creates transparency, it also generates new business.
- *Collaboration*: both citizens and government generate content, interact with each other. The government becomes a platform-based. We speak about Government as a platform (GaaP) in order to enable the development of communities for sharing, collaboration, co-creation and innovation.

The following table highlights several other characteristics of e-government 2.0 compared to e-government (Table 1.1).

1.4 E-Government 2.0 Issues

If the e-government 2.0 brings a lot of opportunities for government, citizens and business, it introduces several issues and risks, mainly:

- **Security and hacking**: due to the introduction of web 2.0 technologies, the government exposes itself more to a lot of security/hacking issues such as identity theft, fraud, forgery, data leakage, insider trading, etc.
- **Labor effort**: fostering exchange and participation among and with citizens, the government may be limited by the resources to be able to respond to all requests and avoid the work overload.

Table 1.1 Dominating aspects of both of the streams. (Adapted from Janssen and Estevez (2013, p. 5))

Characteristics	E-government	E-government 2.0
Main drivers	Online public services, process digitization, transactions, citizen-centric	Online communities, social networks and citizens relationships, open data
Orientation	State, user connection, financial transactions, technology-oriented	Community of citizens, user engagement, social transactions, data valorization, collective intelligence-oriented
Values and priorities	Efficiency, Service quality, state reform and control	Service provision, openness, transparency, participation and accountability
Dominating mechanisms	ICT-driven service innovation, transformation of government structures	Changing government and citizens/business relationships, user-driven open innovation
Scope	Front-end—creating online services	Public-private networks Cross collaboration, network, managing and orchestrating the network of citizens, businesses, NGOs and government agencies
Change approach	Change within the inside government, front-end driven, online services are built based on existing processes	Outside-in driven, online services are built based on crowdsourcing processes. Opening of government
Initiatives are driven by	Bottom-up approaches which are aimed at creating ICT-based applications (champions)	Inside-out open data and outside-in innovation (ICT-based service integration (created by citizens and businesses)
Examples of services	Knowledge management, Online tax returns, applying for services and grants, e-auction, call for tenders, e-procurement, etc	Cross-agency collaboration, Open data, data visualization, public debates, citizen inquiry, participatory democracy services, tourism consultation, patents deposit and reuse, etc

- **Network operating**: Governments and citizens/business cooperate in loosely coupled networks. These networks need to be managed and orchestrated. Changes might be outside the government boundaries and need to be monitored.
- **Sustaining a community**: building and sustaining a community means that citizens/business should have an interest in participating. This needs to be reinforced.
- **Loss of control**: too much transparent may lead the government to lose control over the mastery of its information systems and legitimacy in its relationship with citizens.
- **New system and processes**: E-government 2.0 requires the development of system operating within a larger organizational network and new processes for facilitating government 2.0.
- **Institutional change**: the focus on outside the government needs likely organizational and institutional changes.

- **Intellectual rights**: collective intelligence often raises the problem of intellectual property which is difficult to prove within a mass of efforts.
- **Personal data and privacy**: Web 2.0 has always raised the lack of protection of private data. The risk with e-government 2.0 is even more since it deals with the personal identity and identification.

1.5 E-Government 2.0 Global Research Questions

E-government is a multidisciplinary field of research in which focus on practice and on practical recommendations is a prominent characteristic (Yildiz 2007; Assar et al. 2011). Efforts to theoretically found the field have opened perspectives from multiple research domains. Although theoretical ground is still under construction, it certainly qualifies as a legitimate emerging scientific discipline. As technological innovations are continuously hitting the market, the frontiers of the e-government discipline are moving and its multidisciplinary nature confirmed (Scholl 2007). The emergence of web 2.0 as an essential dimension in internet usage, e-government is shifting towards e-government 2.0. Huge opportunities are becoming available for extending e-participation, for accelerating online public service implementation, evaluation and adoption, and ultimately for introducing in the public sphere, open innovation and collaborative knowledge creation and diffusion (Baumgarten and Chui 2009).

Assar and Boughzala (2013) have carried out an exploratory field study to determine e-government evolution priorities from a Web 2.0 perspective and introduced the following e-government 2.0 challenges and research issues:

- Infrastructure and process interoperability
- End-user adoption and trust
- Anonymous access provision
- Format interoperability
- Business models
- Quality issues
- Juridical implementation issues
- Infrastructure and process interoperability
- Linking citizen identification with data authentication issues
- Organizational transformation
- Elicitation of best practices
- Citizen centered design
- Elicitation of best practices in web site design

1.6 Presentation of the Book

The material presented in this book is a collective contribution to the e-government domain. Contributors come from ten different countries and are either practitioners in e-government or researchers whom have been directly or indirectly implicated

in e-government projects. Each chapter is a specific field study in which different investigation methods have been applied and combined according to the case study methodological approach (Yin 2003). The primary audience of this book is scholars and practitioners in the area of e-government. It is also of interest to MSc level students in curriculums related to ICT in public administration, new public management, information systems and e-business, and who seek practical cases in online services design, implementation and evaluation.

Chapter 2, entitled "Social Media-based Government Explained" by G. F. Khan, presents a web survey of 200 government websites from 40 countries and 45 Web 2.0 initiatives across the globe to present and illustrate fundamental concept of the social media-based government: utilization model, implementation scenarios, and the relationships that it can hold with the citizens.

Chapter 3 on adoption and use of Web 2.0 technologies by local governments, entitled "Moving toward Web 2.0-enhanced e-government in small-town Pennsylvania" by A. Levy, E. Trauth and J. W. Bagby, investigate the nature and extent of collaborative initiatives between public and academic institutions in small college towns in support of e-government innovation. The study identified four major purposes of social media integration, including emergency notification, citizen participation, public safety, and promotion of the official municipal website.

Chapter 4, entitled "Government 2.0: A Change Towards Citizen Participation in Arab Countries" by N. Azab, E. Farzali, O. Zaher and H. Sayed, discusses the role of Web 2.0 technology in enhancing e-participation by providing a convenient communication channel between governments and citizens. In particular, they investigate e-participation of Arab countries -considered in their early path towards democracy, and whether their use of this technology would ensure a gradual transformation to democratic communities.

Chapter 5, entitled "Citizen-Driven Design: can global collaboration leverage local e-government solutions?", by A. Ekelin and S. Eriksén, presents how citizen-driven design of e-government can be promoted through trans-local cooperation. The case study consists of the Augment project which focuses on the design of a mobile service for co-creation of local accessibility, and based on the Scandinavian tradition of Participatory design in R&D cooperation with India.

Chapter 6, entitled "In the quest of opened-up governmental policies in Greece: challenges and recommendations" by E. Karamagioli and D. Gouskos, describes the key elements of the innovative effort of the Greek public administration over the last 5 years to enable the transition to a new public administration model via opened-up governmental policies, so as to improve public services provision, increase public integrity and ensure a more effective management of public resources After showcasing the most representative tools developed so far, the authors discuss their level of maturity and their potential in light of open data policy requirements.

Chapter 7, entitled "Towards the Understanding of Success in E-Participatory Budgeting Projects", by Styliani Zafeiropoulou, S. Carlsson and A. Andersson, investigates which are the success factors (SFs) for implementing e-Participatory Budgeting (e-PB) projects? And, if are they actually used in practice. e-PB includes the use of ICTs in democratic decision-making processes regarding the spending for a defined public budget where ICTs are used in order to enable more citizens

to participate? Findings show not only that the eleven SFs mentioned in previous research are met in practice in most cases, but also that additional factors arise in practice related to: size of budget, size and spectrum of target group participants, design of proposals, theme area of the budget, and civil society's involvement.

Chapter 8, entitled "Brazil Towards Government 2.0: Strategies for Adopting Open Government Data in National and Subnational Governments" by R. Matheus, M. Maia Ribeiro and J. Carlos Vaz, presents the state of art of Open Government Data (OGD) in Brazilian National, State and Municipal governments, by describing benefits that OGD have been promoted on governments and society such as transparency promotion, social control and citizen participation. In addition, strategies used by governments are outlined aimed at boosting usage and the creation of chain value of OGD usage.

Chapter 9, entitled "Twitter and 2013 Pakistan General Election: the case of David 2.0 against Goliaths" by S. Ahmed and M. Skoric, focuses on the Twitter campaigns of Pakistan's political parties with the aim to investigate how the medium was used by political parties for information dissemination, interaction, mobilization and engagement of voters. Findings identify that every party used Twitter for different purposes. Pakistan Tehreek-i-Insaf (PTI)— unexpected winner party have used Twitter in the most diverse by interacting with voters, provided real time detailed campaign updates, discussing specific social and political issues and calling for a greater mobilization of citizens to vote.

Chapter 10, entitled "The Decalogue of Policy Making 2.0: results from analysis of case studies on the impact of ICT for governance and policy modeling", by S. Koussouris, F. Lampathaki, G. Misuraca, P. Kokkinakos, D. Askounis, presents the results of the analysis of a set of promising cases researched in order to understand the possible impact of what called 'Policy Making 2.0', which refers to 'a set of methodologies and technological solutions aimed at enabling better, timely and participative policy-making'. Based on the analysis of these cases authors suggest a bouquet of (mostly ICT-related) practical and research recommendations that are relevant to researchers, practitioners and policy-makers in order to guide the introduction and implementation of policy-making 2.0 initiatives. They argue that this 'decalogue' of Policy Making 2.0 could be an operational checklist for future research and policy to further explore the potential of ICT tools for governance and policy modeling, so to make next generation policy-making more 'intelligent' and hopefully able to solve or anticipate the societal challenges we are (and will be) confronted today and in the future.

Chapter 11 is on open data strategies to increase transparency and enable re-use of their data. This chapter, entitled "A Community-Driven Open Data Lifecycle Model Based on Literature and Practice" by A.F.E. van Veenstra and T. van Den Broek, develops an open data lifecycle model based on literature and practice. Using existing open data lifecycle models this paper identifies generic phases of opening up data. Then, investigating the process of opening up data in a semi-public organization in the Netherlands, the lifecycle model was refined. While existing open data lifecycle models focus mainly on technical aspects of opening up data to ensure publication, this case study shows that involving stakeholders within the

Table 1.2 Mapping among chapter content (columns), investigation methods, and research themes (lines)

	Chapter n	02	03	04	05	06	07	08	09	10	11	12
Investigation method	*Literature review*							■				
	Quantitative (surveys)	■										
	Qualitative (interviews)		■									
	Content analysis								■			
	Action Research				■							
	Case study		■				■			■	■	
	Secondary data, Websites and/or official reports					■		■				
	Frameworks and conceptual models	■									■	■
	Social network analysis								■			
	Design science approach											■

organization as well as building an engaged community of stakeholders outside the organization—also in an early stage, is crucial to the success of open data.

Chapter 12 and last one, entitled "Social Web Ontology for Public Services", M. Krijgsman, W. Hofman and G-J. Houben, proposes an open peer-to-peer social network architecture, based on data ownership by each individual and a Social Web Ontology for interoperability between the peers. Security mechanisms are an important feature of such a network. By extending the Social Web Ontology with concepts and properties for e-Government services and applying open data principles, the architecture can also be used by authorities. The proposed architecture includes an advertising revenue model that can be offered by intermediaries storing user owned data. All will prosper by sharing as much data as they are willing, thus interoperability amongst providers is required. An architecture in which a citizen not only can own its data, maintain its social network and sells its data to advertisers, but also provides data to authorities to apply for particular government services, addresses both data privacy challenges and e-Government services. Authorities can play an important role by stimulating the implementation of a Social Web Ontology, initiate the development of data privacy monitoring modules warning users of potential privacy issues when selling data, and base public services on the Social Web Ontology. It will also allow users to present themselves differently in different context based on access control settings, e.g. private, professional, and citizen.

Table 1.2 presents a mapping between the chapters of the book and the investigation methods used.

1.7 Conclusion and Future Outlook

The chapter, as an editorial introduction to the book, describes the e-government 2.0 concept and summarizes the content of the book with a comprehensive, multi-dimensional approach to research and practice in e-government 2.0 implementation.

Contributions from an international panel of experts apply a variety of methodological approaches and illustrative case studies to present state-of-the-art analysis and perspectives.

This chapter shows that governments around the world are building frameworks and proposals for e-government 2.0. This ongoing transition towards e-Government 2.0 will not only improve participation, transparency and integration but it is also expected to speed up the space of innovation through collaboration and consultation. Ultimately, this also would result in the development of new e-government business models.

This volume addresses a gap related to the need of a theoretical and strategy framework for e-government 2.0 in the research literature, but offering timely insights on the e-government 2.0 on the ground reality. Directions for future research and policy could include many prospects such as:

- Integrating social web and semantic web to give rise to the next transformation of e-government, the e-government 3.0 and beyond.
- The assessment of transparency in practice. Transparency is more difficult that initially expected.
- The sharing of platforms. Governments should not act in isolation, but share platforms and other ICT-services. This is thanks to new opportunities related to the Cloud and Grid Computing.
- The internet of things and the huge amount of data to collect and to analysis. This will bring us to the public data governance in the stream of big data.
- Transformations necessary to profit fully from e-government 2.0. Institutional and organizational changes within the government might be necessary.

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Finally, we hope with these contributions to show both that e-government 2.0 is a big concern, and that interaction between researchers and practitioners is fertile and needed. This is because it is true, in this field, that real problems of research are born out of real problems in the real world.

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