Assessing E-government progress– why and what

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Research in progress paper

Abstract. The aim of this primarely theoretical paper is to discuss the use of e-government frameworks and benchmarking tools. It is frequently claimed that providing an effective e-government assessment framework is a necessary condition for advancing e-government. However, there are major drawbacks in many of the existing e-government frameworks and surveys, as e.g. lack of a clearly defined purpose, and that they do not allow for specific national contexts and priorities. The paper reviews some of these frameworks and discusses to what extent they really can fulfil their intention in acting as guiding tools in e-government implementations. It is further argued that these different approaches are not likely to provide adequate framework for research that can deepen our understanding in this field.

Key words: E-government, framework, assessment, evaluation, benchmarking,

Introduction

Bench marks was originally used in topography, to mark the spots for intermediate points in a survey of an area. They could be found on a permanent object (e.g. in walls and pillars), as a mark indicating elevation and serving as a reference in topographic surveys and tidal observations. Similarly, framework had to be developed in accurate measurements of the Earth's surfaces; surveying frameworks are erected by measuring the angles and the lengths of the sides of a chain of triangles connecting the points fixed by global positioning. The locations of ground features are then determined in relation to these triangles by less accurate and therefore cheaper methods (Britannica online 2005).

To day, such words have become rather holy in the computerization of the public sector. Various frameworks have been developed to guide the conceptualization and implementation of national e-government programs. Benchmarking departing from these frameworks should help the politicians and other stakeholders to compare their initiatives with similar ones in others countries, to make sure that their efforts are moving the government in the

right direction. Thus, appropriate frameworks are intended to serve two purposes; firstly, to help the development of e-government, secondly, as basis for assessments and evaluations.

In this paper, I will review some of these frameworks and discuss to what extent they really can fulfil their intention in acting as guiding frameworks in the implementation of e-government. I do not question the use of these tools as such. I rather want to discuss to what extent they may really help the politicians and other stakeholders to define the optimal goals and make the best priorities. Could it be so that the strong focus on surveying and ranking of the different nations according to their scores on selected indexes removes the attention from more fundamental issues related to transforming the government by use of ICT? Each nation with its government has its distinct governmental structure, departing from its unique geography, history and culture. Their efforts and initiatives aims at fulfilling the individual goals, taking into consideration their specific national context and priorities. Is it then fruitful to measure their different e-government initiatives and results using standardised indexes? And furthermore, is it feasible to assess and classify national ICT programs according to a common framework?

Perhaps even more important, to what extent can such complex frameworks constitute useful basis for research? In this paper, I will argue that one should rather depart from simpler 'frameworks' or skeletons that allows for many different approaches. The primary strategy for research should be to link studies of e-government efforts to overall national goals and political priorities, taking into consideration their specific democratic and political system, governmental structure and culture etc. Rather than regarding e-government as a separate research area, one should see it as a vast area for a variety of empirical studies, in which one should apply existing scientific knowledge, theories and methodologies from as well IS research as from e.g. organizational studies, political science, etc.
The structure of the paper is as follows. Following this introduction, section two discuss definitions and theoretical frameworks for e-government. In section three are presented some empirical studies and evaluations followed by a discussion of some empirical results.

Theoretical background

E-government is becoming a global phenomenon that is consuming the attention of politicians, policy makers as well as ordinary citizens. A United Nations World Public Sector Report indicated that by 2003, over 173 countries had developed government web sites. E-government is predicated on leveraging the capabilities and power of ICT to deliver services provided by governments at local, municipal, state and national levels. Beyond service delivery, e-government offers additional channels of interaction among governments, businesses, and citizens, separately or collectively (UN 2003). However, E-government is more than a technological phenomenon. It is transformative in nature, affecting the management of human, technological, and organisational resources processes. Consequently, the implementation of e-government will be a monumental change effort.

What is e-government?

Is it possible to agree upon a common definition of e-government? There exits a number of different definitions of e-government in the literature. Some are rather narrow, focusing on using ICT, particularly the Internet, as e.g. "the use of technology to enhance the access to and delivery of government services to citizens, business partners and employees",

(Deloitte Research 2000, p4.) Others view e-government more broadly as efforts to transform government. Such examples can be:

- Electronic information-based services for citizens (e-service) with reinforcement of participatory elements (e-democracy) to achieve objectives of balanced e-government (Bertelsmann Foundation 2001, p4)

- The use of information and communication technologies, particularly Internet, as a tool to achieve better government (OECD, 2003, p 63).

- The use of ICT in public administration combined with organisation changes and new skills in order to improve public services and democratic processes and strengthen support to public policies. COM (2003).

- The use by the government of Web-based Internet applications and other ICTs, combined with processes that implement these technologies, to a) enhance the access to and delivery of government information and services to the public, other agencies, and to government entities; or b) bring about improvements in government to operations that may include effectiveness, efficiencies, service quality, or transformation" (US government 2002)

These definitions may be useful in describing e-government in a broad-based manner, but offer little insight into deeper issues and considerations relating to the construct, and fail to capture the more complex aspects of transforming government or acknowledge the role of the ICT elements. Consequently, most implementations activities centre on service delivery concerns with little emphasis on real transformation of the services themselves or the processes associated with their delivery (Grant and Chau 2005). They further claim that 'any conceptualization of e-government needs to address a variety of concerns beyond the service delivery elements. Based on a comprehensive literature review, they suggest this definition:

"A broad-based transformation initiative, enabled by leveraging the capabilities of information and communication technology; (1) to develop and deliver high quality seamless, and integrated public services; (2) to enable effective constituent relationship management; and (3) to support the economic and social development goals of citizens, businesses and civil society at local, state, national and international level" (Grant and Chau, op. cit: p 9).

This definition focus on as well technological as economic, managerial, organisational and social/cultural issues, while the legal issues are not, at least explicitly addressed. To furthermore illustrate the complexity e-government efforts, one should not overlook perspectives as i) e-government as a transformational endeavour, ii) a diverse number of solutions, iii) the relation between e-government, information and ICT, iv) integration, service sophistication and maturity, and v) that it is an international phenomenon which not at least a number of consultant companies world wide are heavily involved in.

E-government: politically or scientifically defined?

However, it is necessary to ask what we actually gain from using such broad and extensive definitions? It seems that these definitions are primarily politically motivated, in that they include all initiatives and activities related to the use of ICT in the public sector, aiming at measuring the magnitude and reach of the specific efforts in various countries. These are, however related to specific goals and priorities, and their value-laden, and accordingly not always commensurable.

In the work on eGovernment in the EU Commission, they focus on these overall objectives (Com 2003):

- A public sector as e.g. *open and transparent*, that is understandable and accountable to the citizens, open to democratic involvement and scrutiny.
- A public sector that is *at the service of all*, being inclusive and exclude no one from its services
- A *productive* public sector that delivers maximum value for taxpayers money

Departing from these clearly defined goals and priorities, I propose a simpler framework, defining basically three distinct groups of stakeholders: *politicians*, *public institutions*, *citizens, businesses and civil society* and thereby distinguishing between 3 different dimensions (e.g. Grønlund 2002): 1) the *democratic* dimension, focussing on the political processes and interaction between the constituents and the government, 2) the *service* dimension which comprises the delivery of all types of electronic services, and 3) the *administrative* dimension including various types of management work, internal routines etc. This may be illustrated in this way:
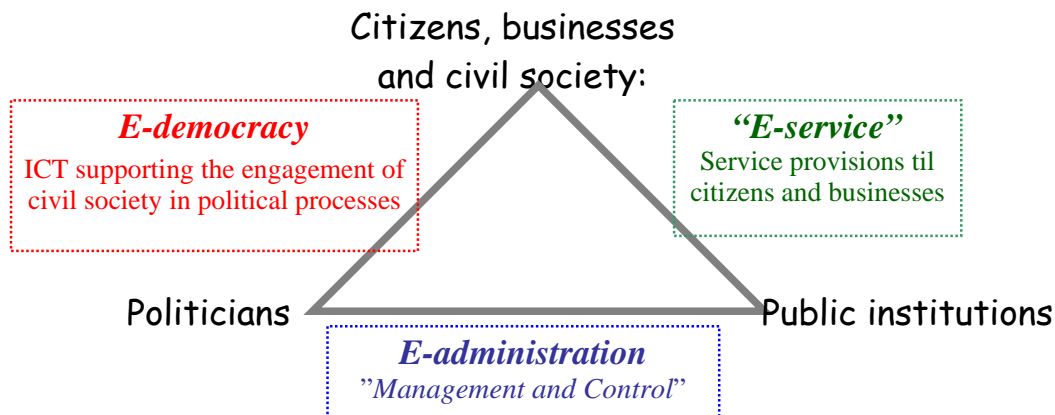
Citizens, businesses and civil society:

E-democracy
ICT supporting the engagement of civil society in political processes

"E-service"
Service provisions til citizens and businesses

Politicians

Public institutions

E-administration
"Management and Control"

Figure 1: Three major dimension in e-government initiatives

The functions and activities in the different dimension cannot be completely separated, but their focus and priorities is clearly different. And even more important, one cannot use the same theories and models when doing research linked to these different dimensions. Thus, when doing research in each of these areas' we should apply adequate theories and models which we find in well established research fields such as e.g. organisational studies, business administration, and political science. In addition, we need to study the development and maintenance of the different layers of information and organisational infrastructures and back-office organisations that is required to support e-government functions, including basic communication and information services, security functions etc.

Assessment and benchmarking of e-government initiatives

Benchmarking of governmental websites and national e-government initiatives has been conducted in a number of years. There are several well-established surveys on e-government (e.g. UN 2002, 2003, 2004, Capgemini2005). These surveys employ different assessment models for e-readiness, digital divide and other relevant factors, leading to varying conclusions on the global state of e-government. The grounds for these efforts are well illustrated by a statement from the EU report (EU, 2001):

The ministerial declaration on the eGovernment conference, together with benchmarking survey should give political momentum to the development of online public services and to the identification of the needs for these services at pan-European level. This will have to be complemented by a focus on back-office reorganisation, the creation electronic marketplaces for public procurement and investment in new equipment in administration

A survey, conducted by Capgemini on behalf of the European Commission, is part of the benchmarking programme that assesses the progress of eEuropa (Capgemini 2005). The study measures the e-government policy indicator of the eEurope action plan (eEurope 2005). The objective of this action plan "is to develop public services and a dynamic environment for e-business through widespread availability of broadband access at a competitive price and a secure information infrastructure". Thus the eEurope benchmarking indicators are aimed to support member states in achieving the objectives of the action plan.

The council of EU decided that a methodology developed by Capgemini to measure the original indicator in 2001 had to be continued for the scoring of the new indicator. (In the eEurope 2002 Action plan the policy indicator was *"percentage of basic public services availability one line"*, while the new definition is "*number of basic services fully available online*". The EU commission defined a list of 20 basic public services. For 12 of these services, the citizens are the target group while the remaining 8 are targeting the businesses sector. In order to this eEurope 2002 indicator, a four-stage framework (the scoring framework)[1] has been defined[2].

i) Stage 1: Information:

ii) Stage 2: One-way Interaction

iii) Stage 3: Two-way interaction: The publicly accessible website offers the possibility an electronic intake with an official electronic form to start the procedure to obtain this service. This implies that there must be a form of authentication of the person (physical or juridical) requesting the service in order to reach stage 3.

iv) Stage 4: Full electronic case handling: The publicly accessible website offers the possibility to completely treat the public service via the website, including decision and delivery. No other formal procedure is necessary for the applicant via "paperwork".

Based on this evaluation scheme, all old and new member countries have been measured. In the report from the fifth measurement was that the overall average score was 65%, which means that it is located between stage 2 (one-way interaction) and stage 3 (two-way interaction). However, the old 15+[3] member scored 72%, while the 10 newcomers achieved corresponding 53%, indicating that these countries are lagging about 2 years behind the old ones.

However, what do us really get from these statistics? In an analysis of these results, it was found that some countries appeared to rather remarkable progress on the last evaluations (e.g. Austria), which have put priorities in improving services that contributed to better ranking (ECEG 2005), while others (e.g. Belgium) had seemingly far less progress, because they had focussed on infrastructural efforts, in particular a national wide citizen security card (Snijkers 2005). It can therefore be argued that this type of one-dimensional framework do not capture the different dimensions of a more advanced public web sites.

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[1] E.G. labelled as "The scoring framework", as illustrated in Capgemini's Web based survey on electronic services public services, EU DG Information Society, 2003.

[2] See http://europa.eu.int/information_society/eeurope/2005/doc/all_about/online_availability_public_services_-5th_measurement_fv4.PDF

[3] 15+ means the old 15 member countries + Iceland, Norway and Switzerland

In the report, Capgemini states that "the survey only analyses the result of the eGovernment efforts from the perspective of online availability of public services. The results should be integrated into a broader perspective of various eGovernment measures: linking services availability, channel selection, back-office fulfilment capability; and service usage and impact of eGovernment". And even more important: "Initiatives developed by government to enhance the quality of their service provision – service integration, from the pull to push service delivery – are not validated in the indicator, but the information provided by the member states concerning concrete cases is covered in this report." (Capgemini 2005) This is in my opinion fundamental issues in the discussions on the development of e-government, both in a political and scientific context.

Some experiences from quality evaluations in Norway

The Norwegian government initiated a project together with the research institute Vestforsk[4] to develop a set of quality criteria for evaluating public websites in Norway. The first work started in 2001 and resulted in a set of 21 indicators (Ølnes 2001, 2003). The work has been repeated in the following years, and new set of indicators were developed. The 2004 evaluation was based on an indicator set consisting of 25 items; again some indicators were new, divided in three groups: accessibility, usability and useful services. In all more than 700 public web sites were evaluated (Kvalitet 2005).

A direct comparison between the results in 2001 and 2003 is not possible due to the different indicator sets. However, for the indicators being unchanged from 2001 to 2003 we saw an improvement of more than 10 %. From 2003 to 2004 there have been some improvements (exact figures are not available yet). After the first set of evaluations in 2001 the project group received a lot of feedback, especially from the municipalities, many of them asking for new evaluations since they had changed made changes to their web sites following the evaluation. As such, these evaluations stimulated improvement work, in particular to increase accessibility, but were not very helpful in guiding the development work itself.

How consistent are different evaluation frameworks?

It can be argued, however that such evaluation do only provide us with limited insight of how the websites really are perceived by different people. In parallel with this evaluation, the Norwegian Consumer Council carried out a similar evaluation, however based a different set of indicators (FR 2004). The results from this evaluation differs substantially from the ones conducted by Norge.no, due to that these two indicator sets emphasize different aspects and criteria. It is however, not obvious whether it is the former or the latter of these evaluations that provide the best evaluations. It depends on what aspects you would like to put emphasize on.

In a recent study, a new framework was developed, building on experiences from others (Eikeland and Kongshaug 2005). It was tested on a number of experts. The results showed that the experts interpreted the framework somewhat differently. This illustrates the problems with the results of such evaluation. If not based on very standardised and simple criteria, the results are likely to be depending on the evaluators' background, knowledge and preferences. There exist several methods and techniques to improve the value of measure-

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[4] Vestforsk is short for Western Norway Research Institute

ments and evaluations. Nevertheless, all types of evaluations do only measure what is measurable, leaving other aspects out. They are accordingly useful only to a limited extent.

Assessing the E-democracy dimension

Quite another approach was applied in a study conducted by the University of Oslo in 2003 on how Norwegian local and regional municipalities were using their websites to provide information and get feedback from its citizens (Haug 2003). 435 different municipal web-pages were visited[5], with nearly 120 different items for each website. The large database was later supplemented by statistical data describing each municipality, e.g. economic data, size, citizens with access to Internet, etc. The focal point was primarily on to what extent the local municipal websites were used to facilitate what we labelled "political communication". The findings of the study showed that there was large variety in how the municipalities actually were utilizing ICT and Internet for political communication. In general, their web-sites are mostly used for information provision, primarily supporting enlightened understanding, while interaction, supporting effective participation is less frequently available.

The analysis showed, however, that the applied model can only partly explain the variation across the municipalities. It is therefore important to develop more adequate models and thus offer validated knowledge as basis for practical action, e. g. by identifying factors that seem critical for successful application of Internet for stimulating democratic processes. One conclusion from the study was that in order to collect empirical data that can have stronger explanation power, one need to get access to more specific data about the individual municipalities, e.g. by interviewing key persons about their strategies and background for their decision regarding developing the web-sites. It seems clear that the variety in e-democracy initiatives have to be analyzed by using different models than when evaluating e-service implementations. This is clearly demonstrated in e.g. (Hacker and van Dijk 2000)

Determining Progress towards e-Government

In an interesting paper Adegboyega, Janowski and Estevez (2005) presents a comparative study of 11 international surveys on e-government between 2001 and 2004. It identifies a common set of 'core indicators' for assessing e-readiness and suggests ways to determine the weights for them. The paper also introduces the concept of a 'target e-ready state' and examines how it may provide a scale for determining the progress of individual countries.

The paper claims that providing an effective e-government readiness assessment framework is a necessary condition for advancing e-government. This framework should not rely solely on the general e-readiness measures, as clearly e-readiness transcends e-government. In fact, one of the major drawbacks of the past e-readiness surveys is lack of a clearly defined purpose, beyond the operational definitions provided. They claim that a framework for effective e-government assessment must instead identify and focus on the critical variables for e-government and consider the peculiarities of the environment assessed.

The paper presents a comparative analysis of the survey series consistently carried out by three organizations between 2001 and 2004: United Nations Department of Economic and

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[5] The Internet-based examination of all municipality websites in Norway was conducted by Harald Baldersheim, Morten Øgård *et al* at Department of Political Science, University of Oslo.

Social Affairs (UN-DESA), Accenture, and the Centre for Public Policy of the Brown University. The surveys benchmark countries based on different sets of indicators. For instance, UN-DESA provides information on the maturity of online presence, availability of the basic ICT infrastructure, and human development of UN member states. Accenture examines the breadth and depth (sophistication) of online services of a number of selected countries. The analysis reveals that the use of different sets of indicators and different weights assigned to them lead to varying conclusions on the performance of the countries in terms of e-readiness and e-government.

The conclusion of their study is that the disparity and lack of standards for e-government assessment lead to varying conclusions on the global e-government readiness. It shows that the outcomes from the three e-government surveys do not in general agree on the relative readiness of countries. To aid the provision of standards in e-government assessment, they identified the set of core indicators that are central to e-government readiness, based on the data provided through the 2004 UN-DESA survey. Furthermore, they suggest an approach for determining weights for these indicators, which they believe can serve as a foundation for developing international e-government readiness assessment models.

I believe we all can agree upon that assessing the progress in e-readiness is important for the politicians in each country; in order to get a better understanding of how prepared the citizens are for e-government development efforts. Statistics on variables as quality and accessibility of the ICT infrastructure, basic skill and competence in the population important data in the planning and implementation work. But a well functioning a-government will rely on well informed, knowledgeable and critical citizens, which cannot be assessed by standardised measure. And furthermore, to what extent it is fruitful to compare such statistics across countries is not at all fully documented, as it is necessary to understand the specific character of the administrative and democratic system in each country.

Use of frameworks in e-government developments

The drive to implement e-government has resulted in the adoption of many e-government visions and strategic and strategic agendas, driven by its own set of social, political and economic factors and requirements (Accenture 2004). Consequently, the missions and objectives that emanate from these e-government visions variously manifest strong focus on selected elements. While some governments' strategic agendas focus primarily on service delivery issues, others may focus more on creating internally efficient systems and processing. Still others may adopt a more comprehensive view, incorporating issues as constituent relationship management and e-democracy. Although each of these view of e-government may be legitimate, there is frequently expressed a need for some common understanding to allow for assessment, comparison and explanation of current efforts to vis-à-vis past and future investments in the e-government enterprise, and on increasing cross functional efficiencies (Grant and Chau 2005).

The literature describes a number of frameworks that in various ways conceptualises e-government development and implementation, see Grønlund (2002), Bertelsmann (2001), Accenture (2004) etc. The most comprehensive model so far (to my knowledge) is developed by Grant and Chau (2005), basing their work on a survey of a large number of previous efforts. Even if their framework does not include all dimensions and aspects of e-government, it may very well illustrate the complexity of such generic models.

Their goal when developing this framework was to characterise and identify the different directions and dimensions of different e-government approaches, and that could be used to "categorize, classify and compare electronic visions, strategic agendas and application initiatives". Furthermore, they want to provide a framework that "should act as a lens to focus attention and awareness on underlying issues and elements that could be debated, discussed and further developed". Their model is outlined in this way:
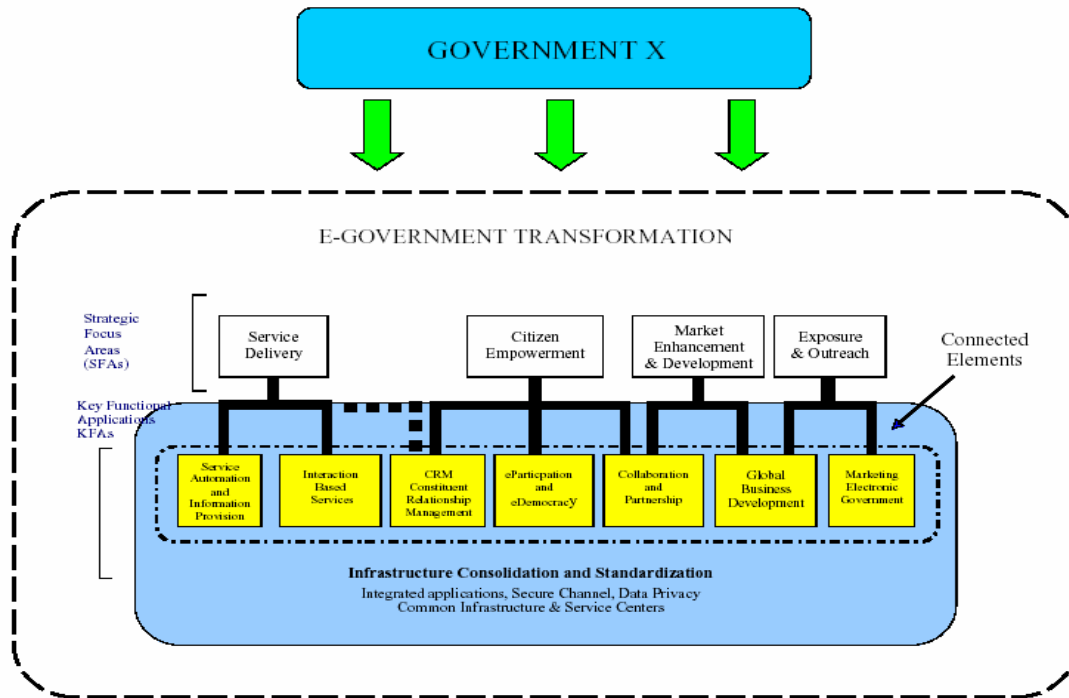

Figure 2: A generic framework for electronic government (from Grant and Chau 2005, p 13)

Grant and Chau have applied there framework on case studies, and finding that framework provided:

- A mapping of diverse electronic government elements to a common perspective
- the ability to compare and differentiate underlying goals and themes between different implementations
- the ability to draw general conclusions and compare differences and similarities across implementations

This framework demonstrates an impressive effort in modelling complex factors and relationships, and that it can be used for assessing and classifying different e-government initiatives. It illustrates the large variety of areas and elements that such frameworks have to include in order to be applicable across different nations and cultures. This framework has also been used in a small study of a Norwegian state agency (Berg, Refsdal and Holmen 2005), but it turned out that it provided only limited usefulness for their study. And more fundamentally, the framework seems primarily to be useful for descriptions and classifications, but not for exploring and explaining why and where.

However, what is interesting with this framework is the emphasis on i) "to enable identification of e-government goals and objectives and ii) be adaptable to country-specific re-

quirements". Every nation has its own functional, social and administrative objects to fulfil. Therefore, every e-government program should be viewed and assessed with respect to its context of applications. A greater understanding of motivation and resulting patterns of development in different settings can facilitate the process of comparing approaches and provide a rational means of setting the reform of public administration on course for efficiency and transparency, with clear orientation towards its citizens (Bertelsmann, 2001). It is vitally important to distinguish patterns of development and motivation for e-government and identify transferable elements. Thus, Grant and Chau (op. cit) point to that e-government development and maturity must reflect the changes in the political, social and economic orientation of the hosting nation. New technology and improved organisational infrastructure will need to be developed to meet such requirements.

Discussions - what type of framework do we need?

The aim of this work has been to review some recent work in this field, and by that to illustrate the large variety of different approaches to modelling and assessing e-governments initiatives. It has been argued that these different approaches are not likely to provide a comprehensive and unifying framework as basis for assessing, classifying and comparing different e-government programs, even though some of the referred work has shown interesting result. These rather complex frameworks may help in providing useful external descriptions, but they will no be able to take into account the specific context of each country. The many different perspectives and interests involved in a national ICT programs may be partly conflicting, and thus require difficult political priorities and considerations, as e.g. efficiency versus quality of services and citizens participation. This is not taken in account in e.g. the scoring framework. Furthermore, it is hard to se how these frameworks can account for national differences in legislation and other regulations.

We have also seen that international surveys and ranking can result in that some countries give priorities to achieve short terms results rather than to gain long effects. This may in particular delay the building of adequate infrastructures and prevent the provision of adequate security and vulnerability measures. Furthermore, in conducting these various measurements and evaluations there will always be great challenges related to reliability and validity of the data collected.

I believe that Grant and Chau's framework presented above can be useful for politicians and other stakeholders on a policy level in the planning and implementation work. But it is not evident that the framework is as useful for doing research. I will therefore argue that we may benefit from using rather simpler "framework" or skeleton, based on the dimensions illustrated in figure 1. We should thus basically distinguish between these three distinct perspectives; corresponding to e.g. Grønlund (2002):

I: The democratic dimension (e-democracy**)**
The variables associated with this dimension should aim at measuring to what extent ICT-based functions and facilities really support the democratic ideals of a municipality or state agency. Such values are *openness and transparency*, services that are *understandable* and *accountable* to the citizens, open to democratic *involvement* and *scrutiny,* and stimulates *interaction and participation*. Thus, e-democracy studies should not only address services and facilities that my help the interaction between the civil society and the political system, it is

important to study whether all types of e-government services and functions support democratic processes.

An example of this type of research is found in Haug (2003), Haug and Jansen (2004) presented above. This study revealed that there is large variety in how Norwegian municipalities actually are utilizing Internet for political communication, but that the models used in the analysis were not able to explain this variation. More adequate theoretical approaches are thus required,

II: The service provision dimension (e-service)
The variables belonging to this dimension should aim at measuring to what extent public electronic services meet all the requirement defined, both related to functionality, quality, user friendliness, security, etc. The scoring framework discussed above will be one possible approach in describing some important qualities of the services. But one major weakness is that this framework is of little help in explaining why and what. Such studies will have to borrow theories from many different research fields, as e.g. information systems, organisational studies etc.

The quality of governmental services or functions cannot fully be measured by a general, context-free evaluation framework or index, but rather has to be evaluated according to different criteria, depending on its context, primary goal and type of users.

III: Efficiency and efficacy dimension (e-administration)
The *efficiency dimension* should focus on the range, content and quality of interaction and cooperation between offices internally) and between different public agencies, both on a state level and on local (municipal) level. This corresponds partly to the horizontal integration indicator discussed above, including organisation transformations. However, it is important to make sure that such studies go beyond measuring effects and consequences, in that they focus on conditions for the different initiatives and efforts, as well as the relation between them.

The arguments for selecting emphasizing distinct dimensions is that
   i)   They represent three different set of goals and priorities for a nation, and these goals may be both unifying and conflicting
   ii)   The distinction between them combine simplicity and generality, in that they allows for a large range and theoretical and methodological approaches
   iii) They should be useful for as well research as development work and evaluations, but indifferent ways.

However, these arguments are mainly theoretical, supported by a limited number of empirical studies. Is necessary to review and categorise a lot more of e-government studies.

Infrastructural and organizational aspects

A majority of the research in this field has focused on front-office services; it seems so far to have been less attention on how government need to reorganise in order to meet the challenges and opportunities represented by Internet.

In a study of back office reorganisation[6] it is claimed that there is a strong link between re-organising government back office and electronic public services experiences by users. This is not surprising, as almost exactly the same conclusion have been drawn from the first phase of the "dot.com" wave in which enterprises went on Internet without changing its internal business organisation.

The back-office functions may be organised in different ways to serve a variety of different user services, spanning from simple interaction services to fulfilled case handling and inter-action between different governmental organisation, implying both vertical and horizontal integration, and including both centralised and decentralised solutions. The different elements may be illustrated in this way:
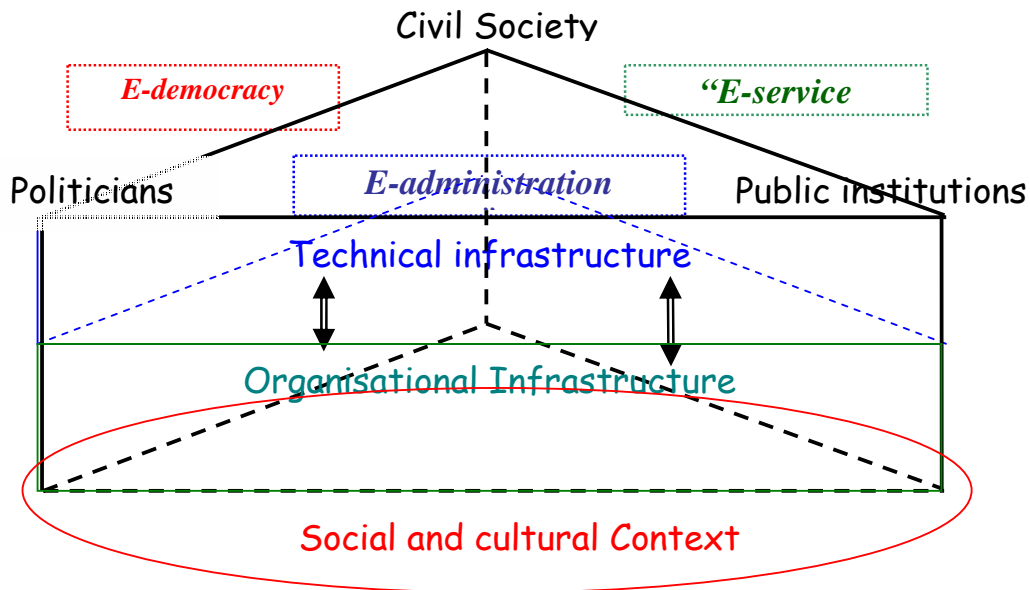

Figure 4: E–government infrastructure - layered architecture

However, the back-office organisation should be seen as an integral part of national infra-structure supporting e-government services and facilities in general. The infrastructure should be understood in a broad sense, including technical, informational and organisational elements, as e.g.

  i)   an *flexible, secure and reliable* technical infrastructure, that is the network and basic system services
  ii)   the availability of *sufficient information resources* as e.g. databases and other types of information system and applications
  iii) A well functioning *organisational infrastructure*, which is a back-office organisation that can serve the web site in an adequate way.

However, these requirements do only apply to the supply side. An essential precondition is that the society at large is able to benefit from this e-government structure. Thus, we have

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6 The study "Reorganisation of Government Back Offices for Better Electronic Public Services" was conducted by Danish Technological Institute, Copenhagen and Institute for Information management, Bremen and reported to EU in January 2004.

to create a necessary social and cultural basis among the citizens, and the whole civil society. We require a public sector that is *at the service of all*, being inclusive and not exclude anyone from its services.

Conclusions –a extended research agenda is needed

The limited literature review has shown that there exist a number of different approaches to defining framework for e-government assessment and evaluations, many of them having various weaknesses. Rather than to develop standardised framework for such evaluations, one should aim at developing research models that are useful for understanding and explaining the differences in the various nation's implementations of e-governments solutions, linked to their specific national context and priorities. In stead of regarding E-government as a separate research field, one should see it as a vast area for both theoretical and empirical studies, offering a broad range of applications and organizational settings. In such studies, we may apply adequate theories and methodologies from a large number of research fields.

A simple research skeleton has been proposed, including three distinct dimension e-democracy, e-service and e-administration, all of them based on adequate technical and organisational infrastructures. Relevant research issues can be to study the specific character of each dimension, how they relate to each other, the significance of and requirements to the infrastructures etc, taking into account the specific national social, political and cultural context. Rather than just looking for similarities, on should also identify differences and peculiarities.

References

Accenture (2001) "e-Government Leadership - Rhetoric vs. Reality: Closing the Gap", [online], http://www.accenture.com/xdoc/en/industries/government/final.pdf

Accenture (2002) "e-Government Leadership - Realizing the Vision", [online], http://www.accenture.com/xdoc/en/industries/government/egov_april2002_3.pdf

Accenture (2003) "e-Government Leadership: Engaging the Customer", [online], http://www.accenture.com/xdoc/en/industries/government/gove_capa_egov_leadership.pdf

Accenture (2004) "e-Government Leadership: High Performance, Maximum", [online], http://www.accenture.com/xdoc/en/industries/government/gove_egov_value.pdf

Adegboyega, Ojo, T. Janowski and E. Estevez (2005) Determining Progress Towards e_government: What are the core indicators? In Remenyi (Eds) Proceedings from 5[th]Conference of e-Government University of Antwerp, Belgium 16-17 June 2005

Bakry, S. (2003) "Toward the development of a standard e-readiness assessment policy", International *Journal of Network Management,* Vol 13, pp129-137

Berg, H., Refsdal, F.O. og Holmen, L. (2005) *Datatilsynets bruk av IKT – en analyse av mål og rammeverk for e-forvaltning.* Avdeling for forvaltningsinformatikk, UiO. Juni 2005.

Bertelsmann Foundation (2001) "*Balanced e-government – Connecting efficient administration and responsive democracy".* http://en.bertelsmann-stiftung.de/index.html

Bridge.org (2001) "*Comparison of e-Readiness Assessment Models"*, [online], http://www.bridges.org/ereadiness/report.html

Britannica online (2005):   http://www.britannica.com/

Carbo, Toni, and Williams, J. (2004) "Models and Metrics for Evaluating Local Electronic Government Systems and Services", *Electronic Journal of e-Government*, Vol 2, Issue 2, pp 95-104

Capgemini (2005) *Online Availability of public services: How is Europe Progressing?* European Commission DG Information Society, Bruxelles.

COM (2003) *The Role of eGovernment for Europe's Future.* Communication from the Commission to the Council, COM (2003) 567 Final. Brussels 26.9.2003

Deloitte Research Public Sector Institute (2004) *At the dawn of e-government. The citizens as customer. http://www.deloitte.com/dtt/article/0,1002,sid%253D37085%2526cid%253D60672,00.html*

ECEG (2005) *Proceedings from 5thConference of e-Government* University of Antwerp, Belgium 16-17 June 2005. ISBN 1-905305-01-X

eEurope 2005: eEurope 2005 Action Plan Commission of EU. COM (2002) 263 final.

http://europa.eu.int/information_society/eeurope/2002/news_library/documents/eeurope2005/eeurope2005_en.pdf

Eikeland, C. and S. Kongsrud (2005) *Utvikling av E-valuer – et rammeverk for å måle hvor langt kommuner er kommet i e-forvaltning*. Høgskolen i Agder, 2005.

EU (2001) Council of European Municipalities and Regions on eGovernance 28 November 2001.

FR (2004) *Forbrukerrådet*. http://www.forbrukerradet.no/

Grant, Gerald and Chau, Derek (2005): Developing a Generic Framework for E-Government. Journal of Global Information Management, 13(1), 1-30, Jan-March 2005
http://www.igi-online.com/downloads/pdf/ITJ2725_dGLKgMR9SK.pdf

Grannfland-Essers, I., and Ettedgui E. (2003) "Benchmarking e-Government in Europe and the US", Rand Europe

Grønlund, Å. Eds. (2002*) Electronic Government: Design Visions and Management*. Idea Group Publishing. 2002

Hacker, Kenneth L & van Dijk, Jan (2000): *Digital Democracy, Issues on Theory & Practice,* London: SAGE Publications.

Haug, Are Vegard(2003): *Politisk kommunikasjon på kommunale hjemmesider*, Oslo, Unipub Forlag. Også tilgjengelig på http://www.afin.uio.no/forskning/hovedfag/Are_vegar-ok.pdf

Haug, A.V. and Jansen, A. (2004) Municipalities enter the Internet – changed political communication? *Proceeding from European Conference on e-government,* Dublin 17-18. June 2004

Heeks, R. (1999) *Reinventing government in the information age.* London and New York Routledge, p 9-12.

Jansen, A. and S. Ølnes, (2004) Quality Assessment and Benchmarking of Norwegian Public Web Sites. *Proceeding from European Conference on e-government* 16-18.juni 2004 Dublin

Karim, Rais Abdul (1999) *Reengineering the public service:Leadership and change in an electronic age*. Subang Jaya Malaysia Pelanduk Publ.

Koh, C.E. and Prybutok, V.R. (2003) The three ring model and development of an instrument for measuring dimensions of e-government functions. *Journal of Computer Information Systems* 43 (3) 34-39.

Laye, K. and Lee. J. (2001) Developing fully functional e-government: A four stage model. Government Information Quarterly, 18 122-136.

Kvalitet 2005 (2005)*Kvalitetsmerking av offentlige nettsteder*
 http://www.norge.no/kvalitet/default.asp

OECD (2003) The case of e-government: Experts from the OECD Report "The E-government imperative." OECD Journal on Budgeting 3(1) 62-96

Osborne, D. and Gaebler, T. (1992) Reinventing government: How to entrepreneurial spirits is transforming the public sector. New York: Plume

Snijkers, K (2005) Balanced e-Government Implementations. In Remenyi (Eds) Proceedings from 5thConference of e-Government University of Antwerp, Belgium 16-17 June 2005

UN (2002) Benchmarking E-government: A Global Perspective - Assessing the UN Member States (2002) http://unpan1.un.org/intradoc/groups/public/documents/UN/UNPAN021547.pdf

UN (2204) UN Global E-government Survey 2004

http://unpan1.un.org/intradoc/groups/public/documents/UN/UNPAN019207.pdf

UN (2003) UN Global E-government Survey 2003.
    http://unpan1.un.org/intradoc/groups/public/documents/UN/UNPAN016066.pdf

US government (2002) The e-government act of 2002. HR 2458.
http://csrc.nist.gov/policies/HR2458-final.pdf

Ølnes, Svein (2001): Norwegian: Oppsummering av kvalitetsevaluering 2001, IN (English: Su*mma-ry of quality assessment*). Vestlandsforsking, VF-notat 7/2001. Sogndal

Ølnes, Svein (2003): Norwegian*: Kvalitesevaluering av offentlege vevtenester*, (English: *Quality assessment of public web-sites*) Vestlandsforsking, VF-rapport 9/2003. Sogndal.