

The futures of EU-based eGovernment: a scenario-based exploration

Patrick van der Duin
 School of Technology, Policy and
 Management
 Delft University of Technology
 p.a.vanderduin@tudelft.nl

Noor Huijboom
 TNO Information and Communication
 Technology
 noor.huijboom@tno.nl

Abstract

The future of eGovernment is very uncertain and requires to be approached by depicting different scenario in which a wide range of contextual factors, such as social, cultural, institutional and economic should be described. The scenarios in this paper are focused on 2020 and situated along two scenario-axes which form the framework in which the scenario-stories have been placed: 1) cultural diversity and 2) citizen involvement. The scenario-axes point to the extremes of a (possible) future trend or development. These two scenario-axes are chosen by experts, who have weighed and assessed both uncertainty and expected impact for eGovernment of several factors. When combining the extreme manifestations of the two chosen factors (cultural homogeneity versus cultural heterogeneity and low versus high involvement of citizens) four explorations of government models in 2020 emerge: ‘Our Europe’, ‘We the Market’, ‘My Community’ and ‘Me, myself and I’.¹

¹ This paper is based on the research study “ICT - driven models of eGovernment for the EU in 2020” carried out by TNO, TU Delft and DTI in 2006 and commissioned by the Institute for Prospective Technological Studies (IPTS). The study aimed to analyse the potential of disruptive technology trends in providing challenges and opportunities for new models of eGovernment, public governance, public administration and democracy

1. Introduction

The future is uncertain. This especially applies to the topic of eGovernment which future course will be determined by an unpredictable mix of societal factors. To decide how to approach to the future and (subsequently) which method of futures research to adopt, we assess the uncertainty of developments surrounding eGovernment. We state that developments in eGovernment are as dynamic and as uncertain as developments with regard to its main technological constituents: telecommunication (mobile and fixed), information and communication technology (ICT) and content and (new) media. In terms of an adequate methodology for assessing the future, Table 1 lists different common foresight methodologies for different types of futures.

Table 1: Foresight methodologies²

A clear enough future	<input type="checkbox"/> Trend analysis <input type="checkbox"/> Quantitative forecasting <input type="checkbox"/> Judgmental forecasting
Alternate futures	<input type="checkbox"/> Scenarios <input type="checkbox"/> Back casting <input type="checkbox"/> Early Warning System
A range of futures	<input type="checkbox"/> Scenarios <input type="checkbox"/> Early Warning System <input type="checkbox"/> Back casting
True ambiguity	<input type="checkbox"/> Event analysis

² Trend-analysis is analyzing (qualitatively) changes in societal developments; quantitative forecasting is based on quantitative models (e.g. causal models); judgmental forecasting is based on the opinions of experts; back casting is setting a point in future time and assessing what to do to get there; an early warning system is checking at regular intervals what kind of future where are heading for; and event-analysis assesses the possible consequences of possible future events (i.e., singular occurrences).

The uncertainty level of developments with regard to eGovernment is somewhere between ‘a clear enough future’ and ‘true ambiguity’. Both the time horizon of our study (i.e., 2020) and the interrelationships of developments affecting eGovernment make the future of eGovernment too uncertain to consider it clear enough. However, eGovernment developments are not that uncertain and chaotic that we can speak of ‘true ambiguity’ with regard to the future. A situation with (possible) ‘alternate futures’ and ‘a range of futures’ seems to be most applicable to eGovernment. The scenario-method, therefore, in this case seems to be a good choice. This method is not an uncommon method in other eGovernment research (e.g., [1, 2, 3,4]).³

The scenario method is a widely used futures research method and there are different types of scenarios and different ways of building them (e.g. [5, 6, 7]). For instance, scenarios can be used to explore the future (explorative scenarios) or to picture the possible consequences of a specific policy (policy-scenarios). Also, scenarios can deal with the future of a specific industry or of a nation. Scenarios can be based on complex mathematical models (thereby resembling sensitivity-analysis) or based on the opinions and input of experts and laity (as Shell often does). In this paper we mainly use the input of experts to build explorative scenarios in which possible futures of eGovernment are depicted. In this the main step is determining what the impact and uncertainty is of the collected trends [8]. By doing this we get four scenarios, defined by four quadrants resulting from two axes, which correspond to the most uncertain and high-impact trends or variables relevant to the (business) issues at hand. Given the relatively distant time horizon (2020), the scenarios are meant to project beyond certain trends. By this we mean that up to 2020 certain trends (and perhaps society) might be classified as (almost) certain but after 2020 these trends lose their certainty and scenarios come into play [10]. Since the scenarios inform policy making regarding eGovernment, they should provide a platform or background against which new policy initiatives can be discussed and initiated.

2. Scenarios: scope and trends

The time horizon is the year 2020. The

³ The other two methods of futures research mentioned here, ‘back casting’ and ‘early warning system’ can also be used in these ‘uncertainty’ situations’. However, the application of these methods does not lead to possible future visions.

scenarios need to describe the consequences of promising ICT-developments for new eGovernment services and new eGovernment models in the wider context of relevant *social, economic, institutional and organisational changes*. Therefore, the first step to take is to make an analysis of these contextual changes. Based on desk research the most important trends and developments within the social, economic, institutional and organizational domain have been identified.⁴ Cultural, demographical and ecological trends are not considered separately but their impact on the aforementioned domains is considered where required. A distinction is needed between relatively certain and uncertain trends. The latter are particularly important in designing the axes for the scenario exercise. In this study the following trends are considered relatively certain: ageing, immigration, urbanization, global warming, and rising energy demands.

Based on desk research a large number of uncertain trends have been identified from other studies on the future of eGovernment (some of which were scenario-studies). The list below is a selection:

1. “the individualisation trend (self-reliance and personal independence) will continue“
2. “the EU member countries will experience a technological growth as expressed in a rise of investments in R&D and technology”
3. “the political engagement of citizens will increase”
4. “a homogeneous European culture will emerge”
5. “the trust of citizens of EU member countries in technology will increase”
6. “the technological standardisation of interfaces of eGovernment applications will increase”
7. “the trend towards decentralisation of governmental tasks will increase”
8. “pressures on public budgets will diminish”

For the determination of the scenario-axes the selection of trends with a high uncertainty and a large impact on eGovernment is crucial. Sixty experts⁵ participated in a survey to select the trends with the highest uncertainty and largest impact on eGovernment.

⁴ These domains are based on Kotler [9] who distinguished these domains (and others) in order to describe the environment of an organisation (company). These domains together also form the scenarios stories (see section 4), also

⁵ The list of experts can be provided by the authors at request. These experts were mainly located at universities and research institutes.

3. Constructing the scenarios

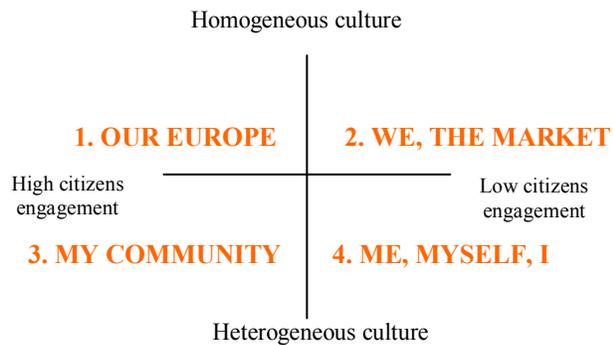
The scenarios are situated along two scenario-axes. These scenario-axes form the framework in which the scenarios have been placed. The scenario-axes point to the extremes of a (possible) future trend. The selection of axes is based on the classification and weighing of 16 trends by experts as presented in the foregoing section. The result is a top 5 of trends with the highest level of uncertainty and the highest level of impact:

1. "a homogeneous European culture will emerge"
2. "the political engagement of citizens will increase"
3. "the trust of citizens in government will increase"
4. "citizens will increasingly accept that governments collect/use personal data for carrying out their tasks"
5. "pressures on public budgets will diminish"

Consequently we have chosen 'citizens engagement' and 'cultural homogeneity' as the key dimensions to vary our scenarios on. The 'citizens engagement'-dimension corresponds with the second trend "the political engagement of citizens will increase." It also links with "the trust of citizens in government will increase". In our view, lower trust leads to lower political involvement and vice versa. The cultural dimension corresponds with the first dimension "a homogeneous European culture will emerge", but there is also a link with the last two dimensions. If "citizens will increasingly accept that governments collect/use personal data for carrying out their tasks", citizens increasingly share more of the same values on this topic, suggesting a more homogenous culture on this aspect. By taking the extremes of both dimensions two scenarios can be constructed. The two scenario-axes, therefore, are:

- **High vs. low level of citizens engagement:** this is the extent to which citizens (and companies) are involved in political (democratic) and societal processes.
- **Homogenous culture vs. heterogeneous culture:** this is the extent to which citizens of Europe agree on the role and future of Europe and the extent to which they share norms and values.

These two axes delineate four areas representing four scenarios:



To validate the scenarios, experts were invited to engage in the creation of the scenarios in a two stage process. In the first round they were invited to comment on the generic descriptions of the contextual factors in each scenario. In the second, 'fine-tuning' stage we asked them to further reflect on the scenarios by commenting on which governmental transformations will be driven by which ICTs. So, the construction of the scenarios was not done by the project-group itself but input from experts outside the group was consulted and used as well.

However, before we describe the scenarios a few words on the 'culture'-scenario-axis. Although the drivers *homogenisation* and *civic engagement* are considered independent for the purpose of this study it can be argued that ICT enabled mobilisation of civil engagement *in itself* can drive societies towards greater cultural homogenization. This argument is put forward convincingly by the theory of memetics⁶. Memetics claims that cultural expressions (ideas, music, beliefs called 'memes') are selected for when they are transmitted horizontally between (networked) communities. People tend to copy successful⁷ memes and discard unpopular ones. With *more opportunities* to exchange ideas in an increasingly connected world a *gradual convergence* on specific cultural expressions could occur. The global appeal of soap series, Big brother, and SUVs be the first signs of this

⁶ For a detailed account of memetics see for instance 'The Meme machine', Susan_Blackmore, 1999. Memes are the cultural equivalent of genes. Memetics applies the principles of evolution to cultural concepts ('memes') such as nursery rhymes and religion.

⁷ A successful meme (idea) is easy to copy accurately, relatively long lasting (sticky) and attaches itself to popular people in the community (writers, artists, politicians). E.g. David Beckham's haircut but also supporting the Irak war in the US after 9/11.

process operating at a global scale. Here, the broad media exposure ensures their popularity and success. With the proliferation of the Internet and social software, more and more people in Europe and across the globe are exposed to one another's ideas. Social networks such as MySpace and YouTube effectively promote successful ideas and opinions. The videos listed in the top ten of You Tube enjoy massive popularity. Similarly, in spite of the massive number of websites on the internet, most people regularly visit only 3 to 5 sites. These sites too exercise a great influence on popular culture. The bad news is a potential loss of cultural diversity. The good news is that with new social networks promoting ideas becomes inexpensive and thus open to larger audiences. The homogenisation of culture is likewise promoted when *civil engagement* in the political process is leveraged through social networking. The increased interaction of eDemocracy sites like *Writetothem* and *HearfromThem* by MySociety⁸ would, according to memetics, drive a convergence on selected opinions and ideas among members of the public and politicians. In the political process of 2020 citizens, civil society groups, public agencies, businesses and business organisations in Europe will have a battery of tools and networks at their disposal to float their views and opinions. Only the most successful (i.e. 'best copied') cultural expressions will survive this battle of ideas and a more homogenous landscape will gradually emerge. This process will be far from concluded by 2020 but as a result of it we may have a more, not less homogenous society at European level.

4. Four scenarios for future eGovernment

Scenario 1: OUR EUROPE: Homogeneous culture and high citizen engagement

Society

In 2020, European society can be characterized as loyal and dedicated. Citizens are eager to develop new initiatives, but also to raise their voices to express feelings of discomfort if public services do not meet their standards. This scenario represents a shift that has taken place over the years. In the first decade of the 21st century many citizens lost faith in their governments, who in their experience have

moved too strongly towards market inspired governance disregarding major societal issues such as disintegration, exclusion, insecurity, and failing public services. In those days the market rhetoric prevailed in public service delivery, focusing on efficiency, productivity, and effectiveness. Citizens were regarded as customers.

In the following decade (2010-2020) European policy has been redirected towards the restoration of trust. Government-citizens relationships improved, because more emphasis was put on transparency and accountability and on engaging citizens in decision making processes. More than before, market forces are critically weighed against what benefits they will bring to citizens. Citizens started to believe in the benefits of a united Europe. In 2020, most citizens possess extensive 'digital skills' which enable them to cleverly use ICTs for strategic objectives. 'Citizen empowerment' means that the average citizen is very well informed. 'Our Europe' shows a remarkable shift towards a more coherent and homogeneous culture with regard to the construction and future of the European society. Although there are (still?) cultural differences between different countries and regions in Europe, a common interest in a united Europe is something which binds all European citizens.

Politics

The political structure in 2020 is characterised by *transparency and openness*. To not drown in huge bureaucracy, the demand for greater transparency translated into greater simplicity. There is a high level of political homogeneity. Most governments have been reduced to a small amount of Ministries, focusing on key societal issues. Many issues are now covered at the European level. All of this contributed to the simplicity and clarity of the political system. Self-regulation has in the first decade of the century shown to be to be a sign of weak government. The outsourcing of governmental tasks, including measures for self-regulation, has not been very successful. As a result the concept has devaluated and stronger government regulation was increasingly called for. By lowering the entry barriers for citizens to vote,

⁸ MySociety is the organization behind writetothem.com and hearfromyourmp.com

participate and really become politically active, the ‘level of democracy’ has increased. In 2020 disparities between Eastern and Western Europe have leveled off.

Institutions

The institutional structure is mainly focused on simplicity and related to this *efficiency and effectiveness*. Government officials are being judged on how fast and well they can service their citizens and citizens have the opportunity to serve themselves if this is more effective. The institutional structure is as simple as possible due to the presence of much information about citizens *intelligent government* (or at least an *all-knowing government*) has come within reach. For better or worse people are less concerned with possible abuse of private information.

Technology

Technological innovation is fast paced in 2020. New scientific insights and technology are quickly transformed into innovations. Technological standards are mainly de facto standards created and pushed on the central European level developed in cooperation with Asian League countries. Due to the (cultural and political) integration within Europe, entrepreneurs face fewer uncertainties with regard to exploiting new knowledge and technology.

Scenario 2: WE, THE MARKET:
Homogeneous culture and low citizen engagement

Society

In this society the private domain is by far the most important domain. The public sector is only important in as far as it enables the proper functioning of the private domain. Due to the successful rise of the ‘Asian Tigers’ in the first decade of the century, European economy was thrown in decline. This has led to a period of transformation in which pressure from the private sector resulted in a strong and one sided focus of government on primarily serving the growth of the European economy. Market thinking became the dominant force in determining the organization of European society. People cooperated gave up on privacy and social rights in the hope to find jobs.

Governments and the market work closely together in service delivery. However, market domination is exacerbating socio-economic divides.

Politics

The three levels of the political domain (the legislative, the executive and the supervisory power) all are directed towards ‘keeping the system running’ and focus strongly on operational excellence and goals such as efficiency, effectiveness and productivity, and by doing so organising a public sector which stimulates competitiveness and economic growth. The entire political system has become a technocratic system. The transparency of governmental activities is ensured, but there is not much citizens interest in the results of the permanently monitored services. Politics has been drastically depoliticized. The democratic task of voting once every four to six years does not lead to fierce political debates. Voters are not offered enthusiastic and appealing visions on the future of Europe.

Institutions

The demarcation between the tasks and responsibilities of the public sector and of the private sector is the result of a long process. Government is now organized in market oriented pillars, service delivery is one of the main and most important assets of government, at any governmental level (local, national, regional). The administration is highly automated. Privacy has become an eroded concept: ambient intelligence has become part and parcel of a modern, lean style government. Governments in Europe have embraced technocratic models of ‘good’ governance.

Technology

To promote a level playing field in the market and to avoid fragmentation of technology platforms as a result of low engagement of civil society (and SMEs), governments in Europe are strictly enforcing interoperability, standardisation and harmonisation. Now Europe has become world leading in economical terms, it is also leading in a number of international standardisation organisations and is able to push its own innovative technology.

Scenario 3: MY COMMUNITY:
Heterogeneous culture and high citizen engagement

Society

In this scenario the key characteristic of society is *diversity*. Over the years, cultural, religious and political opinions, values and lifestyles of citizens of EU Member states have increasingly differentiated. People are bonding together in small communities. There is a growing alienation and polarisation between groups of people with different cultural or political backgrounds. Pressure groups and social movements, mobilised through new networks gather around specific global cultural or political issues. Trust in government and in other state and non-state actors is low. Because the structure of society and governmental institutions is very complex, *transparency* is lacking and mechanisms of *accountability* are inadequate or arbitrary. The ever growing complexity and opaqueness of government practices makes that there is ample room for corruption. The position of Europe as a political- administrative construct has weakened considerably, while the position of local and regional communities has become more prominent and influential.

Politics

Many citizens are engaged in politics, driven only by the interest of the community they belong to. All kinds of single issue parties have emerged; the majority of the population is member of a political party or advocacy. The debate is focused on everyday life issues or questions that arise the cultural and religious diversity. The political systems of EU Member States have evolved into forms of *multi-party and coalition* systems. This heterogeneous constellation of single issue actors is provoked and perpetuated by dysfunctional or poorly performing national and European governments. Citizen groups and other non-state actors expect little from government and are pursuing their own interests. The European Union still exists but is considered to have limited political relevance. Governance is increasingly based on 'negotiation politics'.

Institutions

Governments have had to substantially *decentralise* their tasks and activities; municipalities have become key actors in the public arena. Municipalities have come to rely on civil society, businesses, non-profit organisations and other organisations in *networks* in the execution of traditional government tasks. Public and private tasks, personal and professional life and real and virtual activities are increasingly intertwined. Decision processes and processes of service delivery in the public sector are complicated and cumbersome, because of a continuous competition between stakeholders. As public data are dispersed among several stakeholders and are not structurally exchanged between involved actors, there is no real treat of *privacy* infringement in this scenario

Technology

The technological trend is characterised by sophisticated *customisation* and *differentiation* as a result of user-centred innovation, a trend that flourishes in the second decade of the millennium. Emphasis is on diversity, not on standardisation. Technology is seen as an enabler for self-expression and socialisation rather than as means to increase efficiency and effectiveness. Citizens use virtual spaces and social software to create their own businesses and to organise pressure groups.

Scenario 4: ME, MYSELF AND I:
Heterogeneous culture and low citizen engagement

Society

In 2020, society can be characterised as *passive, detached and indifferent*. People have learned to take care of their own business and leave each other the freedom and space to develop their own interests, opinions and tastes. This has resulted in a society that is *colourful* and diverse but that lacks solidarity. Confidence in public administration and big business is at an all time low. Fear of repercussions from an intrusive, corrupt state prevents citizens from engaging in political activities.

Politics

Politicians and citizens relationships are driven by a lack of trust in 2020. Citizens have lost faith in the ideas and actions and focus their attention

on informal, local and non-state activities. Citizens fear government intruding their *private* sphere. Politicians make little effort to ensure that their policies and institutions are *transparent* and *open*. *Democratic participation* is very low. The result is a kind of ‘minimal state’ focusing on law enforcement, defence and security.

In 2020, there are cultural and economic differences between Eastern and Western Europe persist. Eastern countries have formally integrated but experience little support from the ‘old’ Western European countries have not done much effort to support them. Left to their own devices and with help of new technologies the Eastern European political establishment returned to a surveillance model of government to ensure that citizens do not undermine their power.

Institutions

Since the lines of communication between government and citizens are at best one way, the dream at the beginning of the 21st century of a *networked* and *intelligent* government degenerated to a government of intelligent control. Citizens resist revealing private matters to a government they consider nosy and ineffective.

Technology

Inline with the economic development, technological innovation is fragmented and slow. Standardization is mainly taking place through market forces since legislative bodies do not have sufficient support. Technology advances are largely limited to the domains of law enforcement and policing.

5. Policy implications of the scenarios

Future scenarios are not a goal in itself but have implications for actions, decisions, and policies in the present. The central lesson we have learned from the the exploration of future ICT-driven models of eGovernment is the necessity of *fundamental transformations of governmental roles and actions and the institutional context in which these are embedded*. The underlying trend that we foresee to have the most significant impact in the coming decades is the *shift towards empowerment*, which we see as the *leading thread* running through each of the scenarios. Following this line

of argumentation, the main challenge which governments will have to face is to create public value in terms of empowerment, and to organise their roles, functions and actions accordingly. This will, in many cases, involve fundamental transformations and also quite challenging dilemmas and potential pitfalls. To name some of them: A shift towards empowerment will force governments to become truly citizen and user-driven. Governments will have to operate in more open and networked constellations with other stakeholders. They will need to find the balance between being extremely transparent and accountable, on the one hand, and operate in a flexible, not overtly bureaucratic way on the other hand. They will need to act as intelligent, all-knowing government and deliver services that are highly sophisticated, personalised and proactive, and yet not interfere too much in citizens’ personal lives. And they will have to struggle to define and secure the ‘general’ interest in an increasingly pluralistic and fragmented society. Secondly, we would like to stress that there is not one way of *coping* with these challenges. If we accept the assumption that government models are fundamentally about creating *public value* – future policy directions can only be based on *value-based choices* and thus on a *normative, political vision on the future of eGovernment*. In this paper we have explored some of these potential futures in the scenarios, which to a certain extent reflect different political choices concerning the future: these can be used as input for further discussion which may result in such a vision.

Overall policy challenges, which arise from the assumed move towards eGovernment models based on empowerment values:

Political challenges

- Policy strategies and actions need to be based on an *explicit value-based vision* on future eGovernment, which specifically takes into account the realisation of empowerment values.
- Future eGovernment models need to go beyond mere public service and public sector modernisation, and need to be based on a willingness to fundamentally change governmental operations, institutional arrangements and culture. In this sense, the development of *incremental transition paths* is necessary, possibly based on different *migration scenarios*. This involves a need to look beyond short-term political agendas and implementation issues.

- The trend towards an increasingly networked eGovernment, will involve *cooperation and coordination at all levels of government and with new stakeholders and new intermediaries* at (and across) the local, regional, national and European level. This stresses the need for administrative and regulatory trans-European harmonisation to ensure ‘interoperability’ both at the organisational and the technological level.
- This harmonisation is also important to address the potential risks of an ambient, all-knowing government, particularly to *ensure data protection (security and privacy) rights* of citizens and businesses.
- These kind of long-term and integrative transitional approaches require univocal *political commitment and strong leadership* with an impact on every level of government.

Technological challenges

- Governmental transformation requires back office reorganization and one-stop shop approaches, which, in turn, require substantial *process and workflow redesign* that needs to be translated into new *information architectures*. An additional challenge is that these new architectures need to be *flexible and open* to be sufficiently user-centred and dynamic.
- A stronger investment in technologies that enable *smart ways of cooperating and sharing or producing knowledge* (‘collective intelligence’, open source and open content, collaborative computing tools etc), among relevant stakeholders in this more networked environment.
- Stimulate the use of technologies which are designed to cope with potential *information overload* (e.g. use smart search engines, tagging technologies etcetera that are developed in social networks and in the context of user-generated content)
- Reduce the *dependency on ICT-infrastructures* and related services or build in necessary safeguards (this requires an approach to cope with ‘critical information infrastructures’).

Socio-economical challenges

- The most important challenge will be to create the conditions for a *truly citizen and user-centred* public service provision, which

addresses empowerment values. This involves:

- A highly developed awareness of citizens’ and businesses’ *needs* (‘ambient government’): ambient government involves deep, personalised and pro- active knowledge about diverse user needs and the ability to translate these into highly diverse services, interfaces and access channels. It also point to the need to constantly monitor user needs, user experiences and user satisfaction;
- Building *trust* through being transparent, responsive and accountable (‘transparent government’); but trust also depends heavily on the ability to ensure security and privacy of personal data.
- Diminishing the *regulatory barriers* for both citizens and businesses to be independent, self-organising and self-regulating (‘light government’).
- Ensuring that public services are equally *accessible* to all European citizens and business (‘inclusive government’).
- The latter also involves increasing the *awareness* of the potential benefits of eGovernment services. Currently, the level of deployment of eGovernment services is low, and there is strong evidence that lack of awareness of eGovernment services is the main barrier to take-up. Carefully targeted promotion and awareness campaigns should promote the overall benefits, calm the fears, and give general information about what is involved technically, where to find and how to use services. One aspect should be wider use of charters / codes of conduct / SLAs, etc.

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