Developing E-government Systems - Legal, Technological and Organizational Aspects

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1 Approaching eGovernment

Government administration of Nordic countries is comprehensive and plays a central role in the provision of welfare to citizens. Government agencies both exercise authority and produce services through a diversity of schemes. From the start of the 1960s and, in particular, during the last fifteen years, government administration has been transformed into machine-managed, electronic government (eGovernment). In this respect the Nordic countries today are among the most advanced in the world. In a United Nations ranking of e-readiness, Sweden, Denmark and Norway held the top three rankings.[1] Highly developed eGovernment sectors have developed concurrently with the high degree of access to Internet enjoyed among citizens. In 2009, 86 % of the Norwegian population had access to Internet and 73% had access to broadband, implying that the current level of technology infrastructure allows comprehensive and advanced electronic interaction between government and citizens. Moreover, 81% of the Internet users communicated via the Internet with the government sector during the last twelve months.[2]

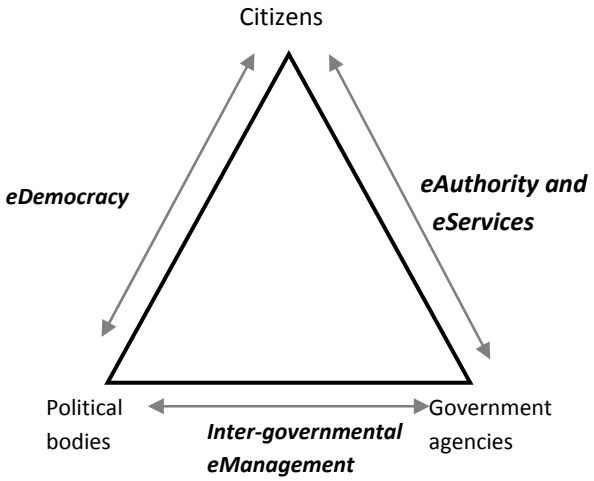


Figure 1: Main actors and relations in eGovernment

1 *Cf.* UN E-Government Survey 2008. *From e-Government to Connected Governance*, United Nations, New York, 2008, table 3.1. The e-government readiness index combines the UN's web measure index, telecommunication infrastructure index and human capital index. The survey focuses mainly on the government- to-citizen and government-to-government aspects of e-government, but only to a very limited extent on the relations between government and business.

2 Source: Statistics Norway, "www.ssb.no/ikt/".

My aim in the following pages is first and foremost to demonstrate and discuss interrelationships between legal, technological and organizational aspects of eGovernment. I use Norwegian eGovernment as an example. My intent is to convince readers that successful development of future eGovernment administration requires an integrated approach since the traditional professional areas (ICT, law, and organization) are in a continual process of communication, interaction and mutual influence. I will not, however, delve into the many faceted issue of how relevant national laws should be understood in the context of ICT in a reorganized government administration, but will instead investigate how the aforementioned professional elements are and should be connected.

eGovernment is a wide concept covering both democratic and administrative aspects. Here, administrative aspects will receive the greatest attention, meaning that I will not discuss questions regarding representative democracy (electronic elections etc, cf. left-hand side of figure 1.) There are, however, important democratic elements embedded in administrative sides of eGovernment too, for instance regarding access to government-held information and public hearings on proposed new legislation. Primary focus will be on the relationship between government agencies on the one hand and citizens on the other. Citizens embody at least three roles: as members of the public, as data subjects and as parties to individual cases. Emphasis will be on the role as party because this role comprises the two others. Aspects of inter-governmental management, i.e. political and administrative steering and control in and between political bodies and government agencies (cf. bottom line of figure 1) will only receive attention to the extent it is relevant for the exercise of authority and services (cf. right hand side of figure 1).

eGovernment has been defined in many ways, and different definitions accentuate different possible elements.[3] Twenty years ago and earlier, before the use of word processing and other ICT-based office support tools became common, it was meaningful to distinguish between electronic and (purely) manual government. Today the use of various electronic tools is commonplace, and all government agencies use word processing, email and web-services. Meaningful use of "eGovernment" should thus probably be reserved to ICTapplications of more advanced nature. How advanced and in what way ICT applications are to be used, however, is an open question. At least four main characteristics may be identified, in my view, as particularly relevant for the purposes of this article: eGovernment typically handles electronic *documents* as sources of information; they *communicate* by means of ICT; they execute *automated operations* by means of programs developed to execute their specific tasks; and they typically generate an electronic *track of activities* (by means of logging etc). The more relevant the mentioned characteristics are, and the more important they are, the higher the need for an eGovernment concept to signal requirements for reflection and discussion. Here, I choose to use rather advanced eGovernment as an example, that is, government bodies integrating all of the four technological characteristics mentioned.

3 Several definitions and examples are presented in Michael Chissick and Justin Harrington (eds.), *E-Government. A Practical Guide to the Legal Issues*, Thomson, London 2004, pp 4 - 11.

Definitions of eGovernment often signal political means and ambitions. A rather technology-specific and detailed definition of eGovernment is found in the US Electronic Government Act:

> "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 bring about improvements in government to operations that may include effectiveness, efficiencies, service quality, or transformation." [4] (My italics and underscoring)

"Other ICTs" (cf. quotation) may be read as a reminder that use of information technology in the government sector started fifty years ago. "Web-based Internet applications" have brought technology out into the public sphere and citizens have assumed the role of users of ICT which previously was reserved for internal government use. Words like "enhance", "improvements" and "transformation" signal positive change as the overall goal, and service access and quality, effectiveness and efficiency are set as areas of change. Thus, this definition of eGovernment does not express "business as usual" but "better business". Descriptions of aspired improvements do not, however, express typical legal goals, but are rather marked by mindsets of economists and businessmen.

Other definitions of eGovernment are made technologically neutral and in addition introduce clear organizational elements:

> "eGovernment is defined here as 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."[5] (My italics)

The need to combine ICT and organizational development is generally recognized and well established, and reflects the idea that both "production conditions" and outputs should undergo change. Reformed technology and organization, in other words, creates new skills for the benefit of citizens and private agencies etc.

If customary business thinking dominates our understanding of eGovernment, it is easy to forget the special features of government administration. One important characteristic is that democratic governments are built on the idea of the constitutional state and the principle of rule of law. The Norwegian government sector, furthermore, is ruled by statutory law to an almost extreme degree. Our government administrative law contains great compilations of (often) very detailed rules regarding subject matter and

4 US government (2002) The e-government act of 2002. HR 2458, ''§ 3601. Definitions (3), se "csrc.nist.gov/drivers/documents/HR2458-final.pdf".

5 COM (2003) *The Role of eGovernment for Europe's Future*. Communication from the Commission to the Council COM (2003) 567 Final, para 3. Brussels 26.9.2003, se http://ec.europa.eu/information_society/eeurope/2005/doc/all_about/egov_communication_en.pdf.

procedure in various decision-making processes. eGovernment may thus be described as an area where legal regulations play a very significant role. Thus, one may ask why changes brought about by *the legal system*, in particular statutory law, are not part of the change processes embedded in the cited definitions.

One of the fundamental insights of this article is that changes brought about by the legal system should be seen as a typical elements of eGovernment considerations, similar to the qualification of organizational change. I claim this as a prerequisite for the improvement of outputs from government agencies: The aim should be not only to improve services, efficiency etc, but also to ensure correct individual decisions, protection of personal and business data etc. The legal system is in itself dynamic. Statutory law is continually amended to catch up with and impel changes in society; courts and administrative bodies of appeal clarify applicable law etc. It is thus impossible to attempt to preserve the architecture and subject content of eGovernment systems. Even organizational structures may be heavily influenced by legal change.

This article emphasizes elements of change in the eGovernment sector and underscores that legal, technological and organizational change must be seen as three integrated change processes (cf. figure 2). The objective of such alterations is to improve the results of government activities. Because government agencies exercise authority in individual cases, improvements should also embrace legal decision-making. Legal elements should be present on both sides of the definition of eGovernment; as a measure (in line with new ICT and reorganization) and as an aspired result (in line with improved services, efficiency etc). I designate such positive and controlled change processes in eGovernment as a "development", implying that the three central change processes of electronic government could be identified as developments of ICT systems ("system development"), organizational development and regulatory development. I use "eGovernment system" as a common designation of the output from such integrated development processes. The eGovernment system does not, in other words, refer only to technological aspects of information systems, but also includes integrated organizational and juridical elements.

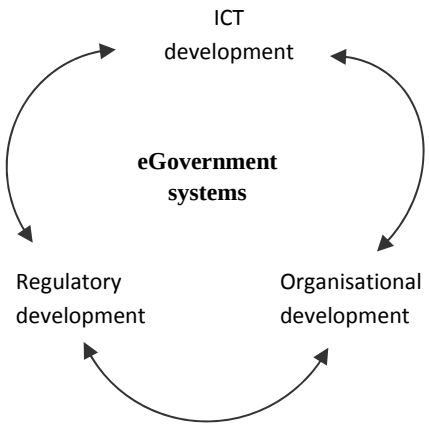
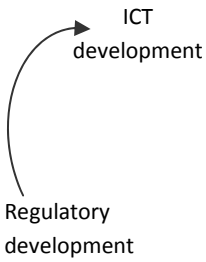


Figure 2: Main different development aspects of eGovernment systems.

This triangular approach to eGovernment both recognizes the three elements and - just as importantly – takes into account the relationship between them. The development processes could/should influence one another in both direct and indirect ways. Below emphasis will be on such direct and indirect influences. Indirect effects, for instance, may occur if organizational change makes changes in ICT necessary, which again triggers regulatory amendments. To what extent and in which ways the three development processes influence one another directly or indirectly is a factual/empirical question, but is also a matter for normative considerations: How *should* system development influence regulatory development and vice versa?

2 Regulatory Development and ICT Systems

2.1 Introduction



Government sector is – as stated earlier –heavily regulated by statutory law. eGovernment implies on the other hand that these laws are handled by means of ICT: Certain legal rules regulate, for instance, the handling of electronic documents, how electronic communication may be carried out, and to what extent and on what grounds government may keep track of their activities by means of logging etc. The doctrine of sources of law and legal principles, moreover, are crucial in cases where government wishes to transform statutes and other legal sources into computer programs, in order to be able – wholly or partly – to automate application of the law. Development of ICT systems in government administration is in other words based to a large extent on law, and influenced by law, in a very direct and comprehensive manner.

This legal environment to which eGovernment is so tightly connected is of a dynamic nature. Thus, amendments of acts and regulations, as well as new judgements and administrative practices, represent sources of legal change which may create the need for corresponding changes in ICT systems. Some changes are easy and inexpensive to implement. However, eGovernment information systems are rather intricate and are therefore challenging to update pursuant to legal change. One important objective of developing eGovernment, moreover, is to improve interoperability between government agencies, implying that information systems are linked together and partly integrated, creating complex connections. Integration may imply that amendments in one piece of legislation entail the need to change interconnected information systems of other government agencies as well.[6] Viewed from an information system perspective, the dynamic nature of law is rather unpleasant and

6 This may be the case, for instance, if several agencies establish joint use of information based on the fact that a definition of concept is equal in two or more Acts. If definitions are changed by amendment or judgment, this may cause a rethinking in all agencies using that common piece of information.

expensive because it could potentially damage and even disintegrate beautifully designed systems and models.

eGovernment and development of information systems are influenced by law in two main ways. Firstly, law is the framework of information systems, that is to say, statutory law, judgements, etc. must be observed when information systems are planned, designed and realized. Such rules are relevant, but not necessarily subject to automation and transformation into programming code. Certain bodies of general legislation will almost always be relevant for the development of eGovernment information systems. The Public Administration Act (PAA), Personal Data Act (PDA), Freedom of Information Act (FIA), and Archives Act constitute comprehensive standard legal frameworks for every government activity involving exercise of government authority, including when facilitated by ICT.

Secondly, there will almost always be a comprehensive special statutory regulation concerning the government scheme in question (e.g., within tax and duties, social benefits, admission to public services, etc). Such rules regulate contents and procedures specific to each type of government decision in individual cases, for example on what conditions taxes and benefits are established, legally correct factual bases and processing of these facts, etc. These rules will typically be transformed wholly or partly into programming code and will be subject to automatic processing, cf. 2.3 (below).

2.2 Law as a Framework for Information Systems

Classification of law as a "framework" includes at least two observations. Firstly, it means that legislation contains boundaries that may not be transgressed. Secondly, it indicates a type of legislation which is difficult to transform and represent as programming code in the system. For instance, section 17 of the PAA regarding the administrative agency's duty to clarify cases, states that "the administrative agency shall ensure that the case is clarified as thoroughly as possible before any administrative decision is made." Such highly discretionary rules are not possible to transform into programming code[7] but may be substituted by a very high number of fixed rules.

The situation that "framework legislation" for eGovernment functions may not be subject to automation does not, however, imply that application of such legislation may not be subject to eGovernment *support* systems, that is, information systems designed for distribution of legal information and manual operation. Access rights of the PAA, DPA and FIA may for instance be supported by internet-based access request routines which present information regarding access rights and facilitate access requests.[8] If legislation alters the right to request access and makes it an obligation to make information *accessible* by ICT, it would, however, be possible to partly automate freedom of information laws too.

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7 At least not by means of standard programming languages and logic.

8 *See* for instance the public electronic government files system [offentlig elektronisk postjournal] ("www.oep.no/nettsted/fad") which gives access for everybody to search in and order government-held documents from a common, complete filing system with documents of central government agencies (ministries, directorates etc.).

2.3 Law as Contents of Information Systems

Special statutory regulations concerning each government agency's tasks and responsibilities, in contrast to the described framework legislation, are often quite easy to transform into programming code and make subject to automated application of the law.[9] Standard transformation approaches create a tension between the legal sources which are basis for the process on the one hand, and the formal representation of these sources (programming code) on the other. Transformation is dependent on the logical repertoire and expressiveness of standard programming languages. Thus in the course of transformation processes, the task is to understand legal rules in ways which may be expressed by means of programming languages. Deontic logic[10] and discretionary rules lie outside what such standard languages are capable of expressing, and therefore these rules must be either omitted[11] or transformed into similar rules which a standard programming language may express.

Other tensions between the legal sources and their representation in eGovernment systems are due to the imperfectness of many statutory texts. Statutes are written in "natural language" (as oppose to formal langue). When natural languages are used to express formal operations, for instance strictly mathematical and logical operations, it is difficult to express these operations in a 100% clear and unambiguous manner. Thus transformation processes will often reveal lack of stringency in the wording of statutory texts.

Lack of clarity concerning how formal operations shall be carried out will almost never have rational reasons. The intention of the lawmaker, for instance, is almost always to express calculations of taxes and benefits, etc. in an unambiguous way, and there are never, or very seldom, rational reasons leaving doubt as to whether or not conditions are cumulative or alternative. Stringency requirements also have effects for choice and variation of words and expression. In imaginative literature, linguistic variation and inventiveness is an important quality. By contrast, "statutory prose" requires consistency in the use of terms in order to avoid unnecessary problems of interpretation. Thus legislators should not vary terminology by using synonymous expressions such as "income", "earnings" and "earned income" in the same statutory text unless these words express different subject matters. Transformation processes reveal possible incidents of unmotivated linguistic variation and lead to standardization in the ICT system accordingly.

Both types of the mentioned tensions between legal sources and their formal representation in programming code may be starting points for discussions on the extent two which governments need methods and tools in order facilitate bridge-building between the legal and the ICT sides of eGovernment. Below I will address selected parts of this question.

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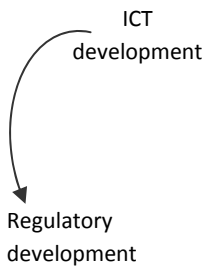
9 The dominating perspective of transformation of law in the eGovernment sector is characterized by a procedural approach using standard programming languages. More advanced approaches based on deontic logic and/or simulation of professional legal reasoning, donot play a significant role in current eGovernment systems.

10 *Cf.* "shall", "can", "ought to" etc.

11 And handled manually.

3 Development of ICT Systems and the Law

3.1 Introduction



It follows from the Instructions for Official Studies and Reports of the Norwegian government system, that administrative and economical consequences of, for example, novel/amended legislation should be investigated and clarified.[12] This obligation of committees of inquiry, etc. is not given much attention in the committees, and frequently these types of issues are superficially discussed on one page towards the end of very extensive reports. One of the reasons for this perfunctory treatment is obviously that the political subject matter is considered far more important than potential administrative consequences. This is also true in most cases of law reform within the eGovernment area, for instance when laws to be transformed into programming code are introduced or amended.

Members of expert committees are nominated because of their competence within the specific areas of policy/law, and not because they know much about administrative and technological consequences for eGovernment systems. Possible administrative effects are difficult to assess because methods and tools to carry out such assessments are lacking. Thus, predictions of possible effects are very uncertain. Thirdly and most importantly is the fact that the legal-political process and the budgetary-political process are separate processes. Effects of proposed legislation are often dependent on sufficient measures to implement the rules, while questions of acceptable appropriation are outside the legislative process. In other words, there is little incentive for participants in the legal process to try to specify the administrative and technological conditions, effects and appurtenant costs.

The Instructions for Official Studies and Reports do not have a specific eGovernment perspective. The general underlying assumption is simply that novel legislation may require additional or fewer staff members, reorganization, development of new routines and systems (including ICT-systems) , etc. If administrative consequences of proposed amended legislation regarding new or considerably changed ICT-systems were to be more than "guesstimates", much work on system requirement specification etc. would have to be part of the work carried out by committees of inquiry. However, as mentioned, such committees only scratch the surface of administrative, technological and economical challenges, with the result that legal aspects are by and large decided with little more than elementary and uncertain thought given to how they should be implemented in existing or new information systems and at what cost.

The fact that legal considerations come first while assessment of administrative and technological consequences and the like is neglected, entails the subsequent need for government administration to rethink the legal solutions once they reach the process of implementation by ICT. Thus, legal

12 *See* Utredningsinstruksen [Instructions for Official Studies and Reports] of 18 February 2000, amended 24 June 2005, section 2.1.3.

considerations are not exhausted merely because a piece of legislation passes; they continue as part of the development processes required to put the laws into force. There are, however, at least two very important differences between the first type of legal consideration and similar considerations as part of system development processes:

Committees and government departments proposing new/amended legislation have primarily a political perspective with special attention to principles and overall solutions in subject matters. Focus is on fair and balanced legal and political solutions in accordance with legal and political principles, etc. People working to implement passed legislation, by contrast, are motivated by an approach wherein detailed solutions and nooks and crannies in adopted legal provisions are scrutinized closely. Legislators are concerned with policy issues like "how can we treat live-in partners equally with spouses", while system developers are more occupied with questions like "do couples qualify as live-in partners if they temporary live separately because one of them is in prison?". Systems developers may experience their fate entails trying to tackle the open questions and "stupidities" left unaddressed by the legislators. Thus legislation may easily be seen as an obstacle to the "best" and rational ICT and organizational solutions.

3.2 Why can't Regulatory Development Follow ICT Requirements?

Law is often seen as a constraint in the development of information systems of electronic government, and the observation is apt, because law is often *indented* to be a constraint – not for the development of information systems in particular – but for exercise of government authority. One of the core qualities of the constitutional state is that the legislator is bound by their rules, entailing that they cannot change taxes or remove benefits without amending legislation. Most people would probably agree that the use of ICT-systems to implement such laws should not weaken this fundamental protection of citizens.

There are, however, different degrees of legal change, and even though everybody probably would agree that eGovernment projects should not be allowed to entirely repeal or introduce legal rules, disagreements may increase if we regard the various detailed sub-elements of binding regulations. Legal rules applied by government agency A, for instance, may rest on how the phrase "couples living together in marriage-like relationships" should be understood. Before introduction of eGovernment systems, for instance, legal custom and usage was to consider the question case-by-case. If government agency B possesses a database containing information regarding people recognized as "live-in partner" pursuant to a different part of legislation, it may seem obvious to systems developers that agency A should use information from agency B. Such changes will probably reduce costs and speed up case-processing. If the understanding of "couples living together in marriage-like relationships" and "live-in partner" is identical, there are probably no subject legal obstacles for A to access B's information. If, on the other hand, correlation between definitions is less than 60%, it is obvious that agency A should not be allowed to base decisions (only) on agency B's information.

But what if definitions were almost identical: 95 or even 98%? This may imply in concrete figures that 200 of 10 000 people would have the classification of their non-marital cohabitation changed, with possible direct consequences for their legal rights or duties. In other words, safeguarding the legal protection of 200 people could prevent the use of rather inexpensive technological solutions that would improve the processing of almost 10 000 cases. If the rights or duties of the 200 were to be changed through a statutory process, it would require time-consuming (and expensive) procedures of statutory amendment.

The point is that legal implications of new and more rational eGovernment systems may be comprehensive or minimal or everything in-between. Most of us will agree that total and considerable change of legal rules through design of eGovernment systems would be unacceptable, and that parliamentary procedures of amendments would have to apply. The more limited the desired changes in systems development is, in terms of number of people and individual effects, the less serious the changes are from a pragmatic perspective. However, in principal even unauthorized change with negative effects for *one* citizen would be inacceptable.

The next possible legal constraint in example of the live-in partner is the situation that – even though definitions are identical –agency B is prohibited from providing agency A access due to the statutory mandate of nondisclosure. These types of access constraints may be introduced for many reasons. In most cases privacy protection is the simple and obvious reason. Sometimes nondisclosure protects data quality because it is recognized that people would be more frank if access to information is limited. Restricted access may also be introduced at the time of enactment because it gilds the pill of a controversial reform because it restricts the knowledge and potential powers of a government agency. Some people may even think of themselves as the rightful "owners" of information pertaining to them, and would thus claim a right to be in control of how personal information is dispersed.[13]

Only the very naïve would expect legislation to be 100 % rational and defendable. Development of information systems may often reveal more or less obvious needs for amendments, with the aim for instance to introduce more effective ICT-procedures and cut time of procedure. Some needs of amendments identified in course of systems development collide with explicit political grounds as expressed in preparatory works of laws, in court decisions etc. Others exist unexplained or with only vague substantiation. The fact that explicit grounds are missing, should not necessarily be read as a confirmation that no such motivation exists. In many cases, however, it should expected that no single important political or legal consideration should determine one specific solution, and that another more efficient and equally fair solution may be chosen instead.

13 *See* Dag Wiese Schartum: *ICT, service policy and changed division of work between citizens and government: towards a distributed, user-monitored government?* Electronic communication law review 2002; 9(1):7-22.

Category	Conditions	Act no
Personal	More than 18 years old	1
Accommodation	Joint address	2
	Joint accommodation	4
	Living in the same house with less than four separate accommodations	3
	Temporarily apart	3
	Temporarily apart excluding imprisonment	2
Life together	Stable and established relationship as live-in partners	1
	Intention of continuing to live together	1
	Joint housekeeping	2
Duration	Of live-in partnership	1
	Of relationship similar to marriage or registered homosexual partnership	4
Children	Are parents to joint children	1, 3, 4
	Have been parents to joint children	3
Marriage etc	Have previously been married	3
	Marriage would have been legal	1, 2, 3, 4
	Registered homosexual partnership would have been legal	2, 4

Table 1: Definitional conditions of "live-in-partner" identified in four Norwegian laws.

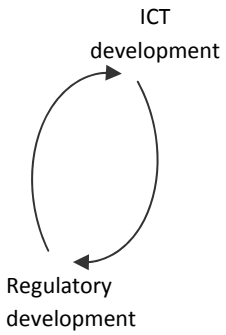
Examples from Norwegian laws defining couples living together in marriage-like relationships may illustrate the point (cf. table 1). The tables show various definitional elements of "live-in partner" pursuant to four Norwegian Acts of Parliament.[14] I have grouped elements under six categories to make comparison easier. Several of the elements are very similar, for instance "joint address" is very similar to "joint accommodation", and "temporarily apart" is very similar to "temporarily apart excluding imprisonment". The point here is not to claim that these differences lack rational grounds. It is very likely, however, given a situation where information systems may be improved, that many such definitional elements could be coordinated at very little or no political or legal cost.

The general point is that transformation of legal sources into programming code in information systems makes it impossible to accept transformation as a one-way process from law to ICT system. Without feedback processes legal bases would be accepted as it is. There are at least two reasons, however, why the legal basis often should be changed:

14 Act concerning the entry of foreign nationals into the Kingdom of Norway and their presence in the realm, Act on Norwegian nationality, The National Insurance Act, and Act concerning individual pension agreements.

a. Several elements of legislation are not or are only partly based on in-depth analyses and grounds, and are thus relatively open for amendment (definition 2 of "live-in-partner" may be just as acceptable as definition 1).

b. Even elements of legislation which are established on basis of solid analyses and grounds may be open for amendment provided sufficiently strong new arguments, e.g. regarding eGovernment needs.



Intended legal constraints as mentioned above are of category b. They are not untouchable, but may be politically controversial.

These potentials for change are related to what may be seen as weaknesses of the legislative process (cf. section 3.3 below), and the fact that detailed elements of legislation may be seen as accidental occurrences and intuitive solutions. When conditions like "joint address" are established, this may not always be a conclusion resting on an exhaustive list of alternative conditions. Similar conditions like "joint accommodation" or "joint accommodations as registered in the National Population Register" would probably not have been considered.

3.3 From Free-hand Rules to Law-drafting Tools

Traditionally, the process of drafting legislation has been a political process separate from the process of implementation. Sporadic proposals of "automation-friendly legislation" have been advanced since the mid-1970s.[15] In its most extreme version, automation-friendly laws were thought of as hybrids of traditional legal rules and programming statements, considered "brutal" and unacceptable by the legal-political system. Thus, respect for the political process and resistance against technology has absolutely prevented such changes of the legislative process.

In Norway, like in most other countries, there are currently no specialized ICT-tools to support the law-drafting processes. Moreover, only fragments of regulatory methodologies exist, meaning that legislation is by and large drafted "free-hand" with more or less experienced legal expertise.[16] It maybe claimed, in other words, that there is a general need to develop law-drafting tools in order to improve the regulatory process. Such tools may first and foremost contribute towards improving legislation expressed in natural language. At the same time law-drafting tools may prepare the ground for formalization and automation - but without representing automation-friendliness in the "brutal" sense mentioned above.

15 *See* e.g. Jon Bing: *Automatiseringsvennlig lovgivning*, I: Tidsskrift for rettsvitenskap 1977 (s 195-229).

16 *See* Dag Wiese Schartum: *IT-støtte for arbeid med lovsaker* [Regulatory work and ICT support], Complex 4/08, Norwegian Research Center for Computers and Law.

The objective of law-drafting tools should obviously be to improve the quality of legislation. There are various possible requirements regarding regulatory quality which will be too far-fetched to be discussed here. The primary objectives of developing law-drafting tools, however, are to:

i) reduce the effort of producing formally correct statutory texts;

ii) improve the quality of statutory defined concepts and increase the number of well defined legal concepts and phrases in order to facilitate correct transformation of legal rules to the computer programmes of information systems in eGovernment;

iii) avoid definitional differences (of data etc.) which lack political/legal grounds, and compile a library of well-defined legal concepts for the use of law-drafters, system developers and private service providers;

iv) strengthen openness and democratic participation in the regulatory process; and

v) improve the political control of the regulatory process from political initiative to implementation in information systems.

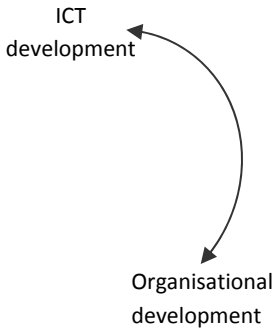
This represents, to a large extent, a proactive approach because bad drafting causes great and expensive difficulties for government bodies on the level of implementation. For example, if two laws have different definitions of "child support", without any rational reason for this, it will hinder automated exchange of related data and stop redesign of appurtenant routines. Differences based on political and other rational grounds, of course, should always be accepted.

Defined concepts and phrases may gradually accumulate into a library of well-defined concepts which may be used to draft future laws. Provisions regulating access rights to data, for instance, could be expressed with several standardized wordings in natural language, something which facilitates safe transformation to code in eGovernment systems.[17]

4 Reorganization and ICT in eGovernment

4.1 Reorganizing Processing of Individual Decisions

One of the definitions I refer to in section 1 emphasizes that eGovernment is about using ICT in public administration *combined with organizational changes*. These two elements are often interconnected to the degree that it is difficult (and sometimes not possible) to decide which element leads to the other. Here I will not discuss ICT and reorganization of eGovernment as such, but will instead concentrate on some important



17 The NRCCL develop a prototype ICT tool to support the regulatory processes (*Cf.* the project *Regelverkshjelpen* ("Regulatory Aid") in collaboration with the Norwegian Ministry of Justice and Police. The idea is to assist the whole process of drafting Acts of Parliament, regulations pursuant to Acts etc.

legal implications of new organizational possibilities and patterns of electronic government.

Core legal issues are linked to the execution of public authority, first and foremost in individual cases, that is, cases where computer programs are developed to automate application of the law. A high degree of automation makes it easier to move tasks from one organization to another, between departments of an organization etc. When the division of labour between man and machine changes and strongly reduces the number of manual operations, it is possible to alter required competence of people carrying out the remaining manual work. This is partly because the number of problem areas is reduced, and partly because it is possible to give sufficient problem-solving support by use of information systems. Most case processing of claims for benefit B has for instance been automated with standardized routines, except hard cases of type B(x) and B(y) which partly are handled by officers in charge. Required expertise by these officers may thus be linked to cases of types x and y, and these officers may receive guidance and support by use of a specially designed legal information system.

The organizational flexibility which often follows development of eGovernment systems make it possible to change division of work regarding individual decision-making by government agencies. Firstly, it may facilitate changes within the government sector, for example the transfer of tasks from one agency to another, merger of agencies[18] and establishment of common functions/services for several agencies.[19]

Equally important are possible changes between the government sector and the private business sector. Most important are businesses as potential suppliers of personal data[20] to the government sector, in particular the transfer of data as a basis for individual decisions by government agencies. Employers, banks, insurance companies, etc. are examples of businesses which collect and store personal data required by government agencies in the course of their decision-making. An important eGovernment strategy is thus to establish legal duties for businesses to collect, assure quality and export such data in prescribed machine-readable formats to one or several government agencies. In case, businesses are not formally made part of the machinery of government, but are made part of a government information infrastructure.

The high degree of automation and use of other types of computer support may further prepare the ground for businesses to operate as decision-makers in their own individual cases, without the effect that the relevant government agency loses control to any great extent. One Norwegian county, for instance,[21]

18 *Cf.* the merger of the Norwegian (former) National Insurance Administration, Labour Market Administration (both state level) and the Social Security Offices (local level) into Norwegian Labour and Welfare Organisation.

19 *Cf.* for instance the Internet service Altinn.no, which is a collaboration between 23 government agencies, containing coordinated collection of data from businesses and individuals through a common portal.

20 As well as business data.

21 The county of Sogn og fjordane.

has developed an information system for cases regarding grant of free legal advice.[22] Local law firms operate the system in types of cases which are defined by the system as easy, while the county administration decides in complex cases. Another example is the use by private businesses of the decision system adopted by the customs service, which gives access to self-declaration of goods traffic by forwarding agents, etc. Access to the system is conditioned by application to the customs authority, and granted access both creates a right and a duty to use the decision system.[23] It is important to distinguish between information systems like those mentioned here, where private businesses are directly linked to and users of decision-making systems of government administration, and other systems which merely give access to or communicate information.

Businesses that are direct users of government decision-systems for processing cases may be said to use "self-service" facilities, in the sense that they have to do the work themselves. The term "self-service", however, is first and foremost used to describe a division of work were citizens may access information, initiate individual cases regarding themselves and even process their own cases.[24] Self-service government implies in other words that citizens are left alone with their legal and other problems, and try to solve them by means of information and tools made available to them through government Internet sites.

Easy legal problems may be solved even though information and tools are poor, and it may not even be important to identify the question as legal.[25] Hard legal problems will probably not be solved securely in a self-service mode even with advanced information and tools: Information and tools on the Internet offer standard answers and performances, while hard legal problems have no standard solution.

Some would say that no self-service is the best service, and that it should be seen as a blessing for citizens to be "redundant" when individual cases are processed. If a sufficient number of businesses and government agencies could supply government agencies in charge of decision-making with correct information in machine-readable form, decisionscould be made automatically without the interference of each individual party in the case. If so, citizens may not even notice the decision-making process itself – only the effects.

I have pointed to some possible organizational models which may be facilitated by ICT. It is important, however, to see that no single model is adopted out of technological necessity and that a wide freedom of choice exists when we design future eGovernment. The different models also have different legal implications, and such possible consequences will of course have an

22 *Cf.* regulation regarding free legal aid of 12 December 2005 nb.1443, chapter 3.

23 *Cf.* regulation regarding customs of 17 December 2008 nb.1502, section 4-13.

24 *Cf.* St.meld. nr. 17 (2006-2007) Eit informasjonssamfunn for alle [White paper concerning "information society for everybody"), section 7.3.1, action 1.

25 The question as to whether or not oned should "support a child under the age of 18 years" is in most cases obvious and does not create any need to check legal sources. A lot of difficult legal questions, however, may arise in the semantic currency grid of such expressions.

impact on how we create combinations of ICT and organizational models. Here I will only discuss two central legal implications. Individual autonomy and self-control are key words.

4.2 Reorganizing Processing of Individual Cases and the Role of Parties

During the last fifty years or more, our government sector has been based on the idea that citizens are autonomous and active parties to their own cases. Thus legislation such as the Public Administration Act (PAA), Personal Data Act (PDA) and Freedom of Information Act (FIA) has the protection of legal rights for individuals as its main policy instrument. Right to be notified, access rights, right to be informed and confront the accuser, right to lodge complaints and right to receive grounds for decisions are important examples of legislation based on the active role of parties to cases and other citizens. Self-service government may be seen as a reflection of this approach because the underlying assumption is that of active citizens.

Prevailing self-service eGovernment, however, is not first and foremost about assisting people in the execution of their rights. On the contrary, these types of general legal rules are only to very limited degree made part of eGovernment systems, cf. section 2.2 (above). Self-servicing in existing Norwegian eGovernment systems is primarily about getting citizens to carry out basic administrative work leading up to individual decisions: It is only marginally about reinforcing citizens' abilities to identify and pursue their legal rights.

eGovernment seems in general to overestimate service aspects ("we are here for you") while at the same time it underestimates aspects of authority and citizens' possible role of being subjugated ("we decide and you obey").[26] eGovernment is of course not delimited to the "nice" parts of government, and in the not-so-nice parts, possible ICT support for the execution of legal rights would of course be important, but is rarely at the disposal of citizens.

If the goal is to prolong and develop the traditional idea of the legally active and autonomous citizen, future self-service eGovernment should, in other words, have more focus on possibilities of conflicts between government and citizens. In this case, ICT-based information and tools to perform legal rights should be one of the core priority areas.

Self-service eGovernment must, of course, live up to general principles of administrative law, which implies that processing of individual cases must be properly executed (cf. principle pertaining to proper processing of cases). The majority of legislation relating to public administration is comprehensive and complex, entailing that proper, self-service processing of cases is very challenging. ICT solutions of self-service government have to enable citizens to carry out their part of case processing in a legally proper way. Given the complex nature of administrative law, such a requirement would in many cases be difficult and even impossible to live up to.

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26 *See*, Dag Wiese Schartum: *ICT, service policy and changed division of work between citizens and government. Towards a distributed, user-monitored government?* Electronic communication law review 2002;9(1):7-22.

Requiring proper legal processing of individual cases would make it unacceptable to develop information systems solely relying on citizens to solve hard legal problems alone. Hard legal problems may here, for the sake of simplicity, be defined as i) problems which have direct influence on legal rights and duties and ii) areas associated with justifiable doubt as to how a legal problem should be comprehended and solved. It follows that the question of whether or not a legal problem is hard, relies to a large extent on each individual case. How hard it is to understand a legal provision will depend on how adequate and precise the wording is when compared to the facts of the specific case.[27] This general observation is even true if a party's contribution to a case is very limited: The decision concerning whether or not you "support children under the age of 18", may be hard to make if your teenager is on a trip around the world mainly at her parents expense.[28] Misconception of one detail concerning the understanding of a legal phrase ("support children ...") may of course lead to incorrect decisions, even if 95% of the regulation in question is easy to understand.

It follows from the assumption that distinctions between hard and easy cases may be made first and foremost in individual cases, that information systems and other remedies necessary to solve hard problems should be available to any user. Access to individual communication with experts who can help solve individual problems should be included among other remedies. I assume, in other words, that proper legal processing of individual cases entirely based on self-service will be impossible. Realization of legally acceptable self-service decision-making procedures therefore point in the direction of advanced legal information systems at the disposal of citizens. The more citizens such systems are able to support, the less demand for manual assistance there will be.

Advanced legal information systems and possible access to direct expert contact should not only be a requirement in case of self-service solutions. The contrary model, where every piece of information in individual cases is collected from others than the party of the case, and with subsequent automatic case-processing, would probably require similar solutions: ICT may be used to totally exclude parties to cases from the decision-making process, or at least reduce their role to a minimum.[29] In this event, it would mean a shift of government paradigm. The very concept of constitutional government is built on the idea of basically free and autonomous citizens. Self-determination presupposes involvement and opportunity to act in pursuit of one's own interests. Thus, a government reform which removes such opportunities or dramatically reduces them creates tensions between these basic concepts. The exercise of governmental power in individual cases without significant involvement from the relevant parties is hardly an acceptable model for the division of work in future eGovernment.

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27 Incidents of analogue application of a provision will in other words typically imply a difficult legal problem.

28 However in the great majority of cases the requirement for "child support" is so easy to conclude that it is thought of as a simple factual consideration rather than a legal question.

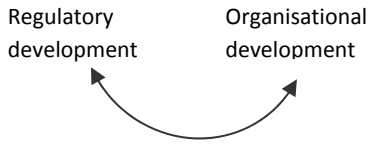
29 The ICT-based taxation routines of individual taxes are one core example of such a decision-making process.

The insistance on a role for parties in cases in future eGovernment decision-making processes does not imply that parties' role must remain unchanged. The role of citizens today is largely to carry out preliminary work which previously was handled by officers in charge. Parties to cases could alternatively be involved in review of legality after a decision is reached, or preferably when a *proposed* decision is made available. If so, it is obvious that they need advanced legal information systems which can enable citizens to check legality. Such systems should even support the exercise of statutory legal rights (lodge complaints, receive grounds for decisions etc.). Instead of creating a scene for participation by parties similar to first instance case-processing, it will be possible, in other words, to create a scene similar to a body of appeal.[30]

5 Organizational Development and the Law

5.1 Exceeding Hierarchies

In section 4 I discussed some legal implications of two main models of how ICT and reorganization may be combined. The issue in this section concerns more direct links between reorganization and legal development. Discussions, in other words, are directed towards change processes related to organization and law. These discussions have their origin, to a large extent, in the development of information systems, and electronic government is, in any case, merely a backdrop.



In Norway, organizational power is normally a prerogative of the government. Parliament as legislator, however, may pass bills with organizational elements, and history has witnessed acts containing provisions regarding the number and placement of local offices of state agencies. It is also customary that the legislator establishes new government agencies with particular responsibilities. The DPA has, for instance, a statutory basis for the existence of the Data inspectorate.[31]

Main legal regime for organizational powers of government is built on a hierarchical logic, with King in Council at the top,[32] and with ministries, directorates and perhaps local offices of central government as subordinated bodies. Supervisory authorities and ombudsman agencies add to this picture and constitute more or less independent government bodies or bodies placed directly under Parliament. Unwritten rules regarding exercise of powers exists within

30 A problem of course is that a relatively high number of parties to cases are not able or willing to become involved in the processing and legality control of their cases – regardless of how advanced support information systems are. This is a general problem, however, not only linked to the sketch of a possible redefinition of the role of parties to cases, and may not be an argument against the idea as such.

31 *See* DPA section 42.

32 I.e. the government as collegiate body.

this organizational framework. Key words are, for instance, rules regarding instruction and delegation, and principles regarding exercise of powers in personnel, procedures and subject matter.

eGovernment in Norway may be partly characterized by a need to overreach and modify existing hierarchal structures. Firstly, current eGovernment efforts are to a large extent geared towards improving interaction and interoperability between the various separate hierarchal lines (typically under different ministries). Interoperability between various branches of government is encouraged and realized through design of inter-organizational information systems, informational infrastructures etc. These types of changes may obviously require modification of hierarchal structures and changes in the use of existing hierarchies. Bodies subordinated under different ministries must, for instance, be capable of establishing common decision-making structures replacing strict hierarchal procedures. Tasks and responsibilities may alternatively shift from one branch of government to another. It follows from the legal understanding of organizational powers that such changes require formal decisions; they are not something management of eGovernment projects can simply do because serviceability is in place.

Developments of eGovernment solutions also create needs to overreach and modify hierarchal structures because government agencies lack technological and other required competencies and capacities required in the change processes. This is in particular evident with regard to technological development, but is probably also true with regard to organizational and regulatory development. To the extent government agencies have competent people; their capacity will nonetheless often be insufficient in situations of comprehensive and complex eGovernment development projects. It follows that the government sector frequently has to *outsource* tasks. A government agency with decision-power will, in other words, have to collaborate with private businesses without such powers. Instead of controlling work processes internally by means of delegation, instruction and control, the government agency will have to collaborate and control the process through agreements. In this event, a major legal demand is that the private business (as engaged party) shall not be elevated to the position of *de facto* executor of government decision-making authority. Viewed from the other side, the government agency must (as principal) be in full control of the results of activities of the engaged party to the extent that these activities have impact on decisions in individual cases. The organization of the outsourced work should, in other words, ensure that legal and political responsibilities regarding execution of government powers, remain with the government. Responsible government bodies should be in position to prevent engaged consulting companies from performing erroneous programming that results in incorrect individual government decisions when the system is subsequently put into regular use.

Both mentioned needs of overreaching and modifying hierarchal structures require novel organizational and contractual solutions. Needs may be met project by project, but in my view it is a requirement that a standard toolbox is developed to solve typical problems. As far as I can see, no unbridgeable legal

obstacle exists for interoperability and outsourcing in the government field, but legal solutions are currently lacking, insufficient or premature.

5.2 Pushing Legal Organizational Concepts to the Limit

Organizational elements are sometimes under statutory regulation, meaning that eGovernment organizational arrangements are bound by legislation. Governments may of course propose amendments to the Parliament, but this procedure is obviously much more cumbersome and time-consuming than situations where basic organizational powers suffice.

Data protection legislation, including information security regulations contains important organizational conditions and requirements. At the core of this legislation is the identification of certain participants and roles each participant must play. The role as "controller" is essential and pursuant to the DPA and appurtenant regulations, each controller should have persons with day-to-day responsibility for fulfilling the obligations of the controller, security management and security audit.[33] This regime does not determine exactly how eGovernment systems should be organized, but establishes certain organizational frameworks and requirements which must be observed. The bottom-line is that a legally responsible organization must exist and, more importantly, it follows that confusion pertaining to responsibility in the processing of personal data will be deemed illegal.[34]

Although not explicitly expressed in the DPA, the legal regulation of how processing of personal data should be organized provides room for shared responsibility. If several local governments wish to establish common operation of certain personal data, this could be accepted provided the organizational solution does not endanger compliance with the DPA. A great variety of shared controller arrangements are accepted in practice. We may see this as sign of a flexible regulation. The flexibility, however, was not put in place intentionally, but it expresses the situation at the time before the directive was decided (1995) and the subsequent technological development. The normal situation before 1995 was that information systems clearly belonged to one specific organization. Indeed, the Data Protection Directive[35] opens up for a certain collaboration between several controllers (cf. "alone or jointly with others" in the definition of "controller"). However this was only introduced by the European Parliament before the adoption of the Directive.[36] The definition was mainly formulated on the basis of one controller, and collaboration between controllers was expected to be simple and based on equal relations. The many kinds of "pluralistic control" which may exist today were not foreseen.

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33 *Cf.* Data Protection Act section 32 and Personal Data Regulations sections 2-3 and 2-5.

34 In the sense that those involved in the processing are obliged to clarify the question.

35 Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data.

36 *See* Article 29 Data Protection Working Party, 00264/10/EN, WP 169, Opinion 1/2010 on the concepts of "controller" and "processor", adopted 16 February 2010, section III.1.d.

Today, various architectures of inter-institutional systems and other types of close ICT collaboration between local governments have been much more frequent, and push the definition of "controller" to the limit.[37] Organizational innovation regarding how ICT-systems in government sector should be developed and managed, has pushed the legal regulation of controllers, and made it necessary to admit many other organizational arrangements than originally thought of.[38] One rather simple legal organizational model has, in other words, dissolved into a great variety of possible organizational patterns. Or as Article 29 Data Protection Working Party expresses it: "a broad variety of typologies for joint control should be considered and their legal consequences assessed, allowing some flexibility in order to cater for the increasing complexity of current data processing reality."

The described variety of controller constructions makes it very difficult to draft detailed legislation in advance and points in the direction of a changed regulatory strategy. Within eGovernment there are at least two strategies that may be of particular interest. Firstly, eGovernment systems are almost always closely connected to specialized legislation, that is, it will almost always be possible to place organizational elements of a regulation as part of such legislation, for instance by explicitly deciding how the controller function should be organized. Secondly, and in accordance to recommendation of the Article 29 Data Protection Working Party, the question of controller responsibility could be a matter of agreement, for example between various collaborating government agencies.

Such specific resolutions of organizational questions, established in specialized legislation or/and agreements, are prerequisites for the triangular perspective in the development of eGovernment systems as argued in this article: It is of course impossible to amend the DPA each time various government agencies change the way their processing of personal data is organized. Use of specialized legislation and agreements makes it much easier to consider relevant technological, organizational and juridical aspects in conjunction with one another and regulate accordingly.

37 The wording of the Norwegian DPA does not contain the alternative "alone or jointly with others". The question is indeed discussed in the preparatory works of the act (Ot.prp. nr. 92 (1998-99) Om lov om behandling av personopplysninger (personopplysningsloven)), but is limited to a situation where a subordinated government agency may be said to act as controller together with a superior authority (e.g. ministry). A commentated edition to the DPA (Wiik Johansen et al, *Personopplysningsloven*. Kommentarutgave, Oslo 2001) does not discuss if several controllers may collaborate.

38 A thorough discussion of "controller" is found in Article 29 Data Protection Working Party, 00264/10/EN, WP 169, Opinion 1/2010 on the concepts of of "controller" and "processor", adopted 16 February 2010.

6 Conclusion

I have argued in favour of an integrated approach to development of eGovernment systems where development of ICT systems, organizational development and regulatory development are seen as equally necessary and important. The three change processes may not be seen as separate from each other without Government running the risk of seriously deviating from fundamental ideas and principles of our legal system.

A survey from 2009 among lawyers in Norwegian Government administration showed that as many as 55.1 % of the respondents disagreed with a statement saying legal questions related to government use of ICT received sufficient attention. Only 11.4 % agreed. The survey also documented that a clear majority of the respondents confirmed a high number of unsolved basic legal questions within eGovernment.[39]

It is appropriate to ask who should feel responsible for safeguarding legal ideas and principles of our legal system when governments are transformed by ICT? The answer is of course the lawyers themselves. I have argued that a core task is to develop regulations in accordance with the development of information systems and organizations. However, integrated change processes will not become reality merely on the basis of good intentions. Presumably nothing much will happen unless people with primary legal responsibilities adapt to a methodological approach similar to that of computer scientists. The challenge is threefold. First, lawyers must develop adequate methods for the design of logically and linguistically consistent laws, i.e. laws which contain as little ungrounded ambiguity as possible. Ambiguity and discretion should, as far as possible, always be intended from political, juridical or other rational reasons. Secondly, these methods should prepare the ground for communication and collaboration with computer scientists and system designers. Legally based methods should thus probably be developed in conjunction with or inspired by system development methods. Thirdly, ICT tools are needed to support the application of legally grounded methods and to ensure proper safeguarding of legal, technological and organizational aspects.

39 *See* Dag Wiese Schartum: *Kunnskapsbehov om juridiske spørsmål i elektronisk forvaltning. Resultater fra en spørreundersøkelse blant ansatte i offentlig forvaltning*, Norwegian Research Center for Computers and Law, Complex 5/10.