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"IT'S THE ECONOMY STUPID"

- WHY THE SWEDISH E-GOVERNMENT ACTION PLAN WILL NOT DELIVER BETTER GOVERNMENT, AND HOW IT COULD

ÅKE GRÖNLUND
Swedish Business School
Örebro University
ake.gronlund@oru.se

Abstract

The Swedish 2008 Government's Action Plan on eGovernment offers old wine (focussed on technology rather than on services; production-centred rather than needs-based) in old bottles (closed political systems rather than open infrastructure; no measurements and, consequently, no incentives for government agencies to change). This paper analyzes the Plan based on an Enterprise Architecture integration perspective, shows why the proposed measures are not productive, and suggests an alternative route to remedy the shortcomings. The fundamental underpinning idea is that an open infrastructure should replace one negotiated in a piecemeal manner by the largest stakeholders. The paper proposes an open information infrastructure model to replace the one based on politics and negotiations suggested in the Plan. Within the Swedish government model such an infrastructure has to be placed under the jurisdiction of a dedicated agency.

Keywords: eGovernment action plan, electronic government, convergence, enterprise architecture, information infrastructure

1. Introduction – the need for change

On January 24th, 2008, the Swedish government presented a new Action Plan for eGovernment (henceforth "the Plan"). The purpose of the Plan is to "increase coordination of the strategic eGovernment work in the Cabinet Office" [Regeringen, 2008, p 4] and the promise is, "eGovernment has been investigated numerous times – it is now time to move from talk to action" (ibid, p 3).

The work with Sweden's eGovernment development has, since the start in 1995 with the "Top Leaders' Forum" (following the EU "Bangemann Challenge" and the Clinton/Gore "Reinventing government" initiatives), been a matter of weak central regulation and coordination. Electronic government implementation has been left to individual authorities. The reason behind this decentralized approach is to be found in Swedish history which includes independent authorities and weak central power. The national government is legally prohibited from any detailed regulation of authorities. This means that legislation affecting eGovernment, such as privacy, can be enforced by national government while matters involved with administrative rationalization and service quality fall into the domain of the individual authorities. Central government control is exerted by annual appropriation directives and annual reports from the government agencies [Pierre, 2004; Molander et al., 2004]. In this mix of responsibilities, important sections of the infrastructure remain in a void because individual agencies have no interest in investing in national information infrastructure if there are no visible benefits to their own budgets. The National Council for Quality

and Development found that "Managing for results has largely focused on maximising the performance of the operations of each individual agency without linking this clearly to effects from a holistic perspective" [NCQD, 2004, p 77].

The start this pronounced management-by-results method dates back to a Parliament Bill of 1988 (Swedish Parliament, 1988) which was generally based on a New Public Management philosophy and whose aim was to make government more efficient by means of deregulation and the removal of constraints on managerial freedom [Modell, et al., 2007]. In the Bill, "efficiency and financial probity were seen as the key concerns of performance management" [Modell et al., 2007]. Evaluations have also shown that the appropriation directives have focused more on outputs and efficiency and less on outcomes and effectiveness [Modell et al., 2007].

A realization of this problematic situation and the reasons behind it, has caused the government to formulate a new action plan. The motivation behind this are based on the fact that "the 24-hour strategy [the previous plan, author's comment] which drew on delegation of IT issues to the department directors has led to that common corporate issues have been neglected[12]". Against this backdrop the government now wants to take a whole-system, "corporate", perspective and has centralized control over the development, as guided by the new plan, to a new body, the eDelegation.

This paper analyzes the new government plan from the perspective of eGovernment research and practice. Starting from the background described above in which department budgets, not national goals, have been considered to be the prime measure of success, we ask how the integrational goals of the Government can be fulfilled. In discussing this issue we, in particular, refer to the current international debate with regards to how to achieve national, "corporate", systems for coordination and interoperability across the entire government. This is commonly referred to as "Enterprise Architectures" (EA), but other terms are also used. The basic idea behind EA is to create a national infrastructure encompassing not merely technology but also – and more importantly – data and processes. This is then to be implemented in a stepwise manner by individual agencies under a national coordination agenda, whose purpose is, over time, to achieve an increasingly uniform infrastructure, which is then more amenable to the introduction of new services, changes in government organization, and generally more flexible in allowing low entry costs for new service producers.

This paper is organized as follows. Firstly, we present the Enterprise Architecture concept, including the rationale behind it and some international examples. Next we briefly review the critizism that the Plan has received from its stakeholders – because the systematic errors in the Swedish eGovernment strategic management have been apparent for many years, and analysts and stakeholders have already highlighted many of the problems. We then summarize the EA perspective and the decentralized Swedish apporach by means of two ideal-type models – "Information Infrastructure" and "Cooperating Agencies" respectively. These models then serve as the basis on which we analyze the major ingredients of the Plan. We conclude by proposing an alternative model which could be used in order to increase the probability that the Plan will achieve its goals and thus result in a comprehensive, "corporate" information infrastructure following the lines of the EA approach.

[1] http://www.regeringen.se/sb/d/10044/a/111315
[2] All translations from Swedish are by the author.

2. Enterprise architectures and government integration

During the previous 20 years, governments have been concerned with developing an open ICT (Information and Communication Technology) infrastructure in which the aim has been to avoid the incompatibilities caused by proprietary software. The advent of the Internet and the ensuing problems associated with attempts to integrate government by "electronic government" have meant that these concerns have been further highlighted. The result of this is that several tools now exist for achieving interoperability and convergence of technology as well as business processes, typically labelled interoperability frameworks or enterprise architectures. Guijarro [2007] lists and examines a number of efforts in this domain. This includes similar national strategies which have been developed in the majority of OECD (Organisation for Economic Co-operation and Development) countries. These all drew on EU and OECD framework policies, one of which concerned interoperability [CEC, 2002; OECD, 2003]. While these strategies marked the start of the eGovernment era, several specified frameworks for interoperability and which are labeled as Enterprise Architectures have been developed and are presently in existence, including those in he UK, USA, Germany and Denmark. In addition there are companies who are working with governments and eGovernment, such as the Integrated Architecture Framework, by CapGemini Ernst and Young [MSDN, 2004].

Enterprise Architecture is generally defined as "the organizing logic for business processes and IT infrastructure reflecting the integration and standardization requirements of the firm's operating model" [Weill, 2007]. It is not only a definition of a state but is also a process of integration; "Enterprise architecture aims at aligning the business processes and goals of an enterprise and the applications and systems that constitute its technical infrastructure" [Guijarro, 2007]. The EA concept hence refers to a comprehensive view of the enterprise including not only technical interoperability but also the alignment of procedures and data definitions. This concept emanates from the private sector but has migrated into the public sectors during the past few years.

The most developed government sector EA is arguably that of the US Federal Enterprise Architecture (FEA), which may serve as a general illustration of the concept. It encompasses "a business-based framework for cross-agency, government-wide improvement" [CIOC, 2001] which consists of five reference models for defining, respectively, business, performance, data, service components, and technical reference. To complement the reference models it contains tools for the evaluation of progress, and is viewed by its creators as being a tool to assist in the process of convergence rather than a prescription for a quick fix. Guajirro's review of national EAs suggest that "the FEA shows the highest degree of maturity among the e-government initiatives under study, since the OMB[3] and the CIOC[4] have not only committed themselves with enterprise architecture, but they have also defined the models to be used by the government departments and *required the adoption of the models as a condition for budget approval. Therefore, the chances of success in removing the organizational barriers for interoperability are high*." [Guajirro, 2007; author's emphasis].

For implementation in a decentralized system the italicized sentences in the above quote are the most important. They contain three important key words, budget,

[3] (US) Office of Management and Budget
[4] (US) Chief Information Officers Council

condition, and organizational barriers. This could be stated as, no conformance to the EA models, no money provided to projects. When comparisons are made of the Swedish plan to the EA model (using the FEA as example) we find that it draws on very different mechanisms (Table 1).

Table 1: The Swedish Plan compared to the Enterprise Architecture model.

	EA model	**Swedish Plan**
Financing	Local or national; Conformance to EA specifications required	At each department. No central regulation. The Plan prioritizes a charting of ICT costs to be done (by department) so as to better understand spending.
Decisions on ICT investment	Conformance to EA specifications required	Each department. Consensus among Directors-Generals is sought to achieve coordination
Business alignment	National model defined. Measures and assessment instrument available	Individual agencies define their own processes. Regulated by annual budget; no detailed specifications
Performance measures	National model defined. Measures and assessment instrument available	Appropriation directives, individual for each department
Data definitions	National model defined. Measures and assessment instrument available	The Plan mentions only IT, not data.
Service component definition	National model defined. Measures and assessment instrument available	The aim, not detailed, is to persuade departments who own data bases to develop services that other departments can use. Departments are designated as "responsible" for the process of arriving at joint definitions of targeted services including secure communication, workflow system, procurement, "concentrated handling of administration", searchable reports.
Technical reference	National model defined. Measures and assessment instrument available	"The possibility to set up an office for coordination of IT standardization should be considered" (p 12) "The basis should be sectoral cooperation" (p 13)

From the comparison in Table 1 the Plan appears to be rather soft on national coordination and focusing on technical integration and leaves the organizational and service issues to individual departments. This is in agreement with the Swedish tradition but in disagreement with EA thinking. To somewhat offset the negative comparison, it should be mentioned that one technical reference model, in the health sector, has indeed been developed (before the Plan) in cooperation with the stakeholders [MOHSA, 2006]. This was conducted in response to an EU directive regarding patient mobility, and the plan has not yet been implemented. Implementation is voluntary for each care provider (the 20 regions).

The strategic model underpinning the Plan is "cooperating agencies". It has three major pillars; (1) All investement is to be made by departments and coordination will be encouraged by (2) removing legal obstacles and (3) creating a coordinating body, the e-Delegation, which is comprised of Directors-General (DG) from the largest departments. In this group consensus will be reached concerning the necessary actions, which the DGs will then implement individually in their respective departments.

2.1. Views from stakeholders and observers

Criticism from stakeholders is greatly concerned with the issues raised by the above comparison with the EA model. Berg [2008] airs skepticism regarding the *strong IT focus*, "Does Mats Odell's [the Minister] Head Office see Sweden's largest-ever business reorganization project as – an IT project??? [….] The toughest challenge is to *make the organization work with the new processes* and supporting systems. Many project leaders have underestimated the sluggishness in changing people's behaviour". The editorial in Sweden's main IT daily, Computer Sweden, adds that one of the main problems is that the Plan "not in any place touches upon *financing*. Because if the Action Plan is to have the slimmest chance the responsible ministers must set aside considerable amounts, alternatively be prepared to add detailed *regulation* to the organizations' budgets".[CS, 2008]. An alternative method is proposed by Jerräng [2008] who suggests whip rather than more pocket money; authorities should be required to meet national goals. "It would be useful to put some pressure on the authorities, there is a need for *clear goals and directives*. The effects of previous action plans have been fairly limited" (italics by the author).

These concerns are fuelled by a recent investigation by Verva, on December 31, 2008, regarding the closed national body for eGovernment control and advice (since March 2009 replaced by the eDelegation in the Cabinet Office). In March 2008, Verva was appointed by the government to investigate and analyze the efforts and results of governmental organizations with reference to strategic eGovernment development. This work [Verva, 2008] investigated 69 government bodies and reported in November 2008. The main points of the report are the following.

No measures: "[….] there is a lack of indicators for measuring the benfit of the eGovernment development. In relation to what, and when, should benefits be measured? To be able to measure, and above all compare, the benefits different authorities' produce to citizens and businesses there is a need for common goals and measurement methods" (p 11). Clearly measurements of citizen benefits are not straightforward. There is a long-standing academic debate on the topic (e.g. [Lau, 2006; Behn, 2006]) suggesting different kinds of measures including both government and non-government stakeholders. There are also models developed for practical use, such as the EU eGEP model [eGEP 2006; 2006a] which developed measures designed to fit exactly with the EU definition of eGovernment (valid also in Sweden). There are also methods for "benefits management" [Lin et al., 2007; Päivärinta et al., 2007] which promise if not exact measures so at least ways of connecting evaluation to implementation by forcing organizations to state project goals clearly beforehand and follow up on the same goals after, which at least should serve to make goal definitions more realistic. Verva calls for a national plan with goals, priorities and indicators for the authorities' work. "Such a plan would clarify the government's expectations on the autorities eGovernment development and make it possible to, over time, evaluate and compare authorities' work." (p 11)

Internal focus: "Internal benefits concerning efficiency and staff perspectives were overall rated higher than the efforts' external benefits, i.e. for citizens and businesses. This internal focus can be an expression of the authorities' view of what eGovernment development the Government will reward or wishes to see" (p 11).

Structural obstacles: The Plan includes a reform of legislation aimed at making data more easily accessible across stovepipes and to define authorities' responsibilities

and action space in a better manner, but Verva goes further to claim the need for several elements of what is in effect an EA; "[there is a need for] a national public service catalogue, definitions of general/shared administrative terms, transmission formats for information, models of information and concepts, as well as constitutional issues" (p 12).

Stimulation: "Authorities may need support to identify coordination benefits in their work. There may also be a need to handle initial change costs". (p 12) Here, Verva points to a major problem of the Swedish decentralized model discussed in the Introduction; the lack of incentives at the departmental level to achieve whole-system benefits.

Convergence process: "Clearer cooperation within and across sectors is necessary to identify important areas for standardization" (p 12). This remark points out something that t should be obvious, namely that standardization is not something that can merely be enforced, it is a field in development. Too much and/or premature standardization is as dangerous as too little, the trick is to maintain parity with the international development so that standards are incorporated as they become feasible in order to drive the development. There is insight on this point in the Standardization Investigation report [ITS, 2007], which is one of the inputs to the Plan, but as there is only a limited amount of time remaining before the 2010 deadline set by the EU i2010 Directive [EU, 2008], there is a risk of either producing hasty and immature decisions or no decisions at all. This issue, again, is one that is contained in an Enterprise Architecture approach focusing on long-term consistent development. Instead the current Plan replaces EA with SOA (Service-Oriented Architecture) which is a technical architecture, dealing with technical interoperability of service components, not organizational development. A SOA can certainly be very useful, but in the perspective outlined by the Verva report it is a quick fix that adresses some issues but does not deal with the important problems pointed to by Verva. These are measurements, citizen and business orientation, reorganization and incentivization required in order to make individual agencies work to address whole-system goals. EAs are designed to deal with these aspects of , organizational integration. SOAs are rather designed to *avoid* organizational integration, in situations when no corporate perspective is involved, for example when different private companies want to be able to use service components from each other, such as payment systems. It should be noted that SOA and EA are not mutually exclusive; it is merely that an EA has a wider scope. An SOA can (but does not have to) be contained within an EA.

IT costs must be defined. The Plan pays attention to reducing IT costs. However, Verva found that "authorities must estimate IT costs in similar ways so as to be able to estimate benefits and identify needs for development". Estimating IT costs is very difficult, in particular when they form part of a reorganization effort. Many costs are not directly associated with IT but are involved with the reorganization [Lau, 2006; Behn, 2006]. It is also useful to distinguish between infrastructural costs and costs pertaining to services in order to make decisions with regards to achieving the best balance between national efforts and those of individual agencies.
Clearly processes for convergence must be put in place, and the Plan suggests a number of activities to that end. Table 2 maps Verva's assesments against the EA model and the Swedish Plan.

Table 2: Verva's assessment of the current state of the art mapped against the EA model and the Swedish Plan.

	Verva's assessment	**EA model**	**Swedish Plan**
Financing	"Stimulation" necessary	Conformance to EA specifications required	No stimulation mentioned
	IT costs must be defined		At each department. The Plan prioritizes a charting of IT costs to be done (by department)
Measurements	"Lack of indicators" National model should be defined	National models defined for both technical, organizational and corporate factors (processes, objectives) , measures and assessment instrument available	No measures specified
Focus	"Too internal"	National models defined, including internal and external benefits measures and assessment instruments	No performance measures specified, neither national nor customer-focused. Legal obstacles for cooperation will be removed. IT security will be highlighted
Information infrastructure	Strucutral obstacles are identified. Elements of a national EA are proposed	Conformance to EA specifications required	Cooperation islands are envisioned, in which departments are designated as "responsible" for the process of arriving at (sectoral) joint definitions of targeted services including secure communication, workflow system, procurement, "concentrated handling of administration", searchable reports.
Convergence process	Clearer cooperation within and across sectors is necessary	Conformance to EA specifications required	Cooperation islands envisioned, as of above.
	Service component definition	National model defined. Measures and assessment instrument available	The aim is to persuade departments who own data bases to develop services other departments can use. Departments are designated as "responsible" for the process of arriving at joint definitions of targeted services including secure communication, workflow system, procurement, "concentrated handling of administration", searchable reports.
	Technical reference	National model defined. Measures and assessment instrument available	"The possibility to set up an office for coordination of IT standardization should be considered" (p 12) "The basis should be sectoral cooperation" (p 13)

As the table shows, Verva's points are in close agreement with the EA model whereas the Plan does not take strong action on several of Verva's proposals. It is notably that even proposed actions are sometimes stated rather vaguely; "The *possibility* to set up an office for coordination of IT standardization *should* be *considered*" (p 12, author's emphasis). In the following we shall present the prioritized actions of the Plan and comment on them from a convergence perspective.

In the area of "Coordination of IT standardization" priorities include the following.

> (1) "Set up an office for coordination of IT standardization and a national framework for interoperability (Responsible: Ministry of Finance). Set up sectorial offices for interoperability (Responsible: all ministeries)" (p 13)

This is a good idea, supported by good practice in other countries, but there is a question mark regarding why "IT" standardization? The major problem in the Swedish public sector is not the IT but the stovepiped operations. The reason that, for example, most health care providers are now in possession of different, incompatible, patient record systems is not that they could not be made compatible but that there has been no interest in making them compatible. This could be achieved by enforcing national standards at the time of procurement, or afterwards, as is the case now, by implementing a clearinghouse service run by a third party to interconnect existing, incompatible systems. While it is not a good idea to enforce standards at a time of instability, it is always useful to strive for interoperability. One of the aspects that an EA can do even when there is lack of agreed technical standards is to make sure that data definitions are compatible. If this is not the case then, at a later stage, IT standards will be meaningless or hard to implement – it is meaningless to exchange data that cannot be compared. Therefore it is important to see the national eGovernment project not as an IT standardization but as an organizational convergence project. An Enterprise Architecture is a good tool for this purpose as it covers all the levels required to be aligned, from goals over processes and data to IT [OMB, 2007, 2007b]. An SOA, on the contrary, is not a good tool for this as, although it removes some symptoms (it can make technical systems work together in limited, well specified areas) it does nor specify the reasons (that stovepiped organizations are not properly incentivized for coordination and interoperability).

A framework for interoperability has to be complemented with rules for enforcement in order to be effective [OMB, 2007b]. There are currently only a few such frameworks in various degrees of development in Sweden, but even the one which is in the most advanced state of development (in national health care) does not include success measures along the lines of the EA approach or a benefits management program. There is an existing technical framework in the healthcare sector [MOHSA, 2006], but implementation is voluntary, and there are 310 political decision making bodies involved (290 municipalities and 20 regions). Each of these must decide whether or not the national goal of interoperability is more important than meeting immediate budget concerns. In practice this means every city will have to choose between, for example, closing several schools in order to be able to implement the framework, or to retain the schools and postpone interoperability. Where are the incentives to choose the first alternative? If there had been strong incentives it would have been expected that at least some of the 310 organizations

would have found them out and acted upon them long ago, without waiting for the Plan.

> (2) "Clarification of the responsibility to develop standardized information services on necessary conceptual models (Responsible: Ministry of Finance)". (p 13)

Requiring owners of major government databases to develop standardized services is useful for creating an SOA as it will facilitate the use of services from one department by others. However, it does not solve the reorganizational problem and it takes the focus away from government stovepiping and hence, in fact, reinforces the view that the Swedish governance model makes departments charge for services in order to boost their own budget – they are to have business relations with all other organizations. Hence central government departments may charge significant fees from those, e.g. municipalites, who require their information or services. Creating monopolies for some government departments, based on pseudo boundaries, will not necessarily be conducive to best whole-system benefits. As a minimum there should be some mechanism for preventing overcharging based on artificially created monopolies.

In the area of "Contacts with citizens and businesses" priorities include the following.

> (3) "Designating departements in each sector responsible for cooperation (Responsible: Ministry of Finance/all ministries)" (p 17)

This proposal is not detailed in the Plan, but it is not significantly different to the historically used method. What are the agencies responsible for cooperation to do? How can a "responsible" department enforce cooperation among other departments? What are the tools they can use? On what basis should costs be shared? Judging from history – indeed the lesson the government claims for the centralization of leadership – talk is talk and action happens based on the economic situation.

In a decentralized government such as that in Sweden, eGovernment at a national level is not a service but an information infrastructure. The point of an open standardized infrastructure is that it makes it easier for service providers to develop new services. This is why the Internet has attracted hundreds and thousands of services while other IT infrastructures, such as the cable TV networks which are technically able to deliver the same services, have remained underdeveloped, and this is why mobile operators have abandoned this route and have gone for internet compatibility [Lessig, 2001]. This proposal goes in the other direction; it will tie government agencies together in clusters guided by their own immediate needs. Presently, there are many small potential service providers in the public sector, such as the majority of the municipalities, who are potential providers of services if the entry costs were sufficiently low. However, this is not the case at the present moment in time. An effective model for eGovernment should ensure that government e-services are not locked in by an individual, or a few clustered, governmental organizations. The fact that the Tax Authority, for example, possesses a great deal of information that is useful to other governmental organizations does not, by any natural law, give it the right to sell it to them. Taxes are collected for the government as a whole, not specifically for the Tax Authority, and the fact that information is collected by a particular department is based on specific reasons, such as the need for control,

privacy, responsibility, etc. However, it is basically the property of the government as a whole. To the extent that such information is useful for other departments it should be made available to them on reasonable terms. The new envisioned laws will enable this to be legally possible, but this legal availability has to be complemented by economic feasability. The historical negotiation model, which appears to be repeated by the Plan, works only for the few and they are already visible today. The business success of several large agencies, such as the Tax Authority, the CSN (student loans agency), the Labour Office, etc. and the services in small government agencies and municipalities, which appear to be generally not succeeding, suggests that size does actually matter.

In other areas, such as the railroads and roads, the government has placed the infrastructure in the hands of a special agency (Swedish Rail Administration, Swedish Road Administration) for the double purpose of ensuring that it remains operational at all times (which for example a bankrupcy of a private actor would endanger) and providing a neutral arena for competition among transport operators. A similar model should be considered for the IT and information infrastructure. There could be an information infrastructure agency responsible for infrastructural services, such as standardized data access, to which a fee would be paid by all operators paid in order to use their services. This would create an arena in which it was also possible for small actors, such as municipalities, to benefit from services from others (because there would not be local monopolies creating artificial obstacles) and to provide their own services for use by others (because access costs would be low).

> "Set up a national health care portal (Responsible: Ministry of Health and Social Affairs)" (p 17)

This has already taken place in other Scandinavian countries and thus is merely an idea to align Sweden with development elsewhere. The crucial issue is, however, just what purpose the portal would serve. The questions remain as to who would ensure that the required services were available for the citizens, what would be the business terms and how would the service providers be engaged in this portal. We have seen national portals before, for example "Sverige Direkt" which was supposed to serve as a national portal to government services. This did not prove to be successful as there was no business relationship between it and the service providers (all government agencies), so the latter built their own portals, which were limited in scope. A portal can be seen as part of an infrastructure, similar to a shopping mall; it is a host for several shops, and it serves to facilitate business for all – and convenience for customers – by means of sharing infrastructural components hence making them cheaper, better, more available, etc., as compared to each shop proceeding on an individual basis.

> "Designating more central cooperation agenci with the task to develop integrated e-services and in some cases contact centres (Responsible: Minstry of Finance)." (p 17)

While it is not detailed, this proposal appears to suggest that there will be closer cooperation between a few central government agencies with regards to, for example, developing a shared entry point, a portal. While this may benefit those few cooperating partners it will not necessarily benefit the sector as a whole. If the responsibility is extended to develop sector-general services, the question then relates to their methods regarding their financing. Where will the requirement specification

for such services come from? How will the requirements of both citizens and businesses be included in the design of these services? Will this take place by means of evaluating them? It appears to be more likely that cooperation will focus on the internal requirements of the cooperating governmental agencies, as has been reported to be the current case according to Verva.

3. An alternative model for development

The above analysis has shown that there are systematic errors in the Swedish eGovernment strategic management. The lack of measurement and incentives are basically the same as in previous , failed, plans and there is little hope that it will be possible for the eDelegation to achieve much more than that achieved previously by Verva without the introduction of useful new (to Sweden) tools. The main problem is method. Swedish eGovernment management must abandon the negotiation model (consensus among top leaders) in favour of an open governance model drawing on goals and incentives that make agencies work towards convergence and national, whole-system, goals. Because of the strong reliance on the "management-by-results" model in the Swedish public sector, this model will have to be improved rather than abandoned. This means whole-system goals must be included in the instructions to the authorities – if it doesn't hurt it won't be fixed. The question remains as to how this can be achieved.

As shown above, the cooperation model underlying the Plan is "voluntarily cooperating agencies", in accordance with Swedish tradition. It is a weak governance model likely to drive costs rather than creating rationalization because it adds tasks without creating incentives. An alternative proposal following the arguments of the EA approach presented above would be to create an information infrastructure not owned by individual service providers, but principally following on from the strategy used for other infrastructures such as the railroads and roads. This would prevent monopoly situations where some agencies thrive on useful data sets while others, in particular the small ones and the resource-weak municipal sector which depend on much of their information from national government agencies facing increased costs.
The government states as one of its main reason for the new plan is that the previous decentralized model did not lead to the achievement of whole-system benefits. As argued above, neither will the new one unless proper incentives are implemented. Table 3 compares the two models by using important criteria from the above discussion.

Table 3: Comparison between the Cooperating Agencies and the Information Infrastructure models.

	Alternative action: Information Infrastructure model	**Government Plan: Cooperating Agencies model**
Economy	Creates an open infrastructure with low entry costs for service providers and data users	Creates a proprietary infrastructure with high costs for new services.
Sustainability	New services can be added by any provider based on needs. This means added value services for citizens can be provided, for example "my government pages". There is an infinite set of services government could produce. At present these are not all apparent Hence it is important to also design for the easy implementation of future services. An open infrastructure offers the best guarantee for this purpose.	Requires political mandate for each service unless there are economic gains for some agency.
Measurability Convergence	Compatibility with the infrastructure can be required from each government agency, as can measures such as "the degree of compatibility" which can be rewarded in the annual monitoring. Over time this will lead to *convergence*.	Compatibility will be negotiated in each case of desired cooperation with the specific agencies involved. This means no stages in the development towards overall interoperability can be defined, and departments will negotiate based on their relative strength, which may mean that strong ones (typically data owners) will be favoured at the expense of weak ones (typically users, for example municipalities). Over time this will lead to incompatible islands of infrastructure. Overall compatibility will have to be enforced by special means. Infrastructure will therefore be a hostage to day-to-day politics.
IT costs	IT costs will be clearly divided between infrastructural ones and service-related ones, as is the case in the railroad system.	IT costs will be blurred as is the current situation and infrastructure will be partly proprietary (specific to some, not all, government agencies)
Open standards	There will be incentives to use open standards as the infrastructure responsible organization has interoperability as its goal.	Standards will be partial, created for each cooperation project as will be those considered to be most practical for the involved parties.
Structural obstacles	Structural obstacles will be minimized as the infrastructure responsible organization has interoperability as its goal	Each new project may contribute to sub-optimization by creating new structural obstacles for others while optimizing current benefits for the few cooperating partners.

The Information Infrastructure model creates a market for services regulated by national goals, as is already the case in relation to the roads and railroads. The Cooperating Agencies create more in relation to both politics and negotiations. The former model also supports small actors, the latter only a few large ones. What has happened on, and by means of, the Internet over the past decade, and what is happening at the present time under the label of "2.0" should clarify the case that an open infrastructure has all the advantages for fostering creativity, new services, and value to the citizens. Old e-service provider models such as the French MiniTel and the cable TV networks have remained limited and have not flourished in the same manner as the open service structure of the Internet.

The Information Infrastructure of course requires a guarantor. Under the Swedish governance model this means a national agency must be charged with the task of ensuring that the infrastructure meets certain goals in an economical manner. In a manner similar to that for the National Road Agency, the Information Infrastructure Agency would provide basic infrastructural services, namely "good roads". There would be well defined interfaces to "local roads", governed by, for example, municipalities within their jurisdiction and operating by means of the same technical standards. This would imply taking a step forward from the current cottage industry towards more industrialized operations.

4. Conclusions

In this paper we have compared the Swedish eGovernment plan with the major current direction of developments within the field, the (generalized) Enterprise Architecture model. This model shapes the current thinking of the majority of countries, if not necessarily using that specific name; the focus is on interoperability and incentives for cooperation across departments so as to achieve system level efficiency and effectiveness. Both the comparison and the previous assessments show that the new Plan does not dramatically improve the historical Swedish model, which has so far proven an obstacle because it is based on voluntary cooperation among departments in which there are no budgetary or directed incentives to cooperate. We therefore proposed an alternative plan, the "Information Infrastructure Model" (IIM), which in principle can be contained within the Swedish model for governmental organization. The IIM solves several of the problems created by the current model by placing responsibility for the infrastructure with a dedicated organization. In this manner, incentives for an effective infrastructure can be specified and evaluated because responsibility is clearly designated. By this measure an open infrastructure can be created which supports both large and small actors. This provides a situation where service development will be more driven by citizen and business demands and less by the immediate business interests of a few large government agencies. The model has been successful in other areas, such as the railroads, the roads, and in telecommunication, not to mention the Internet. This successful model should also be applied in the field of electronic services. Government agencies must become more efficient, and they can only become so if they are allowed to focus on their core business and not on building parts of the national IT infrastructure.

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