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Editorial: E-Government for the economic crisis

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Many argue that these are the worst of times, and that we are very unfortunate to be living through the deepest financial crisis for seventy years. That's one view. Others argue, as did one of US President Barack Obama's aides a few years ago, that this crisis is too good to waste. How fortunate we are to have the chance to radically transform the ways our societies function and are governed. This other view sees the crisis as a generational opportunity for change. Venezuelan scholar, Professor Carlota Perez, in her seminal 2002 book,[1] not only foresaw what we are now experiencing but also gave us a formula for proactive and innovative action with ICT and governance as central pillars: the need for strong policies prioritising longer-term investments in the ICT demand side (inclusion, training, take-up) coupled with government transformation based on ICT systems and new organisational models. Is the world, is Europe, living up to this challenge?

E-Government itself has enjoyed substantial investment and attention over the last ten years in Europe as elsewhere. It has focused strongly on the twin goals of performance efficiency of the public sector and its effectiveness in delivering high quality services, both of which are again high priority goals as governments attempt to find a way through the profound challenges they currently face. The central question is, given the precarious state of the economy and of public services in most European countries, what role can e-Government now play in assisting governments to successfully address these challenges?

In early 2010, the United Nations published a global survey on leveraging e-Government at a time of financial and economic crisis, and pointed to the importance of regulation and monitoring, restoring trust, moving from transparency to participation, data access and civil society, and improving international cooperation.[2]

Some similar conclusions were reached by the OECD which undertook comprehensive surveys of their 34 member states in 2009 and 2010. **Barbara Ubaldi** shows that almost all countries use e-Government to contribute to the economic recovery, whether or not they have decided to include it as a formal part of their crisis response and recovery packages. While some governments have chosen to cut e-Government spending and reduce the pace of its implementation, many others have chosen to seize the opportunity to accelerate the speed of its implementation. Reprioritising e-Government activities towards programmes with direct efficiency and effectiveness impacts, higher quality and relevance of public services, and increased user-centric outcomes has been the priority in most OECD member countries. Strengthening trust has become one of the important political goals for governments as a prerequisite to longer-term economic growth.

The evidence coming through from both the UN and OECD work is that a wide variety of strategies are

1 Perez, C. (2002). Technological revolutions and financial capital: the dynamics of bubbles and golden ages, Cheltenham, UK: Edward Elgar.

2 United Nations (2010) e-Government Survey 2010: leveraging e-Government at a time of financial crisis, Department of Economic and Social Affairs, New York, retrieved February 1, 2011 from http://www2.unpan.org/egovkb/global_reports/10report.htm.

being adopted by countries depending on their specific situation and perceived needs. However, most seem to adopt either mainly a cost-cutting focus on short term efficiencies which tends to involve retrenchment and sticking to tried and tested measures, or a more forward-looking investment and innovation approach designed to improve effectiveness through higher quality and new types of services.

The two articles from Scandinavia illustrate how e-Government policy has come to be dominated by a relatively cautious approach since the crisis. This may be because many of the benefits of e-Government have already been realised in Scandinavia, for example with some of highest e-Government citizen take-up rates in Europe at well over 50% compared to the EU27 mean of 32% in 2010. **Anna Kelly and Morten Meyerhoff Nielsen** use examples to illustrate how the objective of increasing productivity and efficiency over the short-term is now dominant. The longer-term approach focusing on e-Government innovation, rethinking the way in which things are done coupled with process and organisational re-engineering which had previously characterised the Scandinavia approach, has taken a back seat. The authors argue that this could result in lost opportunities for medium- and long-term productivity-driven efficiency gains and qualitative benefits.

The importance of a long-term view is strongly reinforced by **Jan Overgaard**'s detailed analysis of the impact of the financial crisis on Danish e-Government. For at least ten years, the Danish government has focused on aligning its e-Government programme with targeted public sector reform initiatives, for example its Quality Reform and De-Bureaucratisation Programmes. However, decisions about e-Government policy are firmly in the hands of the Finance Ministry which controls the purse strings, rather than the Ministry of Science, Technology and Innovation which implements it. Since the crisis, this has resulted in a business as usual e-Government policy focusing on the bottom line and relatively short-term benefits, rather than attempting to maximise the social and economic potential of ICT. The author characterises this approach as somewhat timid, risk-averse and traditional, likely to undermine Denmark's position as a European e-Government leader, and he considers whether or not this is an appropriate response both in Denmark as well as in Europe more generally.

In contrast to these broader policy issues, the article by **Wendy Currie, David Finnegan and Daniel Gozman** focuses on EU and UK policies relating to securities markets in the wake of the financial crisis. It shows how ICT, and specifically e-Government, can be utilised, for example for internal control and monitoring, risk management, record keeping and disclosure to regulatory bodies. e-Government can clearly make a strong contribution to support on-going efforts to enhance and improve the regulation and monitoring of financial entities, by both increasing the efficiency of the process by which firms are regulated and improving the scope and effectiveness of the regulations themselves. **Gijs Hillenius** shifts this financial focus to the significant cost savings which could be realised by European governments by breaking free from their present vendor lock-in in terms of desktop and office ICT applications. He presents unique data showing the almost total dominance of Europe's fifteen million desktops by one vendor, demonstrates the dangers this presents in terms of cost and sustainability, and that a switch to alternatives including open source software could both improve public sector performance and boost European industry. However, such a more innovative and forward-looking strategy would require real political support and adequate change management to succeed, and there is no sign of this at present.

In contrast to these articles, **Rosa Mastrosimone, Liliana Santoro, Angela Palese, Ugo Giannattasio and Marco Velludo** examine anti-crisis policies and informatics infrastructures at the regional level in the Basilicata Region of Italy. The Italian Government has enacted specific laws to tackle the economic crisis and specifically its unemployment effects. These included granting unemployment benefits to previously excluded categories of workers and, in the case of the Basilicata Region, the

development of new digital information procedures for the accurate and rapid dispersion of social assistance. From its inception in October 2007, this anti-crisis information system has achieved positive results in the management and control of social assistance payments and reporting, as well as of the financial support received from the European Social Fund.

Finally, **Andy Mulholland and Oliver Jones** take a fresh approach to tackling the economic crisis by exploring how e-Government can address both types of strategy addressed in the previous articles, i.e. simultaneously reducing costs and improving levels of service and longer term innovation. They ask questions about the nature of web-enablement in government in a bid to promote debate and raise awareness about the challenges and opportunities of digital citizenship. The article considers how many private sector organisations and some governments are already demonstrating consumer openness to the concept of web-enabled self-service, co-creation of shared capabilities and direct, online service support for other customers. Can more governments make better use of techniques such as mass collaboration crowd sourcing, which is a proven and cost effective alternative way of asking citizens to participate in their own society around their own skills?

In sum, from the evidence presented in these articles, e-Government in Europe continues to be very successful in improving public sector efficiencies and regulation. However, grasping the nettle of generational and transformational change seems to have taken a back seat. Looking back over the last ten years in Europe, it is clear that interest in transforming government was very strong during the period of high economic growth, but the crisis has since ushered in a more cautionary mood. Some of the articles have argued this is a profound mistake and a lost opportunity. Obviously, the jury is still out, but the effects of the crisis and the response of e-Government still has some time to run. At a time when many European governments are starting to rethink how they and others produce and deliver services, and when ICT developments, especially mobile and web, are at last being taken seriously in the public sector, this could easily change.

The impact of the Economic and Financial crisis on e-Government in OECD Member Countries

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OECD

Keywords

Performance, Cost savings, Strategic investment, Rebuilding trust, Service quality, Crisis response

The global financial and economic crisis has overnight put governments under considerable pressure to promptly address a broad range of challenging political, economic and governance issues affecting both the public and the private sector. In their effort to be agile and responsive to the situation, governments have stretched their human and budgetary resources to the limit. To swiftly create the capacity to handle these new challenges, they are looking at how efficiency and effectiveness in the public sector can be improved.

The main issues are to avoid wasting taxpayers' money, ensure that resources are used most efficiently and effectively, and rebuild citizens' trust through increased transparency in how decisions are made and implemented. As a consequence, governments are also faced with the challenge of paving new ways to increase openness, citizen participation and engagement.

Seen in this perspective, the different government approaches to the crisis response show some common trends. Fourteen of twenty-two responding countries have included e-Government in their crisis response packages. Countries are generally looking into: improving performance and reducing waste in the public sector; making strategic investments in new and innovative key e-Government areas; accelerating public spending on e-Government; rebuilding trust with citizens; improving the quality of public services; and transforming the public sector by using e-Government as a key lever.

What role did e-Government play in government responses to the crisis? How do governments use e-Government to achieve direct or indirect impacts on the economic recovery? And how is e-Government seen as a strategic contributor to the longer-term recovery of the economy? Even though not all OECD member countries[1] have formally included e-Government in the official response to the crisis most of them reported minor changes, if any, in their e-Government implementation pace with some adjustment to priorities. This is an important sign of political commitment in a time of crisis, and an indication of the perceived relevance of the instrumental value of e-Governments as a key policy tool to boost public sector's efficiency.

> "Implementing user-centric e-government solutions with high-quality on- or offline service delivery in mind may be a viable long-term preventive strategy to sustain agility and responsiveness of governments if a new crisis of this magnitude should occur again in the future."

1 For the list of OECD member countries and enhanced engagement countries please see: http://www.oecd.org/pages/0,3417,en_36734052_36761800_1_1_1_1_1,00.html

1. Introduction

1.1 E-Government as a contribution to the strategic response to the crisis

The world is facing the aftermath of the most severe financial and economic crisis in decades. The 2008 global crisis put governments under considerable political pressure to act promptly on a broad range of political, economic and public governance matters affecting both the private and public sectors. In their effort to become agile and responsive to the situation, governments have stretched the use of public resources, e.g. financial and human, to its limits. Additionally, the required financial and economic interventions in different parts of the private sector strained public budgets significantly. The impact of the crisis on the public sector has been profound.

Governments have been forced to refocus their attention on potential wasteful spending of taxpayers' money. At the same time, governments have realised the political urgency to rebuild trust and confidence, especially with citizens. Trust was diminished or lost at the peak of the crisis in late 2008 as extensive political decisions were taken on the economy (e.g. national crisis response packages) with limited or no possibilities for public consultation and participation. Becoming more transparent and inclusive in the implementation of crisis packages thus became a priority. The question was: how could governments have the necessary measures in place that would allow them to act swiftly if faced with a similar situation in the future, without compromising the political need to maintain societal coherency and public support to far-reaching decisions?

According to a survey run by the OECD in 2009 (updated in 2010), almost all countries report that e-Government is seen as a contribution to the economic recovery without regards to whether they have decided to include it as a formal part of their crisis response, and recovery packages, or not. While some governments have chosen to cut e-Government spending and reduce the pace of its implementation, many others have chosen to seize this occasion to accelerate the speed of its implementation.

Many OECD member countries have used the crisis to refocus their e-Government programmes; and some countries have formally chosen to include e-Government as part of their stimulus and recovery packages. Reprioritising e-Government activities towards programmes with direct efficiency and effectiveness impacts, higher quality and relevance of public services, and increased user-centric outcomes has been the priority in most OECD member countries. Strengthening trust has become one of the important political goals for governments as a prerequisite to longer-term economic growth.

The focus on performance (e.g. efficiency and effectiveness) on the one hand and transparency, accountability, inclusion, and responsiveness on the other has made governments reconsider the strategic role of ICT use in the public sector and its governance implications at large – also known as e-Government (OECD, 2003). OECD member countries are looking at e-Government implementation as a key prerequisite for achieving these goals and for supporting the public sector in its efforts to implement crisis response packages. E-Government is thus seen as a cross-cutting tool to allow governments to support and enhance the broader economic and societal goals for future growth.

The OECD sees the following framework as a basis for trust-building and performance improvements in the public sector. The "framework" consists of five components:

- **Integrity**: Implementation of the OECD's integrity principles prevents fraudulent and corrupt behaviour in government.
- **Transparency**: Becoming transparent to citizens and businesses – allowing them to follow

decisions and giving them insight into policy implementation is an important prerequisite for open government.

- **Accountability**: Being accountable for decisions and actions is important to ensure that decisions and their implementation are led by public interest.
- **Responsiveness**: Being responsive to the demands and needs of citizens and businesses, e.g. such as providing public services of greatest value in their daily lives, fulfils an important democratic role of government.
- **Inclusiveness**: Being inclusive is a government's opportunity to engage citizens in political decisions and implementation. This secures citizen awareness of, and participation in, decision-making processes and increases public support.

The framework is in line with the G20 Framework for Strong, Sustainable and Balanced Growth adopted at the G20 Leaders' Summit in Seoul, Korea, on 22-23 October 2010,[2] and puts in place necessary basic public governance principles that the crisis revealed as being insufficiently embedded in national policy making.

2. From expansionary recovery to severe austerity measures

The number of urgent financial and economic issues that governments had to address, as a result of the crisis, required:

a. immediate intervention within the financial sector;

b. substantial budgetary commitments from governments to extraordinarily large and immediate public spending;

c. quick expansion of public sector capacity to handle the fallout of the crisis (e.g. rise in unemployment, management and implementation capacity of policy decisions on crisis responses, increase in demands for monitoring capacity and insight into government spending); and

d. immediate reprioritisation of existing spending programmes to allow for a more substantial economic effect of government interventions.

Public governance structures and administrations in the public sector at large were not geared to sudden shifts in the demand dictated by the pace of deterioration of the financial markets and of the economy in general. The political necessity for governments to act promptly in response to the situation at hand, with limited or no preceding international experience of relevant good practices to turn to and learn from, led to a number of different approaches to public sector transformation based on different political reasoning and culture.

The follow-up survey ran by the OECD in 2010 indicates that the global economic recovery has become widespread, though slow, across OECD member countries (OECD, 2010). Financial and economic recovery packages adopted since autumn 2009 have expanded public spending and increased short-term investments – including for some OECD countries temporary increases in short-term e-Government spending (e.g. in Germany and Korea) and for many other OECD member countries a focus on benefits realisation by reprioritisation and acceleration of e-Government projects that improve efficiency and effectiveness, and cost-savings (see Table 1) OECD (2009a).

2 The G20 Leaders' Declaration from the Summit in Seoul, Korea, can be found here: http://www.g20.org/Documents2010/11/seoulsummit_declaration,accessed 16 December 2010.

Table 1. Impact of the financial and economic crisis on e-Government, 2009

	Countries
E-Government is a part of the national crisis response	Austria, Egypt ++,Iceland, Ireland, Italy, Germany, Japan, Korea, Mexico, Netherlands, New Zealand, Norway, Slovenia, Sweden, Switzerland, United Kingdom, United States
E-Government is not part of the national crisis response	Australia, Belgium, Brazil ++, Chile, Czech Republic, Denmark, Estonia, Hungary, Luxembourg, Slovak Republic, Spain, Turkey

++ Observer to the OECD Public Governance Committee.
Note: Updated September 2010.

Source: OECD Survey on the impact of the financial and economic crisis on e-Government, 2009. Updated, September 2010.

The extraordinary monetary policies that led to fiscal and budgetary imbalances are slowly being reversed in order for countries to return to sound economic conditions. Most OECD member countries have adopted austerity measures, and previous e-Government investments are expected to provide significant cost-savings directly as well as indirectly in order for governments to achieve austerity goals: directly, through a thorough assessment of costs and benefits; indirectly, as a supporting tool for higher productivity through increased efficiencies.

The OECD follow-up survey run in 2010 shows that 14 out of 22 responding countries have e-Government as part of achieving austerity measures. Ten out of twenty-two responding countries say that the severe austerity measures have led countries to reprioritise e-Government implementation; twelve countries have indicated that no priorities have been changed and that the actions taken as part of the crisis response in 2009 are being followed in 2010.

Table 2. Impact of austerity measures on e-Government implementation, 2010

	Countries
E-Government is a part of achieving the government's austerity goals.	Austria, Brazil+++, Chile, Estonia**+, Egypt+++,
Greece, Ireland, Italy, Mexico, New Zealand, Slovak Republic, Slovenia, Spain, United States.	Australia, Belgium, Brazil ++, Chile, Czech Republic, Denmark, Estonia, Hungary, Luxembourg, Slovak Republic, Spain, Turkey
E-Government is not a part of achieving the government's austerity goals.	Belgium*, Czech Republic, Finland, India++, Norway, Sweden*, Switzerland, Turkey.
E-Government priorities have been changed due to the adopted austerity goals.	Chile, Estonia**, Greece, Ireland, Italy, Mexico, Slovak Republic, Slovenia, Spain, United States.
E-Government priorities have not been changed due to the adopted austerity goals.	Austria, Belgium*, Brazil+++, Czech Republic, Egypt+++, Finland, India++, New Zealand, Norway, Sweden*, Switzerland, Turkey.

* No austerity measures have been announced and thus no changes have occurred.
** As part of Estonia's Information Society Strategy.
++ Enhanced engagement country to the OECD.
+++ Observer to the OECD Public Governance Committee.

Source: OECD survey on the impact of the austerity measures on e-Government, September 2010.

3. Stimulating short-term recovery, while investing for long-term growth

Looking across country responses to the OECD Questionnaire on the Impact of the Financial and Economic Crisis on E-Government, a number of cross-cutting key issues arise:

- **Improving performance and reducing waste in the public sector** are seen as urgent necessities. This justifies on the one hand the need for governments to be able to generate cost-savings through efficiency and effectiveness measures internally in the public sector, and to be capable on the other hand to manage and spend considerable stimulus packages and to ensure maximum impact on the economy.
- **Prioritising strategic investments in new and innovative key e-Government areas** (e.g. ICT security, open source and "green IT") is seen by some countries as a way to initiate or accelerate necessary and future-oriented e-Government development programmes. These investments are also seen as a way to achieve sustainable economic growth that could create competitive advantages for those countries' private sectors.
- **Accelerating public spending on e-Government by carrying government spending forward** (i.e. relabeling of planned expenditures) including renewal or update of ICT hardware and software is seen by some countries as an effective short- to medium-term stimulus to their ICT sectors that at the same time could contribute to a modernisation of ICT tools in the public sector.
- **Rebuilding trust with citizens** using existing or new e-Government solutions to increase transparency and accountability, inclusion and responsiveness, has become a main focus. Several countries have invested in creating additional or complementary transparency on how stimulus packages are used and what the outcomes are with regards to, for example, infrastructure projects and the number of jobs affected in local communities.
- **Improving the quality of public services** is seen as an important part of reducing the additional burden on public service delivery in certain areas (e.g. unemployment services and social security services) due to the fallout of the crisis. A number of countries have in addition reported the development of new services supporting the management of recovery packages.
- **Optimising the value of e-Government as a key lever for transforming the public sector** to make it more agile and dynamic and thus more resilient to sudden changes in demands to public sector performance in a longer-term perspective.

The following sections highlight in more depth the actions geared towards specific policy objectives.

3.1 Increasing performance and trust in government

OECD work on public sector transformation in 2007 already highlighted its member countries' focus on internal transformation objectives such as efficiency, effectiveness and administrative simplification, and on the need to realise benefits; a focus that has not changed significantly since ICT was adopted as an efficiency tool in the early 1960s.

In the aftermath of the economic and financial crisis, OECD member countries have seized the opportunity to accelerate the transformation of their public sectors through prioritised e-Government activities with the intention to capitalise on efficiency and effectiveness gains and on the provision of integrated services obtained through the use of ICT in public administrations.

Strategically, governments use e-Government today to pursue more than ever the goals which are not specific to the crisis but that were embedded in public sector transformation strategies and modernisation efforts over the last 10 to 15 years. These include: increased efficiency and effectiveness; structural and organisational change; regulatory reform/administrative simplification; citizen-focus; quality of services; openness and transparency; and responsiveness in policy-making and service delivery (OECD, 2007a).

Achieving these e-Government goals also contributes to establishing the foundation for further cost-savings in government spending. Therefore, expected outcomes of e-Government development have not changed dramatically due to the crisis. Rather, performance-focused e-Government activities have in general been prioritised and accelerated together with measures to ensure governments' ability to deliver high-quality and coherent services to the public.

The focus on efficiency and effectiveness-oriented activities, together with activities that make public service delivery more coherent, shows that e-Government programmes are at the heart of the effort to make the public sector more agile, simple and responsive to internal and external demands. Governments are thus focusing on achieving second-order effects from their crisis-related e-Government priorities (see Table 3).

Table 3 shows an overview of OECD member countries' expected key outcomes of e-Government as part of the contribution to the response to the crisis (i.e. whether or not they have formally been included in national crisis response packages). Even though the table does not give a full and complete picture of all the nuances in the expected outcomes, it does give a broad insight into governments' main prioritised and desired outcomes embedded in the public sector's contribution to the national response to the crisis.

Table 3. Expected key outcomes of e-Government's contribution to the crisis response

Expected key outcomes	Countries
Cutting costs in government budgets.	Australia, Iceland, Japan, Mexico.
Improving efficiency and effectiveness/Increasing productivity.	Australia, Austria, Belgium, Czech Republic, Denmark, Hungary, Iceland, Germany, Ireland, Japan, Korea, Mexico, Netherlands, New Zealand, Slovenia, Switzerland, United Kingdom, United States.
Reducing administrative burden.	Czech Republic, Germany, Hungary, Luxembourg, Mexico, Netherlands, Slovenia, Switzerland.
Improving coherency and quality of public service delivery.	Austria, Belgium, Czech Republic, Hungary, Ireland, Luxembourg, Mexico, Netherlands, Norway, Switzerland, United Kingdom.
Transparency, accountability and citizen participation.	Korea, United Kingdom, United States.
Stimulating the private sector through public sector spending on ICT.	Germany, Korea.
'Green IT' goals	Germany, Luxembourg.

Source: OECD (2009), OECD Survey on the impact of the financial and economic crisis on e-Government, OECD, Paris. See also Annex A.

The trend that can be highlighted across OECD member countries is that most of them use e-Government implementation to achieve:

- medium- to long-term outcomes of efficiency and effectiveness in administrative functions;
- improved coherency and quality of public service delivery; and
- administrative burden reductions.

Improving transparency, accountability and citizen participation are also targeted goals. The urgency of quick political interventions in the second half of 2008 limited the possibility for proper consultations of the public. Far-reaching economic decisions were made by politicians that had long-term impacts on OECD member countries' economic development: the direct and indirect fall-out of the crisis has increased the pressure on public spending. It has happened directly in the form of interventions in the private sector through bail-outs and different national measures to support and stimulate the financial sector; and indirectly through the increase in social security spending and unemployment benefits due to the economic slow-down.

Governments experienced the need to rebuild trust with citizens, and some governments have in their expected outcomes prioritised the development of increased transparency, accountability, and citizens' participation and inclusion, especially in the crisis response implementation (e.g. explicitly reported by Korea, the United Kingdom and the United States). This included initiatives to improve transparency on the implementation of crisis packages and increase governments' accountability regarding the use of crisis funds and the nature of the outcomes of the spending.

3.2 Focusing on benefits realisation

Realising benefits is difficult, and how to manage benefits realisation in government has been a major consideration since the mid-2000s (OECD, 2007b). A general trend seen across outcome expectations emphasised by OECD member countries is that governments have significantly sharpened their focus on achieving the full benefits of e-Government and accelerated the implementation of those projects that most quickly lead to tangible benefits realisations. Enabling governments to become agile and responsive in extraordinary situations requires that administrations are coherent and integrated, and that they are able to dynamically reprioritise and scale their activities according to the requirements of the situation at hand.

E-Government programmes already implemented in most OECD member countries enabled governments to respond faster to the political demands that emerged as a result of the crisis. Scaling-up public service delivery especially in areas burdened by the fall-out of the crisis in several countries (e.g. the Netherlands, the United Kingdom and the United States) is one example; while another is the transparency into the use and outcomes of recovery package spending (e.g. Ireland, the United Kingdom and the United States).

Furthermore, the development of coherent and integrated government back-offices allowed for a switch towards areas supporting activities that make it possible for governments to deliver transparency, increase inclusion and enhance responsiveness. The crisis did in fact show that public sector transformation could not have happened if critical e-Government solutions had not been implemented both in the back-office (e.g. integration of the public sector back-office to allow for coherency in the exchange of information and data) and in the front-office of governments (e.g. e-Government services organised in portals).

The changes in the front- and back-offices allowed governments to be more transparent and accountable in their decision-making, to share resources across government organisations and levels of government, and to offer easy, simple and coherent access to services whether they are offline

or online. It is in this perspective that user take-up of e-Government services is becoming important as a simple prerequisite for effectively harvesting efficiency gains and allowing governments to significantly cut costs and reprioritise the use of public sector employees (OECD, 2009a). High-quality and efficient service delivery subsequently becomes an issue with regard to the effective use of public sector resources, either public sector employees or e-Government services. It becomes a question of using the most appropriate service delivery channel available, whether it is an on- or offline channel. Implementing user-centric e-Government solutions with high-quality on- or offline service delivery in mind may be a viable long-term preventive strategy to sustain agility and responsiveness of governments if a new crisis of this magnitude should occur again in the future.

In a broader and more long-term perspective, the crisis has given governments an opportunity to re-emphasise the importance of fully implemented national and cross-border e-Government programmes as seen in, for example, the European Union. The need for a quicker transformation in the public sector as a result of public sector reforms has been highlighted by the crisis. The crisis has also emphasised that e-Government projects can be an important part of the response to the crisis particularly if they can be implemented quickly and their benefits realised rapidly.

4. Prioritising and innovating for future growth

Overall, using the funding of the crisis response to further develop innovative e-Government solutions, and to increase the sophistication of e-Government services, is seen by the governments as a way of sowing the seeds for new start-ups or business opportunities – thus supporting a long-term sustainable economic growth strategy. The importance of embedding e-Government's broader strategic potential in their economic policy framework has been emphasised by some countries' strategic investment priorities which have focused on using public sector innovation to spearhead new technological breakthroughs (e.g. ICT security, open source, broadband coverage, and "green IT").

Knowing governments' priorities and what has remained unchanged after the crisis is essential in order to understand the considerations behind their decisions. In reprioritising considerations, governments have made strategic choices with a clear focus on the medium- to long-term effects of e-Government implementation. The choices include investments in activities that enable significant future benefit realisations for the whole of the public sector (e.g. putting in place common e-Government solutions such as digital signatures, improving ICT security, and assessing new technological concepts such as "cloud computing"[3] that might allow for further cost-savings).

As already seen in the overview of expected key outcomes in Table 3, governments are strongly focusing on harvesting efficiency and effectiveness benefits. This is reflected in the general trend to accelerate the implementation of existing e-Government programmes and to adjust e-Government strategies and action plans to support cost-savings, and as a result free-up resources in government budgets (see Table 4).

Another trend seen in government responses is that public services in areas that support the ongoing major fallout of the crisis (i.e. unemployment, economic stimulus plan support) on citizens and businesses have received extra attention in governments' prioritisation. Priority has been given to the implementation of e-Government activities that support or enhance coherency in service delivery such as expanding infrastructure accessibility (e.g. broadband penetration) and back-office

3 "Cloud computing" is a way to perceive the use of online services provided on the Internet where the (ownership of the) electronic infrastructure is concealed, and these services are used independently of who owns or provides them. The "cloud" symbolises the Internet infrastructure.

integration. The latter is a key challenge for many OECD member countries, as this often requires major structural and organisational changes that challenge existing responsibilities and division of labour within and across levels of government. Governments may see the crisis as a window of opportunity to initiate a process towards adjusting those boundaries.

Governments are also looking more closely at the possibilities for sharing resources, e.g. services, capacities such as competencies and skills, infrastructure, technological platforms, and solutions. In sum, though many OECD member countries report unchanged priorities, the common message is that existing e-Government strategies and action plans are aimed at targeting the lagging efficiency and effectiveness realisations and the possibilities for delivering coherent and individualised services to citizens and businesses.

Where existing programmes were already in place, some governments have chosen to accelerate the implementation and investments in parallel (e.g. Japan, the Netherlands, Switzerland and the United States). Few countries (e.g. Germany and Korea) have chosen a proactive response through strategic investments in innovation and the development of new technologies to address broader national priorities with, for example, "green IT" initiatives (e.g. Germany and Luxembourg).

The crisis provided incentives for governments to focus on immediate cost-savings in public sector expenses, and investments in ICT infrastructure have been prioritised by many OECD member countries (e.g. Australia, Canada, Finland, Germany, Japan and the United States) (OECD, 2009b). However, only a few countries (e.g. Germany, Korea and the United States) saw the opportunity to invest strategically in public sector innovation to gain longer-term strategic advantages (e.g. development of new technologies) with spill-over effects to the private sector. For countries such as Germany and Korea, the national strategic importance of technological innovation and development is high, and long-term impacts on improved competitiveness of selected segments of the private sector (in this case the ICT industry) are political priorities.

Such areas could be further strengthened to increase the focus on public sector ICT spending as a way to stimulate a specific private sector segment (e.g. the ICT industry as seen in Germany and Korea). In this perspective, achieving an environment-friendly use of ICT in the public sector, and broadly within society at large, are strategic priorities that also support the goals of sustainable long-term growth through innovation that could create a competitive future advantage (e.g. as seen in Germany and Luxembourg).

Table 4. Prioritisation of major e-Government areas due to the crisis

Prioritisation of major e-Government areas	Countries
No changes in prioritisation of e-Government activities.	**Austria, Australia, Belgium, Czech Republic, Denmark, Hungary, Japan, Korea, Norway, Slovak Republic, Slovenia, Turkey.**
Sector-oriented e-Government programmes (e.g. health, justice, transport, education).	**Germany**: 285 different sector specific projects have been initiated with a funding of EUR 238 million. **Slovak Republic**: A number of sector areas (within health, justice, transport and education) are prioritised for e-Government implementation in the period 2009-13 funded by the European Union Structural Funds. United States: Health ICT, Energy (Smart Grid), broadband implementation, ICT to support education programmes.

Prioritisation of major e-Government areas	Countries
Specific development projects at the central, regional or local level that improve the quality, efficiency, and user-focus of service delivery (e.g. automated statistical data collection and reporting, fishing or hunting licenses), and efforts to harmonise front-office implementation for increased user-friendliness and recognisability.	**Slovak Republic**.** **Germany**: Provision of encrypted mobile phones and Personal Digital Assistants (PDAs) for the federal administration. **Mexico**: Automation of statistic collection and improvement of interoperability to better provide services to citizens. **Netherlands**: creation of a one-stop-shop government portal for citizens. **Luxembourg**: "One-stop-shop" portal - www.guichet.lu. **Slovenia***: Priority given to sectors with insufficiently developed e-Government services such as services within the health and justice sectors (e-health and e-justice).
Back-office reorganisation (e.g. standardisation of information and data, technical platforms, cloud computing, legislation and regulation, and organisational structures).	**Iceland, Luxembourg, Slovak Republic**, United Kingdom.** **Germany**: Creation of an open source software competence centre to support and enhance the use of open source software within the federal administration; it is anticipated that this initiative will in the medium- to long-term perspective generate significant savings and have significant impact on and stimulus of the German ICT sector. **Mexico**: Re-engineering and automation of internal processes. **Netherlands**: Continued work on open source and open standards from before the crisis.
Common collaboration frameworks (e.g. common business processes, electronic ID management, electronic ID card solutions, and enterprise architecture).	**Germany**: ICT security and the improvement and consolidation of the Federal ICT organisation. **Netherlands**: Accelerated implementation of DIGID (digital authentication module) and GBA (population register) by local and other government levels. **Switzerland**: digital signatures - "SuisseID" - for citizens and businesses. **United States**: Evaluation of a cloud computing option to replace current infrastructure to improve innovation, efficiency and effectiveness; ICT security and ensuring the privacy of citizens.
E-Participation and e-inclusion (e.g. web 2.0 tools and applications and electronic social forums).	**Germany, Slovak Republic**, United Kingdom.** **United States**: Open and transparent government through increased availability of federal government data in more usable forms; participative and collaborative through the use of web 2.0 concepts.

Prioritisation of major e-Government areas	Countries
Administrative burden reduction.	**Luxembourg.** **Netherlands**: specific focus on service areas and services where people who, due to the crisis, have intensified contacts with government, for example: accessibility of municipalities' websites (as laid down in the "webrichtlijnen"); automatic remission of local taxes (for people with low income); clustering of different websites and facilities that are the main entry point of government for citizens' questions in one "Answer for citizens"; the "personal internet page"; the "digital message box"; the implementation of "DigiD" (the Dutch digital authentication device) by other government organisations; the implementation of 'Regelhulp', the web-based tool for citizens applying for certain health benefits of services; re-usage of the previously administered medical indications by different governmental organisations; and the use of mediation techniques by civil servants.
Other major priority areas.	**Germany**: 27 horizontal initiatives have been initiated in the federal government with a total funding of EUR 237 million. Among these are the "Green IT" initiative to reduce energy consumption of the federal public sector by 40% by 2013 and the creation of an "Green IT" competence centre to support and enhance environmental friendly ICT use; the competence centre for open source software. **Ireland**: (a) resilient pan-public service systems and infrastructures such as telecommunications, web environments, identity and means repositories; (b) multi-channel electronic strategies for dealing with increased and sustained State benefit claims; (c) electronic facilities to manage crises. **Iceland**: free and open source software. **Korea**: measures to overcome the crisis have been added to each e-Government project. **Luxembourg**: reducing the carbon footprint. **United Kingdom**: application reuse, shared services.

** Broad public sector e-Government implementation in the period 2009-13 funded by the European Union Structural Funds.

Source: OECD (2009), OECD Survey on the impact of the financial and economic crisis on e-Government, OECD, Paris.

5. Impacts on budgets

Most governments report that the crisis has not had an impact on the level of spending on e-Government implementation. E-Government spending has indeed remained unaltered or, in some countries, it has been accelerated by carrying government spending forward (i.e. relabeling of planned expenditures).

However, governments are indicating that changes to budgets may happen in the coming fiscal years (see Table 5):

- Some governments plan to keep budgets neutral, but to reprioritise within the existing budget

envelopes; others anticipate that efficiency and effectiveness harvesting will create budgetary room to "do more with less".

- Some governments reported a decrease in their 2009 e-Government spending and a further decrease is anticipated in the coming years due to the fallout of the different extraordinary spending programmes.
- A few governments reported an increase in e-Government spending and anticipate further increases due to the acceleration of specific programmes and/or projects as a direct or indirect consequence of the crisis (as seen in Table 3). These countries (Korea, Germany and the United States) see the crisis as an opportunity to use existing funds (Korea) or additional funding (Germany and the United States) to invest in innovation and ICT as a way to both stimulate the private sector and its competitiveness and to accelerate new developments that support countries' public sector transformation goals. This tendency is supported by the fact that many OECD member countries are prioritising electronic infrastructure investments (extending broadband coverage) (OECD, 2009b) that could have a significant effect on future increases in user take-up of e-Government services (OECD, 2009a).

Table 5. Overview of budgetary impacts on e-Government implementation (2009 and future budget years)

Budgetary consequences	**Countries**	
	2009	**Future budget years**
No budgetary consequences	**Australia, Belgium, Czech Republic, Denmark, Ireland, Korea, Luxembourg, New Zealand, Norway, Slovenia, Sweden.**	**Czech Republic**: Decreases in e-Government budgets are expected in different sectors. **Denmark**: Increases might happen due to the general crisis response policy of moving public investments forward. **Slovenia***: New programme-oriented budgeting introduced in 2009 that also takes into account how a proposed activity mitigates the financial crisis impacts thus implicitly favouring efficiency and effectiveness objectives; budget reductions found on ICT infrastructure modernisation (reduction in the write-off period for hardware) and on existing contracts with suppliers of hardware and services.
Decrease in budgets	**Austria, Hungary, Iceland, United Kingdom.**	**Hungary**: EU Structural Funds are financing major parts of the Hungarian e-Government initiatives through the Electronic Administration Operational Programme 2007-13. The budget approved for the Programme will remain the same and co-financed by Hungary. However, national budget estimates for e-Government development in general are expected to experience a proportional budget decrease due to the crisis similar to other budget areas. **Iceland**: For 2009, the e-Government budget has been decreased by16.5%; for 2010 a further decrease is expected on the level of 18%. **United Kingdom**: ICT budgets will be reduced, but the move towards standardisation of infrastructure and the re-use of applications will mitigate this decrease and allow for delivering "more for less".

Budgetary consequences	Countries	
	2009	Future budget years
Increase in budgets	**Germany, Japan, Mexico, Netherlands, Slovak Republic**, Switzerland, United States.**	**Germany**: Multi-year crisis spending package from February 2009 has allocated EUR 4 billion for federal investments. EUR 500 million of this has been allocated to the federal Chief Information Officer to spend on modernising the federal administration. **Japan**: For 2009, additional budgets were given to do research on a "Government shared platform"; for 2010, a significant budget increase is expected in order to implement the project. **Mexico**: Three priority areas have got increased budgets: (i) reengineering and automation of internal processes; (ii) interoperability for better service provision to citizens; and (iii) automation of statistics collection. **Netherlands**: For 2009 and 2010, budgets have been increased by moving forward the budget anticipated for 2011 in order to fund the acceleration of specific e-Government programmes, but in the end it has no budgetary consequences.

** Budget increase for e-Government implementation in the period 2009-13 funded by the European Union Structural Funds.

Source: OECD (2009), OECD Survey on the impact of the financial and economic crisis on e-Government, OECD, Paris.

6. Conclusions

The financial and economic crisis that hit the world in 2008 has shown that the work on e-Government already carried out in the public sector has been invaluable. The crisis has been taken by many governments as an opportunity to accelerate the implementation of their e-Government programmes focusing sharply on realising benefits, such as improving efficiency and effectiveness, increasing savings on public administration operations, and enhancing trust-building with citizens.

Having basic e-Government infrastructures, frameworks and organisational structures already in place in most OECD member countries allowed governments to prioritise strategic investments in public sector innovation to lay the ground for future economic growth besides accelerating the harvesting of savings through activities aimed to improve performance.

Even though governments adopted different approaches in their response to the crisis, it is nevertheless significant to note that they all saw e-Government implementation as a key strategic tool to achieve wider public governance and political goals and thus support the immediate and targeted economic recovery packages.

In brief, some lessons that can be drawn from the recent economic and financial crisis are that:

- Governments' awareness of e-Government investments should be raised as it is a longer-term strategic activity that would allow them to save costs as well as improve the quality of public services.
- Investing proactively in e-Government is a way to build future skills, competencies and capacities

within the public sector.

- Strengthening partnership and collaboration with the private sector in areas where the latter is more experienced, and which are becoming increasingly more important for the public sector (e.g. cloud computing, mobile government), could create a strategic competitive advantage in a longer-term perspective.

References

OECD (2003). The e-Government Imperative, Paris: OECD.

OECD (2007a). E-Government as a Tool for Transformation, (GOV/PGC(2007)6), 28 March 2007, Paris: OECD.

OECD (2007b). Bis Benefits Realisation Management, (GOV/PGC/EGOV(2006)11/REV1) Paris: OECD.

OECD (2009a). Rethinking e-Government Services: User-Centred Approaches, Paris: OECD.

OECD (2009b). The Impact of the Crisis on ICTs and Their Role in the Recovery, (DSTI/ICCP/IE(2009)1/FINAL), 17 August 2009, Unclassified OECD document, Paris: OECD.

OECD (2010). Economic Outlook, Paris: OECD.

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Scandinavia 2.0: Efficiency, cooperation and innovations to alleviate the Economic Crisis

In the majority of European countries a central question is: What is the role which ICT and e-Government can play in successfully assisting governments' responses to the challenges arising due to the current state of the economy and public services in general?

Presenting topical Scandinavian examples and business cases, this think-paper highlights the fact that the relative importance of ICT-enabled government has not changed in its basic nature in light of the current financial situation. In fact, "Scandinavia 2.0" illustrates the pivotal role which cooperation, efficiency, creativity and innovation can play when technology is applied in the public sector. In simple terms, the enabling character of ICT is essentially exploited by having two different objectives in mind. One is to increase productivity and efficiency by focusing on existing processes and short-term cash flows. The other focuses on the original aim of e-Government innovation by rethinking the way in which things are done, simplification, process and organisational re-engineering. The overall aim is to achieve a more efficient and effective public sector providing high quality and user-centric services. Both objectives are needed to achieve this and should be applied with consideration and skill. However, the number of e-Government initiatives launched in Scandinavia as a direct response to the current economic recession has been limited. With a singular and dominate focus on short-term cash flow and risk minimisation, this could result in lost opportunities for medium- and long-term productivity-driven efficiency gains and qualitative benefits.

Disclaimer:

The views expressed in this paper/article are those of the authors and do not necessarily reflect the official view of their respective employers PwC (Sweden) or National IT- and Telecom Agency (Denmark) on the subject.

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Efficiency, effectiveness, key enabler, administrative burden reduction, value creation, simplification

> "ICT is a key factor in Scandinavian government initiatives with the dual focus of cost savings and user needs, thus rethinking efficiency and simplification of public services."

1. Introduction

Clearly, information communication technology (ICT) is a tool with multiple uses. Some of these include technology-facilitated quality and service improvements, efficiency and effectiveness, productivity gains, cooperation, administrative burden reduction and the creative utilisation of ICT. As an enabler, ICT allows for the rethink existing processes and organisational patterns, service delivery channels, etc.

It is, therefore, not surprising that e-Government in Europe has enjoyed substantial investment and attention in the past ten years. There has been a strong focus on increasing the efficiency and effectiveness of the public sector, but also its ability to deliver high-quality services and innovation. This focus should be seen as a result of the impact of globalisation, competitiveness, innovation, skills and competences, ageing populations, immigration issues, availability (or lack thereof) of financial and human resources, etc. The financial crisis has amplified these influences as government incomes (taxes) have decreased, while expenditure (unemployment benefits and economic stimulus packages) has increased. The attention in the majority of European countries has shifted from investing in e-Government to targeting cost-benefit models. The question centres on whether investments in e-Government pay back, in real terms, in the short-term and also, what is the potential long-term efficiency value of these investments? In this regard, the Scandinavian countries, Denmark, Norway and Sweden, are no different from their European counterparts.

While the number of e-Government projects initiated to alleviate the economic recession has been limited, this think-paper will, by highlighting current Scandinavian examples and business cases, argue:

- That the relative importance of ICT-enabled government, in its basic nature, has not changed due to the current financial crisis;
- That ICT remains a key enabler for increasing efficiency, effectiveness and quality in public sector service delivery in both the short- and long-terms if only short-term economic benefits are allowed to dominate;
- That the focus should continue to be on the enabling character of ICT and the original objectives of e-Government – i.e. innovation by rethinking the way in which things are done, simplification, process and organisational re-engineering to achieve a more efficient and effective public sector providing high-quality, user-centric services in the short-, but particularly, in the long-term.

Examples are used throughout the argument to provide practical and real-life examples. Scandinavia will be the focus to illustrate the current thinking and ideas in Denmark, Norway and Sweden, but also to act as inspiration while narrowing the context and scope of the paper.

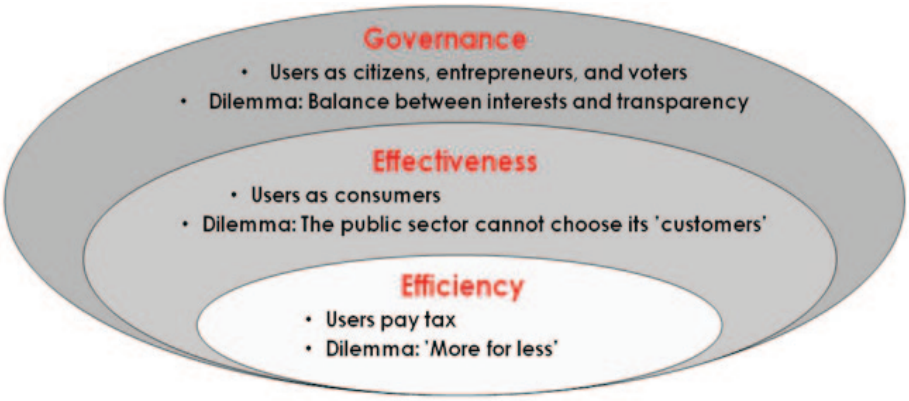
2. Setting the Scene: ICT as an Enabler…

When looking in general at ICT as an enabler and facilitator of efficiency and effectiveness, public administrations face a number of dilemmas. In relation to efficiency – particularly in the current economic climate – resource limitations and high tax rates limit the manoeuvrability of Scandinavian governments and the public sector. Resistance from citizens and business may be experienced, but the major concern is that ultimately, high taxation can be detrimental to the overall competitiveness of a country; the challenge is, therefore, to create value with the same or fewer available resources (Archmann & Meyerhoff Nielsen, 2009).

The private sector is often referred to for inspiration and emulation when seeking to increase the competitiveness of the public sector. The challenge, and the dilemma, is the natural limitation on public administration, in contrast with private business, in that it cannot "choose" its 'customers'. Public administration must serve all citizens equally, no matter the cost and difficulty in doing so.

Increased ICT use and user-centric service development presents an interesting dilemma in relation to e-Government. A balance must be struck between the interests of the various stakeholders and interest groups. This dilemma is the result of individuals having varying personal interests and roles in society i.e. they are citizens, voters and entrepreneurs (see Figure 1).

Figure 1. Dilemmas of burden reduction (Millard adapted by Archmann & Meyerhoff Nielsen, 2009)



These dilemmas represent undercurrents which are present when technology-enabled change is addressed, no matter if the change in question relates to the reduction of administrative burdens, quality and service improvements, cooperation, joint development of components and infrastructure, re-use of data and content, or when ICT facilitated and enabled innovation and creativity is the focus.

3. Cutting Costs, Saving Money and Releasing Resources

One of the enabling characteristics of ICT is that it allows authorities to increase the productivity and efficiency of existing processes. This implies a minimum change to existing processes, organisational structures and risk, but allows digitising authorities to reap a number of short-term cash-flow benefits and release human resources for other tasks or retrenchment as processes are automated. The following examples will highlight some of the ways in which Scandinavian authorities reap the economic benefits of ICT.

3.1 Virtual meetings cutting costs and CO2 emissions

One way authorities can save, or stretch, resources is by increasing the use of ICT tools enabling virtual meetings within an organisation as well as with customers. The benefits are particularly high for organisations with distributed service throughout a country, e.g. tax centres, healthcare providers or municipalities with multiple offices and one-stop-shop service centres.

In Norway (Digi.no, 2009) the saving potential has been estimated for approximately 140,000 state administration employees and their 523,600 trips in 2008. A total of 32% of these trips were to destinations outside Norway and the total distance travelled was 521 million km. This mileage may

be reduced by using videoconferencing. If a mere 1/5 of the trips are replaced by videoconferencing, the Norwegian state would save approximately NKR 290 million (€ 22.65 million[1]) annually in flight costs alone. In addition, CO2 emissions could be reduced by 12,650 tons. In comparison, the Danish government spent in excess of DKK 200 million (€ 26.85 million[2]) on flights in 2007 (Økonomistyrelsen, 2009). If 1/5 of Danish travel requirements were replaced by video conferencing, this would lead to estimated annual savings of DKK 40 million (€ 5.36 million). Naturally, virtual meeting formats generally require high bandwidth, and the potential will differ according to the availability and cost of broadband, but the estimated savings potential resulted in the Danish High Speed Committee recommending an increased use of virtual meetings in its 2009 report (Højhastighedskommitteen, 2010). With the broadband infrastructure in place, a change in meeting culture combined with relatively small investments in video conferencing equipment, or use of webcam and IP solutions such as Skype, will allow authorities to reap the economic and productivity rewards.

3.2 Working from home to increase productivity

Further to the virtual meetings another example of technology use to increase productivity is working from home. Related to the 1980-90s concept of teleworking, videoconferencing and ICT-enabled work-from-home stations are nothing new. The simple combination of webcams, microphones and headsets, laptops and mobile phones helps minimise sick days, saves time and money and reduces congestion and CO2 emissions. Allowing employees to work from home when their children are ill, or day-care facilities are closed, is shown to minimise sick leave and is considered to be a flexible, value-adding option by staff. A web survey by the Danish daily newspaper Politiken found that 42% of respondents (of 1,813 persons) could work from home and that they were more productive (Politiken, 2010), approx. 15% indicated that they were less effective when working from home and 10% did not have the option (Handikapportalen.dk, 2010). KMD's (a large Danish software developer) figures show that an employee work-from-home station (usually a PC, broadband connection and mobile telephone) costs 6,000-7,000 DKK (c. € 800-940), but that the cost is more than recuperated by the average of 33 hours of home work annually logged by each of the company's circa 3,000 employees. In addition, it is estimated that the actual number of hours worked from home by KMD staff is, in effect, far greater than logged, thus providing additional anecdotal evidence of the benefits of teleworking (Computerworld.dk, 2010). Still, not all employees have the option to work from home. For instance, 61% of higher-skilled and high-salaried employees in Denmark have the opportunity, while only 9% of unskilled workers have the option of regularly working half or full-days from home. One reason is the correlation between the type of technology used and the equipment required in different industries. Another is the relationship between overhead costs and the potential productivity increase associated with teleworking. Research highlighted by Jeremy Millard (Danish Technological Institute, Arbejdsmiljø, 2010) shows that telework-related productivity increases for the first 13 days per year, but then productivity diminishes. The drop in productivity and efficiency is associated with the lack of regular contact and interchange with colleagues (Arbejdsmiljøviden.dk, 2010). While telework in a Scandinavian context is nothing new, the key point is that both public and private employers have successfully increased productivity by allowing employees more flexibility while providing them with the ICT tools to take advantage of this opportunity.

1 Exchange rate for Norwegian Krone (NKR) to Euro (€) rate used in this article is NKR 7.81 to € 1.00 (Source: www.xe.com/ucc accessed on 23 November 2010).

2 Exchange rate for Danish Krone (DKK) to Euro (€) rate used in this article is DKK 7.45 to € 1.00 (Source: www.xe.com/ucc accessed on 23 November 2010).

3.3 Value creation through simplification

The goals of burden reduction are relatively straightforward. Essentially, burden reduction is translated in terms of time and economic costs (Archmann & Meyerhoff Nielsen, 2009). The objective is to increase effectiveness and efficiency and to ensure that public sector resources create maximum value-for-money. Value-for-money may take a number of forms, including simplification, new types of public services, new and different types of service delivery channels, greater personalisation of public sector services provision, expanded flexibility, enhanced perceived quality of the individual service and the way in which it is provided, longer opening hours, etc. The extent to which technology may facilitate increased efficiency and effectiveness is the reduction of time spent on carrying out the tasks associated with a given service.

Potential benefits of burden reduction for both citizens and businesses include (Meyerhoff Nielsen, 2009a):

- Product improvement related to the quality of service, faster delivery and outcomes/results;
- Service improvement in terms of increased transparency, better cooperation across and between internal units and external public sector partners;
- Cost reduction, in the form of, for example, time savings, and cost savings for material expenses;
- Demand, in relation to customer potential for take-up and access.

For public administrations, the benefits of reducing red tape may include (Meyerhoff Nielsen, 2009a):

- **Efficiency** through process optimisation, synergies between authorities, synergies between new and existing systems;
- **Effectiveness** in improving service results and administrative control;
- **Sustainability** in the form of increased innovation, improved presence and performance and better cooperation;
- **Interoperability** internally as well as between organisations and systems, all in all promoting a coherent information and governance flow in the public sector.

The business case of administrative burden reduction is supported by the following Norwegian examples of time reduction for enterprises using electronic forms (Bjørke, 2009; Altinn/Brønnøysund Register Centre, Norway, 2009):

- TAX return (package of several forms) 20%
- Coordinated Register Notification 30%
- VAT report 50%
- Fish farmers' report 66%
- Term report of employers' contribution and advance tax 66%

3.4 Digitising existing functions to cut costs and add value

ICT can also be used to digitise existing service delivery processes with limited change to these and the organisational structure. The City of Stockholm has since 2007, invested heavily in

e-Government. SEK 650 million (€ 69.30 million[3]) has been earmarked for the implementation of an integrated development of ICT as a tool for business development and service to residents and business owners. The efforts have resulted in reduced operating costs, while increasing the added value the service offered to the city's residents. The new online self-service offerings, and related business developments, have resulted in the City of Stockholm saving, in total:

- SEK 60 million (€ 6.40 million) in 2009
- SEK 55 million (€ 5.86 million) in 2010
- SEK 13 million (€ 1.39 million) in 2011

Of the 50+ eServices implemented through the Stockholm e-Government programme a number include the digitisation of application forms, permits and invoices. Examples include:

- Online application and simulation tool for a permit for an underground heating pump (winner of the Swedish e-Government Award Guldlänken 2010 for the most innovative e-Government development in the public sector for the benefit of citizens and businesses);
- Online application for parking permits (reducing the administrative process time from 10 minutes to 1 minute and customer waiting time from one week to an immediate response);
- An online care diary, online application for choice of day care and school;
- Complaints and comments;
- eInvoicing.

Other online services include personalised pedestrian navigation and travel information, booking and payment of swimming lessons, booking for marriage ceremonies. The latter has for example resulted in a 100% increase in processed booking and a 50% reduction in total processing time.

The Danish eBox, or Digital Post, solution is another interesting example of an existing process being digitised. Basically an inbox for electronic letters, the business case for the eBox is interesting. In 2009, more than 133 million electronic letters (from authorities, employers, banks, insurance and utility companies, etc.) were sent to more than 2.5 million Danish eBoxes. With an average postal saving of DKK 5.00 (€ 0.67) per letter, this constitutes a saving, in 2009, exceeding DKK 665 million (€ 87.26 million). From 2010, the borger.dk electronic post box (an upgraded version of eBox) allows citizens to receive and to send secure, digitally signed electronic post. Users are thus provided with an economic and efficiency incentive to regularly log on to borger.dk (i.e., postal savings and correspondence safely stored and backed-up in one place) (Borger.dk, 2010).

3.5 The potential of channel strategies

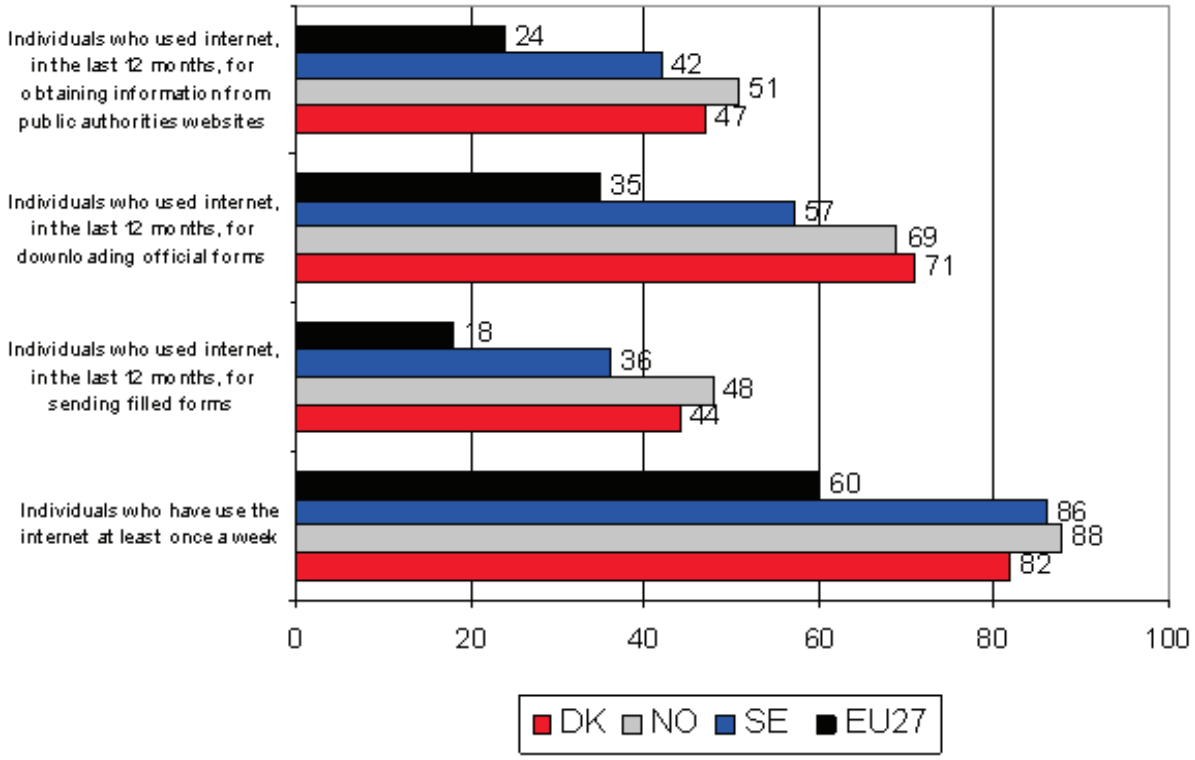
Related to digitisation of existing tasks and processes, the objective of a channel strategy for citizen services is to encourage individuals to take full advantage of the service opportunities offered by different technologies and service channels. Four main types of service requests exist: written, in-person, telephone, digital self-service.

The increased focus on digital channels and online self-service necessitate the ability to use e-Government solutions. In this regard, Scandinavia has a good foundation. 2009 Eurostat data,

3 Exchange rate for Swedish Kronor (SEK) to Euro (€) rate used in this article is SEK 9.38 to € 1.00 (Source: www.xe.com/ucc accessed on 23 November 2010).

in Figure 3 below, shows 82-88% of Scandinavians use the Internet at least once a week, and they substantially outperform the majority of their European counterparts in using e-Government services. Still, there is an unrealised potential for online self-services.

Figure 3. Individuals using the Internet for different forms of interaction with public authorities, 2009 (Eurostat, 2010)



The potential scale of moving citizen services requests and delivery online is supported by Copenhagen Municipality and the consultancy firm Deloitte's data, in Table 1 below. While written requests represent 27% of all requests in Copenhagen, the associated service delivery costs account for 51% of expenditure. Online self-services account for 19% of total service requests, but a mere 1% of municipality service delivery expenditure.

Table 1. Citizen service figures and costs in Copenhagen Municipality (Copenhagen Municipality & Deloitte, 2009).

Citizen service figures and costs in Copenhagen Municipality				
Service entry points	**54**			
Request type	**Requests numbers**	**Requests %**	**Unit cost**	Expenditure %
Written requests	2,544,000	27%	DKK 110 / € 14.77	51%
In-person requests*	5,382,000	18%	DKK 80 / € 10.74	24%
Call centre requests	3,344,000	36%	DKK 40 / € 5.37	24%
Online self-service**	1,800,000	19%	DKK 3 / € 0.40	1%
Total number of requests	13,070,000	27%	Not applicable	Not applicable

Citizen service figures and costs in Copenhagen Municipality				
Service entry points	**54**			
Request type	**Requests numbers**	**Requests %**	**Unit cost**	Expenditure %
* Incl. c. 3.8 million library visits ** Requests on www.kk.dk concerning service offers. Excl. library website visits				

In other words, the cost of service delivery online is between 13 to 36 times less expensive than other forms of service delivery channels. The efficiency potential is partly the result of the different channel characteristics, for instance:

- written (letter or e-mail) requests are often unstructured and miss important personal information, thus requiring follow-up;
- in-person requests at one-stop-shops allow for certain economics of scale, special training, for missing information to be provided by the citizen immediately and for a personal and human touch;
- call centre requests, a virtual one-stop-shop, allows for economics of scale, more efficient turnover, special training, specialisation of teams and for missing information being requested from citizens immediately;
- online self-service, a virtual 24/7 one-stop-shop, allows for economies of scale with the immediate provision of all required information, automated document handling, specialisation and even automated service provision.

Naturally, online self-service also implies that a degree of the cost associated with the actual production of the requested services is transferred from the public sector organisation to the citizen. In return, the citizens have 24/7 access to service requests, from their choice of location (e.g. at home, at work, at the library), and also experience shorter waiting times and generally faster delivery of the requested service (Meyerhoff Nielsen, 2010a).

To encourage citizens to choose different channels, emphasis must be placed on:

- providing people with easy access to the most appropriate service channel and utilising the administration's knowledge of citizen behavioural patterns;
- offering quick and understandable answers and decisions through the appropriate and optimal use of technology;
- bringing local services and information together in forms manageable for the citizen and the city administration.

In practice, this implies easy access to key eServices with high potential usage (e.g. waste collection, finance, leisure, day care, parking licences), optimising the use of one-stop service and call centres and easy access to these in the urban space, user-friendly and user-centric design and access, and better digital information in libraries. The Copenhagen business case consists of retaining the existing number of service requests and quality of delivery, but ensuring that the most appropriate and cost-effective delivery channel is used for a given service. The economic benefits to the city of its channel strategy is estimated to be DKK 23.5 million (€ 3.15 million) annually by 2012. The increase in efficiency is achieved through a consolidation of back-and front-office processes, organisational re-engineering and by making the online and call-centre channels more attractive. More specifically,

the business case is achieved if the city reaches its Citizen 2012 targets, outlined in the table below.

Table 2, Channel optimisation in Copenhagen Municipality 2010-2012 (Copenhagen Municipality & Deloitte, 2009)

Channel optimisation in Copenhagen Municipality 2010 - 2012					
	2009			2012	
Service entry points	54			33	
Request type	Requests numbers	Requests %	Expenditure %	Requests %	Expenditure %
Written requests	2,544,000	27%	51%	12%	33%
In-person requests*	5,382,000	18%	24%	15%	29%
Call centre requests	3,344,000	36%	24%	36%	35%
Online self-service**	1,800,000	19%	1%	37%	3%
Total number of requests	13,070,000	N/A	N/A	N/A	N/A
* Incl. c. 3.8 million library visits ** Requests on www.kk.dk concerning service offers. Excl. library website visits					

Similar to citizens, Scandinavian businesses also already make extensive use of e-Government services, as highlighted by the 2009 Eurostat data presented in Table 3 below. Still, there remain further efficiency gains to be achieved through good service design and user take-up.

The potential of user-centric design is recognised at political level across Scandinavia. Swedish Minister Anna-Karin Hatt for instance highlights the lack of user-centricity when stating that many public *"...agencies have a good internet presence, but their internet solutions are often designed to meet the agency's need rather than the citizens' needs... Moreover, they are often stuck in the kind of narrow thinking that all too often characterises our independent public agencies."* (Regeringen, 2010)[4] User-centric design is particularly relevant for more advanced two-way digital interaction between the public and private sectors, especially for small and medium-sized enterprises (SMEs). For instance, 73-83% of the smallest enterprises (i.e. companies with 49 employees or fewer) use the internet to obtain information, compared to 87-92% of large firms (i.e. companies with 250 employees or more). This difference increases with the level of eService sophistication: For instance, 36-49% of the smallest Scandinavian companies make use of fully-electronic case handling with authorities, compared to 37-64% of large companies.

Table 3, Enterprise using internet for different forms of interaction with public authorities, 2009 (Eurostat, 2010)

	Enterprises using internet for interaction with public authorities - for obtaining information				Enterprises using internet for interaction with public authorities - for returning filled in forms				Enterprises using internet for interaction with public authorities - for full electronic case handling			
	DK	NO	SE	EU27	DK	NO	SE	EU27	DK	NO	SE	EU27
10 or < employees	84	75	83	63	65	69	61	54	45	49	36	42
10-49 employees	83	73	82	60	62	67	59	50	43	47	36	39
50-249 employees	92	87	92	78	79	83	71	72	56	58	42	57
250 or > employees	93	91	93	91	82	87	70	79	60	64	37	63

4 Translated by the authors from the original Swedish quote.

The key point is that citizens and businesses already use online tools and services when dealing with the private sector and that the required infrastructure is in place. The challenge is to encourage increased take-up by challenging users to online options when and where relevant and beneficial from a service quality or economic perspective.

3.6 Highlights and trends

In light of the current recession, the examples outlined in this section highlight a number of Scandinavian trends including:

- Introduction of common technologies allowing for virtual meetings can help cut costs and CO2 emissions but also allow for increased productivity by avoiding time consuming travel for meetings. In additional, teleworking is proven to minimise sick-leave and within some limitations increase the productivity of employees in certain jobs;
- Digitisation of existing process and task such as application forms, permits, invoices and letters entails a number of concrete and quickly realisable economic benefits;
- Simplification and administrative burden reduction can increase internal efficiencies and thereby release resources for other tasks and save cost;
- Strategic focus on citizens' requests and their choice of service delivery channels contributes to make the most efficient use of available resources within a given public sector organisation.

4. … Of Quality and Service Improvements

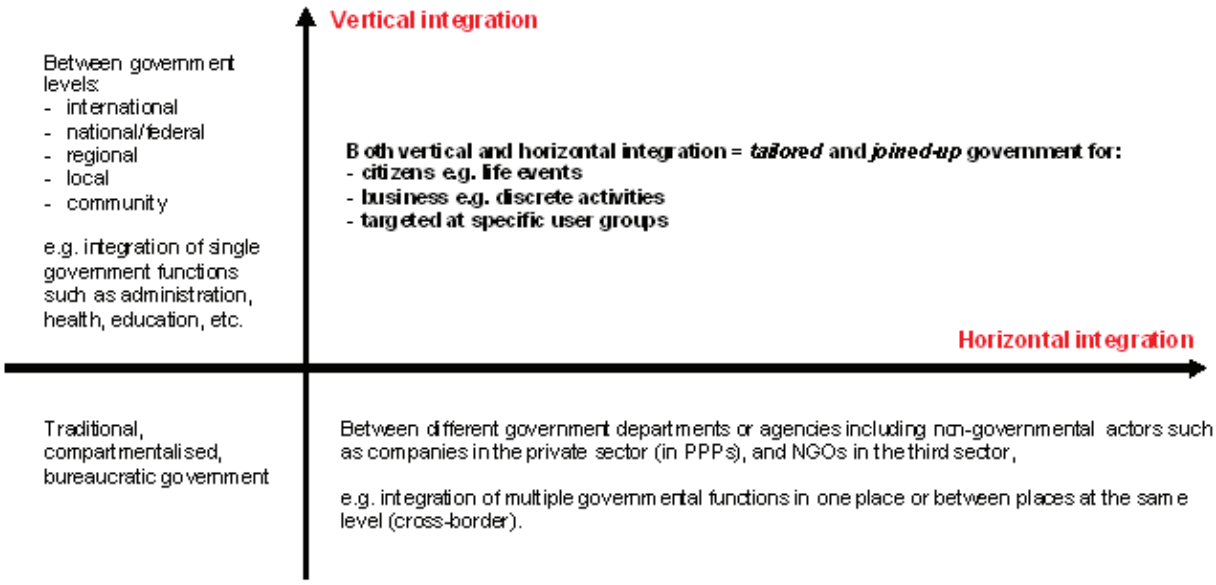
A key question facing organisation is how to achieve identified quality and service improvements. Should it be through cooperation and integrations, or in phases? Should front-office citizen services be prioritised over administrative back-office solutions? While there are many inspirational examples of ICT application in public administration, the most difficult lesson learnt is that despite following standards and good practise, a key challenge remains: The organisational and users' needs must be moulded into a number of complimentary objectives. Goals must be set within an organisation' capacity.

4.1 Vertical and horizontal integration, process and organisational re-engineering

In streamlining government administration, Sweden aims to release resources and achieve an added focus on core operations (Swedish Government, 2010). The full potential of the proposed shared service centres is calculated to reduce costs by SEK 500-1,200 million (€ 53.4-127.9 million), which represents an increased effectiveness of 30% (e-delegationen, 2009). The shared service centres are proposed to be built on existing functions. This is an adjustment compared to Denmark, where major cost saving envisaged failed to be achieved as a total re-design of all operations was undertaken (ibid. p. 77).

The Swedish and Danish initiatives are build on the idea that integration may be vertical, i.e. between different levels of public sector organisations, or horizontal, i.e. between public and private sectors, civil society and NGOs etc., as summarised in Figure 2 below (Meyerhoff Nielsen, 2009b).

Figure 2, Vertical and horizontal integration (Adapted from Millard by Meyerhoff Nielsen, 2009b)



Vertical integration involves different levels of government or public administration, that is, the integration of the international, national/federal, regional, local, and/or the community level. An example may be the integration of single government functions such as administration, health, education, etc. Such single functions or services may be provided by utilising existing back-office processes and organisational structures, but with a shared front-office acting as a single point of entry for citizens and businesses. The need for processes and organisational re-engineering is therefore limited to front-office re-organisation. Good examples of this approach are the thin citizen portals denmark.dk, norge.no and sverige.se launched in the early 2000s (Meyerhoff Nielsen, 2010a), but also the Danish-Swedish Øresund Direct initiative which integrates cross-border information and service provision.

Important to remember is that burden reduction may also be achieved through both vertical and horizontal integration as highlighted earlier in Figure 2. Tailored and linked government implies total re-engineering of the existing processes and involved organisations. In turn, a single front and back-office is the likely result and is illustrated by initiatives such as linked government, single-one-stop-shop windows. While not clear-cut examples of vertical and horizontal integration, the user-centric, single access point, 'My Page' or 'My Business', seen on borger.dk, altinn.no and verksamt.se, are steps in this direction. Likewise, the increasingly thick portals, such as borger.dk, in which key infrastructure components (e.g. My Page) are jointly developed with municipalities. Components and content from the portal is re-used by other authorities free of charge; or authorities add and maintain citizen targeted content on the portal itself (Meyerhoff Nielsen, 2010a and 2010b).

4.2 User-centric services

More difficult to define, and spanning a wider area, are the goals of ICT as an enabler of quality and service improvements. In essence, user-centred services relate to the design and usability of a given solution. As a design philosophy and process, user-centricity focuses on the needs, desires, and limitations of the end-user(s) in relation to a given product or services. Attention to audience, context, accessibility, legibility, language, look and feel are key elements in the design process. Consequently, user-centred design is a multi-stage problem-solving process, not only requiring that

designers and developers analyse and foresee how users are likely to use a product, but also ensuring that the validity of their assumptions is tested in terms of actual user behaviour, the learning curve and, ultimately, successful take-up and use. Two main schools of user-centric design and development exist, the Cooperative, or Participatory, and the Contextual. However, the question is, how does user-centric service design facilitate efficiency and effectiveness?

The involvement of end-users in service design is increasing notably. For instance, through eParticipation, user-testing and surveys, focus groups or personas, borger.dk in Denmark is one e-Government solution which since 2007 has produced content and components based on seven specially developed personas. These 'mock-up persons' are also used to focus dissemination activities and to test new functionalities or solutions on portals. Regular surveys of the borger.dk user-panel also assist in directing development.

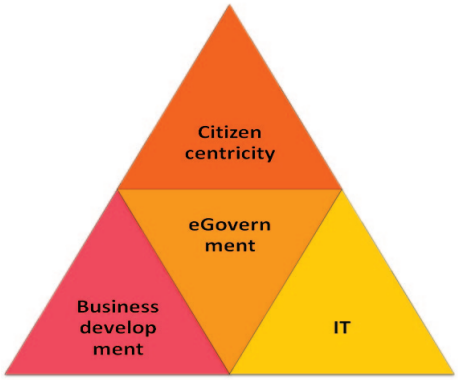
Inspired by PageFlakes, MSN My Page, Google IG and similar, the norge.no My Page functionality was the first European personalised drag-and-drop e-Government solution in 2005. In early 2007, more sophisticated solutions such as genvej.dk and borger.dk were introduced in Denmark.

Essentially, the My Page infrastructure provides a platform for authorities to deliver more user-centric services. It also means that authorities avoid investing in eService delivery platforms, and can instead concentrate on developing content and solutions for the platforms. A well-developed My Page can prevent municipalities from spending time and money on large numbers of personal telephone or written queries. In addition, designed solutions increase people's appetite for online self-service, as illustrated by Copenhagen's channel strategy in the section below and the borger.dk example in Section 3.

The citizen personal platforms, such as My Page, provide a quick and easy overview of personal data, such as income and tax information, and the different service options available. This overview, in turn, enables the user to gain access to e-Government services. Another aspect of user-centricity is direct user involvement. The Luleå University of Technology study "Customer focus for increased use of public e-services", supported by Vinnova, shows that few citizens are aware of electronic services offers from municipalities and that most are developed without user involvement. The aim of this Swedish study is, therefore, to contribute to increased take-up of local government eServices by improving the knowledge of user and non-user: needs, behaviour and attitudes; perceived challenges and possibilities related to local government eServices; and tools and methods that can be used in order to change behaviour and attitudes of various groups of citizens. Findings which are supported by studies in Northern Jutland in Denmark and which emphasise the importance of user-centric design as a tool for authorities to encourage more online self-service and reduce administrative burdens. User-centric design is also closely related to channel strategies, efficiency and productivity gains as outlined below.

In the Swedish municipalities which have progressed furthest with e-Government, the general trend is to develop "My Page" functionalities, allowing citizens to track a given service request, or application online. Amongst these is Täby Municipality, where a genuine service commitment, simple eServices and feedback on status provides good service to citizens. Stockholm Municipality, in particular, has focused on all three corners of e-Government: Citizen centricity, business development and IT, as illustrated in Figure 4. Indications are that this type of coordinated, and resource demanding, effort pay dividends as illustrated by earlier examples.

Figure 4, Three approaches to achieving e-Government (PwC Sweden, 2010)



From a user-centric perspective, the Stockholm Compare Services website allows the user to identify, compare and locate public sector service offerings within a specific neighbourhood. The website incorporates contact information for the city's various agencies and covers approximately 4,000 municipality services from child and senior citizen care to waste recycling centres. A total of 2/3 of Stockholm's inhabitants find the Compare Services website helpful, allowing them an increased degree of choice. The site is used by 100,000 to 150,000 citizens every month, and was awarded second place in the 2009 European e-Government Awards.

A key success factor has been the structured work with commercial realisation, i.e. no initiatives have been started without previously conducting a feasibility study focusing on process analysis, benefit calculations and the visualisation of the intended services. These feasibility studies guide the decision-making process, prioritisation and coordination of individual initiatives vis-à-vis the city's overall e-Government strategy, but also as regards the cost savings in relation to existing processes and operations. Other success factors identified by Stockholm include the need for:

- Clear and centralised coordination, management and leadership;
- Holistic perspective;
- User focus and operational needs;
- Priority-benefit analysis to compare costs, savings and benefits to citizens and the administration;
- Re-use of eService and IT solutions across the administration and for different initiatives (incl. learning from other initiatives);
- Effective IT-support and change management processes must be established firmly in the organisation;
- Centralised contact centres to direct and guides users (internal and external).

4.3 Highlights and trends

In light of the financial crisis, the examples outlined in this section highlight a number of trends. Drawing on the lessons from Stockholm and others, well-designed, executed and appropriately funded ICT initiatives can facilitate quality and service improvements. Addressing user-needs and personalisation, business development and technology, jointly contributes to the success of ICT application in public administration. However, smaller organisations with relatively limited resources like the Täby municipality can choose to initially address one of the angles and still create value

and progress while gradually incorporating other aspects. Unfortunately it is not possible to make a definite conclusion on which approach is the most successful: The lesson is that the chosen method must be based on the resources, means and ability available within the local context.

5. … Through Innovation and Cooperation

Public organisations and legislators have to date accumulated a host of knowledge and experience vis-à-vis ICT use and resource management. Still, they are struggling to find practical ways to join forces and work together to rejuvenate their national economies. More unorthodox examples of cooperation are found in the vacuum between different organisations and their areas of responsibility. Inspiring examples can be found within the Scandinavian governance models where organisations identify real needs for services outside the traditional areas of responsibility or where these overlap. Cooperation and innovation nonetheless require open access to information, the use of common standards, and both insight and foresight.

5.1 Re-use of content

Public sector data is seen by many as a veritable treasure trove of untapped potential for efficiency gains and innovation. According to IT analyst Gartner, the value of releasing government data to developers is somewhere between DKK 100 and 1,000 million (€ 13.42 and 134.23 million). Based on Gartner's analysis of the Danish IT- and Telecom Agency, the potential in Denmark is around DKK 3.3 billion (€ 0.45 billion), although the exact potential is not known. Within the EU, it is believed that the total value of the release of public sector data for development is in the region of €27 billion – although the exact method for arriving at this estimate is not known. What is certain is, that developers of, for example, mobile apps can innovate and invent applications based on government data for large user groups, as seen in the USA (Elkær, 2010). Another example is the November 2010 Data Camp organised by the Danish National IT- and Telecom Agency with the IT University. Twelve public authorities and 40 developers, data analysts and IT experts created 18 digital products plus various ideas in a single day – or as Minister for Science, Innovation and Technology Charlotte Sahl-Madsen said when opening the Camp: *"The idea is to create growth and new digital solutions for citizens and public authorities. Denmark is a country without many of the traditional raw materials, but we can find the raw materials in the data and building application on this..."* (Danish National IT- and Telecom Agency, 2010; Computerworld, 2010a)[5]

The business case of Gov 2.0 in a global and Scandinavian context is still not on terra firma but is slowly emerging. For instance, Stig Jönsson (head of the Swedish Mapping, Cadastral and Land Registration Authority) emphasises the potential of the decision of 20 Swedish authorities to cooperate on geographical data to ease access to map data and registry information when stating that the initiative *"...will lead to safer rescue operations, better planning of neighbourhoods and roads, more intelligent tools for placing environmentally sensitive industries. The corresponding solutions need to be developed for other areas to develop e-Government. There are no established forms of how this kind of extensive collaboration should be organised. An important driver and opener requirements for the work has been the EU directive INSPIRE (Infrastructure for Spatial Information in Europe)"* (Lantmäteriet 2010).[6]

In Denmark the national citizen portal, borger.dk, has, since 2007/2008, indirectly made use of the Creative Commons principles in relation to its content. This content is not only available for free

5 Translated by the authors from the original Danish quote.
6 Translated by the authors from the original Swedish quote.

re-use, but local content (e.g. municipality specific information) may be added so that it "folds out" when a portal user specifies his/her municipality. In turn, the full content, including local content, can be "imported" by other authorities for re-use. The business case for this Gov 2.0 inspired re-use and sharing of content includes personnel savings of approximately 0.25 man-years annually for each municipality choosing to automatically update their websites with relevant content from borger.dk. In practice, municipalities, such as Rødover and Frederiksberg, annually use and update their websites with borger.dk content equivalent to 500+ A4 pages of text. The released 0.25 man-years is used by a number of municipalities to increase the information level and quality of location specific content added to borger.dk, leading to additional quality improvements for borger.dk content. To increase the efficiency and quality gains of the initiative, borger.dk is running a series of hands-on training courses for editors. To date, 54 of 98 Danish municipalities have registered local editors to make use of the content 'import/export' functionality on borger.dk (Meyerhoff Nielsen, 2010b).

5.2 Joint needs analysis, efforts and combined data lead to improved service delivery

A good example of a much-needed service with a huge impact and potential cost saving based on the cooperative approach is the Ledningskollen service run by the Swedish Post and Telecom Agency (PTS). Ledningskollen coordinates a large number of private and public entities with the objective of securing a robust infrastructure. Ledningskollen helps private individuals, companies, municipal government and other public authorities to check the location of underground cables before any digging is undertaken. The system is configured to be utilised by many different cable owners, from major operators to municipal networks. The objective is to encompass all parties, and all cable owners are encouraged to have their areas of interest registered. The system divides Sweden into one kilometre square quadrants, regarding which the cable owners provide details concerning the existence of any underground cables. An organisation, or individual, planning to excavate, highlights the relevant area on an electronic map interface, whereby the service then identifies the cable owners an impacted by the planned digging and the service then sends an automatically generated query to all involved parties. For security reasons, information regarding the exact location of cables is not contained in a database connected to the internet. The details are provided in the subsequent dialogue following the application. If no underground cables are located in the area to be excavated, the party planning to dig will be informed about this immediately.

Another example of cooperation is the informal good practice exchange which has taken place since the early portal days in the Nordic and Scandinavian countries through the Nordic Portal Network and directly between citizen portals, such as norge.no and borger.dk, in the continued development of citizen-centric and personalised My Page platforms (Borger.dk, 2010). On a national level, cooperation related to My Page platforms is also increasingly taking place, not only as joint development projects between different levels of government (see Section 4) but also in terms of data collection. As a personal page and entrance to the public sector, My Page solutions in Scandinavia provide access to personal information stored by the authorities. Interoperability and the sharing of data is, thus, required to give users access to personal information, from databases containing tax information, property details, health and address information, while giving access to eServices specifically related to the geographical and personal circumstances. The benefit to the user is a personalised universe through which to contact the authorities. In this regard, key components such as electronic post and documents boxes to receive, send and store digital letters, help create a critical mass of traffic. The Danish eBox solution is, for instance, integrated on borger.dk's My Page solution.

5.3 Joint development of key components

Like cooperation, joint development of key technology components has a number of benefits. As illustrated by the development and implementation of international standards for XML, UBL, electronic identity management (e.g. STORK, 2010) and commerce (e.g. Northern European Subset of the UBL 2.0 standard, 2010 or PEPPOL, 2010) interoperability ensures the meaningful exchange and interpretation of content. Additional benefits include common look-and-feel for end-users, relative ease of future development and combinations of new and, existing systems and solutions and, not least, economic benefits (Meyerhoff Nielsen, M. 2009a).[7]

The economic potential of the joint development of key infrastructure components is illustrated by the cooperation between the Danish national citizen portal borger.dk and five municipalities. Beach & Donslund (2009) have, for Copenhagen Municipality, analysed the available platforms on which the city bases its "My Digital Citizen".[8] The report concluded that the joint upgrade of the existing borger.dk My Page was the cheapest of three options available to the City. The borger.dk platform is DKK 1.6 million (€ 0.22 million) cheaper for Copenhagen to acquire and approx. DKK 3.2 million (€ 0.43 million) cheaper in annual operating costs (incl. support and maintenance) than the second cheapest provider which was analysed (Borger.dk, 2010). Joint development similar to that of the borger.dk initiative means that authorities can minimise their individual infrastructure investments and can concentrate on delivering content for the infrastructure.

In response to increasing demands for a more cooperative approach towards eService development, it is interesting to see that many services are still derived from dedicated persons, rather than organisations, before they are eventually taken onboard as the organisation's operation. Electronic services do not necessarily have a natural driver or owner and are, therefore, dependent not only on cooperation between organisations, but also on dedicated people. A dependency supported by Danish evidence indicating that up to 80% of good and innovative ideas come from citizens, and politically by Swedish Minister for Information Technology and Regional Affairs, Anna-Karin Hatt, stating that the new Digital Agenda for Sweden will build *"...the best ideas, the most exciting examples and the boldest proposals. An agenda that makes us want to, and dare to, aim high and test our limits. And that hopefully makes us achieve more than we would otherwise have been able to achieve."* (Regeringen. 2010)[9]

5.4 Highlights and trends

In light of the financial crisis, the examples outlined in this section highlight a number of Scandinavian trends including:

- An emerging business case for Gov 2.0 including the re-use of public sector content and key service and infrastructure components.
- Similarly the economic potential of the joint development of key infrastructure components is illustrated by the successful development of a new My Page functionality in Denmark through a joint project between the national citizen portal borger.dk and five municipalities.
- Still cooperation and innovation nonetheless require open access to information, the use of common standards, and both insight and foresight. A point illustrated by PTS and the Swedish

7 Interestingly the Scandinavian countries have all been active members and drivers within the STORK, the Northern European Subset of UBL and/or PEPPOL initiatives.

8 "My Digital Citizen" is a collection of user-centric self-service options and personal data sets accessible to citizens when logging in with their digital signature.

9 Translated by the authors from the original Swedish quote.

Ledningskollen initiative which through joint needs analysis and efforts now coordinates a large number of private and public entities with the objective of securing a robust infrastructure and thereby improved services and economic benefits for the partners.

6. Conclusion

Returning to the initial question raised in this think-paper, what is the role which ICT and e-Government can play in successfully assisting governments' responses to the challenges arising due to the current state of the economy and public services in general? The number of actual initiatives initiated in response to the economic recession has been limited, and the examples and data presented in this paper can be summarised as simply a trend towards "more of the same". That is, the continuing digitisation and expansion of ICT in Scandinavia as an enabler increasing the efficiency and effectiveness of the public sector. In spite of the general economic concerns and decreased revenue (tax) levels, it is not surprising that the maximisation of cost savings takes precedence as the Swedish example of shared service centres underlines.

However, "more of the same" will only go so far, and increasing the socio-economic benefits of ICT should be taken further. This should include an increased focus on both horizontal and vertical integration, process and organisational re-engineering. User-centric design and development is increasingly practiced in Scandinavia, and this, coupled with the potential of service delivery channel strategies, offers a real and practical opportunity to increase public sector productivity in light of increasing citizen demands and financial constraints in the short- and long-term. This approach resonates well in the Scandinavian context where 82-88% of citizens use the internet at least once a week.

Success stories as regards a cooperative attitude towards eService development in Scandinavia include the Swedish Leningskollen's service for underground cable localisation information to the public. Whilst the business case for Gov 2.0 may still be in its infancy, the Danish citizen portal borger.dk and municipalities are at the forefront in terms of joint development and re-use of key infrastructure components and content. Finally, administrative burden reduction in Norway and Denmark and the use of ICT such as videoconferencing for meetings, have proven the qualitative, productivity, economic and environmental credentials.

The examples and business cases presented argue in favour of seeing ICT as a continuing enabler of e-Government by helping to rethink the way things are done. Resource limitations cannot be counteracted by high tax rates as this can ultimately be detrimental to the overall competitiveness of a country; instead, the challenge is to create effective, high quality, user-centric services with the same or fewer available resources, and ICT is a many-faceted, proven and cost-efficient tool to drive such development. The enabling character of ICT and the original objectives of e-Government must therefore be applied even more rigorously. If not, authorities will not be able to take full advantage of the short- and long-term productivity, efficiency and qualitative gains which can be achieved by effective and innovative ICT use. Or put differently, the current financial crisis and short term economic considerations, although important, must not be allowed to crowd out the consideration of long-terms objectives.

References

Altinn/Brønnøysund Register Centre, Norway (2009).

Archmann, S. and Meyerhoff Nielsen, M. (2009). Reducing administrative burden Information communication technology tools to benefit citizens, businesses and public administrations, Metteg 2009 Conference: Vigo.

Arbejdsmiljø (2010). Hjemmearbejde opleves som et priviligium, retrieved December 23, 2010, issue no. 1, from http://www.arbejdsmiljoviden.dk/~/media/Portal/PDF/AM-0110.pdf.

Beyer & Holtzblatt (1998). Contextual Design, Kaufmann: Not given.

Bjørke, K. (2009). Administrative Burdens Reductions for Businesses – and eGov as a tool, EIPA-EDKKA seminar: Athens.

Borger.dk (2011). Retrieved January 10, 2011 from http://www.borger.dk.

Borger.dk (2010). Internal documentation and sources, Danish National IT- and Telecom Agency: Copenhagen.

Computerworld.dk (2010a). Danmark sidder på milliardpotentiale i offentlige data, retrieved December 1, 2010 from http://www.computerworld.dk/art/111997?page=2.

Computerworld.dk (2010b). Derfor SKAL du arbejde hjemmefra, retrieved December 1, 2010 from http://www.computerworld.dk/art/53761.

Copenhagen Municipality and Deloitts (2009). Citizen.2012, Service- og kanalstrategi for Københavns Kommune 2010-2012, Copenhagen Municipality: Copenhagen.

Digi.no (2010). Retrieved December 1, 2010 from http://www.digi.no/822060/roys-vurderer-flere-videomoter-i-staten.

Danish Ministry of Employment (2009). Væk med bøvlet, retrieved December 1, 2010 from http://www.bm.dk/Ministeriet/Om%20ministeren/Kampagne/Laes%20mere%20om%20initiativet.aspx.

Danish Ministry of Science, Innovation and Technology (2010a) Digitale veje til vækst – Videnskabsministeriets digitale arbejdsprogram, Danish Ministry of Science, Innovation and Technology: Copenhagen.

Danish National IT- and Telecom Agency (2010) Data Camp: Offentlige data blev forvandlet til digitale produkter, retrieved December 23, 2010 from http://www.itst.dk/nyheder/nyhedsarkiv/2010/data-camp-offentlige-data-blev-forvandlet-til-digitale-produkter.

Daarbak, T. (2010). Sådan kan kommunerne hente millioner på nettet, retrieved December 1, 2010 from http://www.computerworld.dk/art/112620?cid=4&q=s%E5dan+kan+kommunwe&sm=search&a=cid&i=4&o=2&pos=3.

E-delegationen (2009). Strategi för myndigheternas arbete med e-förvaltning, retrieved December 1, 2010 from http://www.edelegationen.se/sites/default/files/SOU_2009_86.pdf.

Elkær, M. (2010). Danmark sidder på milliardpotentiale i offentligdata, retrieved December 1, 2010 from

http://www.computerworld.dk/art/111997?a=newsletter&i=3460&utm_source=computerworldnewsletter&utm_medium=newsletter&utm_campaign=Danmark+sidder+p%E5+milliardpotentiale+i+offentlige+data+%2F+Din+h%F8je+l%F8n+er+farlig+%2F+Her+er+vejen+til+et+sikkert+datacenter.

Eurostat (2010). ICT indicators, Eurostat: Luxembourg/Brussels.

Højhastighedskommitteen (2010). Danmark som højhastighedssamfund, National IT- and Telecom Agency: Copenhagen.

Lantnmäteriet (2010). Retrieved December 23, 2010 from http://www.lantmateriet.se/templates/LMV_NewsPage.aspx?id=19991.

Ledningskollen (2010). Retrieved December 23, 2010 from https://www.ledningskollen.se/English/Home.

Meyerhoff Nielsen, M. (2009a). Burden reduction through service supply: Trends in service design and the needs of citizens, EIPA-EDKKA seminar: Athens.

Meyerhoff Nielsen, M. (2011). Danish e-Government Success Factors: Strategies and good practice examples. In Piaggessi, D., Sund, K.J. and Castelnovo W. (Eds.), Global Strategy and Practice of e-Governace: Examples from Around the World, IGI Global: Hershy.

Meyerhoff Nielsen, M. (2010a). Implementation: The supply side and the public sector needs, Maastricht School of Management Executive Programme in eGovernance: Maastricht.

Meyerhoff Nielsen, M. (2009b). Service supply and the needs of public administration, EIPA-EDKKA seminar: Athens.

Meyerhoff Nielsen, M. (2010b). Retrieved December 1, 2010 from http://www.linkedin.com/groupItem?view=&gid=91073&type=member&item=27005338&qid=1fe74c9d-a2eb-4476-b2b8-7285e9080eff&goback=%2Egmp_91073.

Moltke, I. (2007/2009). Building in the Knowledge Society, Danish National Agency for Enterprise and Construction: Copenhagen.

Norge.no (2010). Retrieved December 1, 2010 from http://www.norge.no.

NES - Northern European Subset (2010). Retrieved February 1, 2011 from http://www.nesubl.eu.

PEPPOL – Pan-European Public Procurement Online (2010). Retrieved February 1, 2011 from http://www.peppol.eu.

PriceWaterhouseCoopers (2009). The Economic Case for Digital Inclusion, retrieved December 23, 2010 from http://raceonline2012.org/sites/default/files/resources/pwc_report.pdf.

PriceWaterhouseCoopers (2010, not published). Ekonomiska effekter av ökad Internet- användning i Sverige, PwC: Stockholm.

Regeringen (2010). Swedish Minister for Information Technology and Regional Affairs, Anna-Karin Hatt, retrieved 1 December, 2010 from http://www.sweden.gov.se/sb/d/13740/a/155465.

Schuler & Namioka (1993/1997). Participatory Design. Erlbaum, L. & Helander. (Eds.) Helander's Handbook, HCI: Elsevier.

STORK – Secure Identity Across Borders Linked (2010). Retrieved February 1, 2011 from http://www.eid-stork.eu.

Swedish Government. (2010). Nytt servicecenter ska hjälpa myndigheterna med administration, retrieved December 1, 2010 from http://www.regeringen.se/sb/d/13455/a/155114.

Täby municipality (2010). Retrieved December 1, 2010 from http://service.taby.se.

Verksamt.se (2011). Retrieved December 1, 2010 from http://www.verksamt.se.

Vinnova - Agency for research and innovation for sustainable growth (2010). Fä känner till kommuners e-tjänster, retrieved December 1, 2010 from http://www.vinnova.se http://www.vinnova.se/sv/Resultat/Tema/e-Forvaltning/Fa-kanner-till-kommuners-e-tjanster/.

World Bank (September 2009). Information and Communications Technology Issue Brief, World Bank: Washington DC.

Økonomistyrelsen (2006). Økonomistyrelsen, Copenhagen.

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The impact of the financial crisis on Danish e-Government Strategy

This article examines which Danish e-Government approaches have been adopted as a consequence of the current economic crisis. Denmark has since the mid-1980s focused on increasing efficiency and effectiveness in the public and private sectors through ICT, with a national e-Government strategy in place since 1999. Since then, the Danish government has made considerable efforts to ensure the alignment of the e-Government programme with targeted public sector reform initiatives (e.g. the Quality Reform and De-Bureaucratisation Programme) and the co-ordination of the various governance bodies in charge of their implementation. The development of specific digital solutions within the framework of the national e-Government strategies (e.g. medi-card, Document Box, and digital signatures) are examples of this alignment.

Despite these initiatives this article shows that the Danish e-Government strategy has currently adopted a reluctant approach towards new e-Government initiatives and, in particular, Gov 2.0. Dictated largely by the Ministry of Finance which controls the purse strings, this approach can be seen as a consequence of the financial crisis. Thus, the current Danish e-Government strategy, conducted jointly by the Danish Ministry of Science, Technology and Innovation and the Ministry of Finance, primarily focuses on internal e-Government issues such as coordination improvements and increased efficiency within the public sector. This review of the Danish e-Government initiatives therefore concludes that the earlier strategies have been continued and not changed because of the financial and economic crisis. The measures taken because of the recession have not had a positive impact on e-Government development in Denmark. This can be explained by the fact that e-Government is not an explicit area of new investment, but rather the subject of retrenchment and a continuing focus on the use of the business case model and relatively short-term benefits.

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> “The recent financial recession and the measures taken in response have not had a real impact on e-Government development in Denmark. The Danish e-Government strategy is currently adopting a hesitant approach dictated largely by the Ministry of Finance which controls the purse strings. This focuses on internal e-Government issues such as coordination improvements and increased efficiency within the public sector, rather than on new Gov 2.0 initiatives with benefits which are difficult to measure.”

article is based on relevant literature and interviews with these two government officials, responsible for the digitisation strategy in Denmark.

1. Introduction

In coming years there will be increasing pressure on public finances in Denmark. In this context, digitisation is one of the enabling mechanisms to modernise public services and simultaneously tackle problems of demographic change (ePractice 2010). The Danish Ministry of Science, Technology and Innovation and the Danish Ministry of Finance (the other ministry responsible for e-Government) have signalled that there will be increased focus on labour-saving technology as well as on measuring the effects and impact of ICT.

In the last decade, Denmark has repeatedly been highlighted as one of the most advanced examples of countries using e-Government and technology in the public sector (United Nations 2008).[1] Furthermore, the OECD has stated that Denmark is a "mature" e-Government country (OECD 2010a p. 29). However, the question is whether the financial and economic crisis has changed or stopped the transformation of the public sector? The OECD defines "transformation of the public sector" as the set of processes leading to a change of the features of the public sector from a static organisation-driven model to a dynamic user-driven model. In this way, transformation is about creating the environment and the basic conditions for continuous adaptation to changing demands and contexts (OECD 2007).[2]

The central question is how the increased pressure on the economy and public services influences the approach that has been taken in Denmark and how e-Government can address these challenges? Is Danish e-Government mostly focused on public sector efficiency and productivity, or has the financial crisis been a lever to politicise the e-Government domain to introduce new user-driven services to increase the quality of public sector services?

In an attempt to answer these questions, this paper will look at the recent and up-coming Danish e-Government strategies and the readiness for significant e-Government investments in Denmark (United Nations 2009), and will elaborate on the options the Danish government believes e-Government will lead to:

1. increased efficiency and productivity;
2. improve the quality of public services; or
3. both twin goals of performance - efficiency of the public sector and its effectiveness in delivering high-quality services?

In relation to the overall e-Government strategy, the paper discusses actual examples which the Danish government has implemented in response to the crisis. It looks at whether e-Government has been and is being used as an enabling strategy in the current economic crisis in both the short and long term.

Denmark, like most other OECD countries, conceives e-Government not as a goal in itself but as a means to achieve policy ends. It is regarded as one of the most effective mechanisms, and as a necessity rather than an option to reach efficiency, productivity and service goals within the public

1 See for example: UN homepage: 'Denmark ranks second globally in digital management', retrieved December 7, 2010 from: http://www.unpan.org/Library/MajorPublications/DELUNEGovernmentSurvey/PublicEGovernanceSurveyintheNews/tabid/651/mctl/ArticleView/ModuleId/1555/articleId/16152/Default.aspx

2 "E-Government as a Tool for Transformation", (GOV/PGC(2007)6), Unclassified, 28 March 2007, OECD, Paris, France.

sector. The purpose of this paper is to examine whether the recent financial crisis and the measures taken because of the recession have had a positive impact on e-Government concerning:

- increased awareness of the necessity of efficient use of e-Government;
- more focus on e-Government performance, including measurements of the actual outcomes and impact;
- more focus on large e-Government domains such as whole government approaches; and
- increased readiness for larger investments (United Nations 2010).

The paper is based on:

- an analysis of the Danish e-Government strategies;
- actual initiatives implemented in the last five years in Denmark; and
- statements from two government officials responsible for the digitisation strategy in Denmark, Ms Marie Munk, Deputy Director General of the Danish National IT and Telecom Agency and Mr Lars-Frelle Petersen, Head of the Digital Task Force in the Ministry of Finance.

Thus, the paper will provide details on applications, means of use and dissemination in the current Danish e-Government strategy.

The sections deal with:

- Section 2: ICT uptake and significant e-Government projects in Denmark.
- Section 3: the focus of previous Danish e-Government strategies.
- Section 4: e-Government project examples with efficiency measurements.
- Section 5: the impact of the financial crisis on the current Danish e-Government approach.
- Section 6: The emerging fourth Danish e-Government strategy. The second last section looks at the challenges of the chosen Danish strategy and further steps on how e-Government can be an enabler and a partnership model for the implementation of further initiatives in a Danish perspective.
- Section 7: Conclusions

2. ICT Uptake and Significant e-Government Projects in Denmark

- During the last decade, Denmark has repeatedly been highlighted as one of the most advanced examples of using e-Government and technology in the public sector, and has achieved high rankings in various Eurostat statistics, European Commission benchmarking (cf. Figure 1), a second position in the 2005 and 2008 United Nations e-Government Readiness Ranking, etc[3].

3 See for example the ranking of Denmark here: http://www.dti.dk/_root/media/37437_i2010%20Action%20Plan%20Progress%20Study%20Summary%20Report.pdf

Figure 1: Selected ICT, e-Government statistics and rankings for Denmark and EU27

	Denmark 2009	EU27 2009	Ranking
Total DSL coverage (as % of total population)	100.0	94.0	1
3G coverage (as % of total population)	99.5*	N/A	2
% of population who regularly use the internet (min. once a week)	82	60	4
% of population who use the internet daily (daily or almost daily)	72	48	3
% of population who have never used the internet	11	30	3
% of households with broadband connection	76	56	3
% of enterprises with (fixed) broadband connection	80	83	17
% basics public services for citizens fully available online	75	66	11
% of basic public services for enterprises fully online	100	86	1
% of population using e-Government services	67	30	1
% of publication using e-Government services for returning filled-in forms	33	13	1
% of enterprises using e-Government services	90	71	4
% of enterprises using e-Government services for returning filled-in forms	66	55	8

Source: Eurostat 2010

Other developments include the creation of individual domain areas for citizens:

- Borger.dk is a public service portal which groups and structures a large number of citizen services from different providers and provides information about relevant public and administrative bodies.[4] It gives direct access to both central government services and regional and local (municipal) services, as well as information on regulation, procedures, etc. It also has a "MyPage" facility so individual citizens can structure the services and information they are interested in to suit their own needs. (See also section 4.)
- Sundhed.dk is the official Danish eHealth Portal for the public Danish Healthcare Services ('sundhed' means health in Danish).[5]

Business-focused services are provided by Virk.dk as a business internet portal monitored by the public sector in Denmark. Its overall objective is to relieve Danish companies from administrative burdens and to provide a single entrance to the public sector. One of the services that Virk.dk provides is templates to electronic invoices, so that small and medium-sized enterprises are able to send electronic invoices to public customers.[6]

There are also joint solutions for both citizens and businesses such as tax-related services:

4 For more information about www.borger.dk see: www.borger.dk/OmBorgerDK/Otherlanguages/Sider/Engelsk.aspx
5 For more information about sundhed.dk see: www.sundhed.dk/profil.aspx?id=11062.105
6 At www.nemhandel.dk the benefits of using electronic invoices by companies are explained. For more information about NemHandel and Virk.dk see http://www.epractice.eu/node/277209) and.

- Skat.dk is the Danish government body responsible for collecting taxes and duties. Skat has successfully introduced an e-tax system where both citizens and businesses electronically fill in information about their finances.
- Skat's submission system is based on an easy but very secure personal identification application, called NemId, which can be used from any PC.[7]

The above initiatives are anchored in joint digitisation and interoperability standards.

The Committee for Digital Administration, currently known as the Digital Taskforce, located in the Centre for Efficiency and Digitisation in the Danish Ministry of Finance, has been a major player in the development of Danish e-Government policy. Another major player in the political context has been the Danish Ministry of Science, Technology and Innovation (VTU), and in particular the National IT and Telecom Agency (NITA). In this way, the Danish e-Government policy domain is located both in the Ministry of Finance and in the Ministry of Science, Technology and Innovation.

The technological context has also influenced the emergence of e-Government policy in Denmark. As the data in Figure 1 show, Danish DSL coverage in 2004 was 98% and this has obviously enabled an early use of public platforms for public sector information in Denmark (OECD 2003)[8].

Socio-economic factors have also contributed to the emergence of e-Government policies. The strong Danish economy up though the 1990s and 2000s has enabled politicians to invest in e-Government strategies. Moreover, the socio-cultural context, such as high trust in government and a high level of digital literacy (eSkills), has enabled the early emergence of collaborative e-Government policy in Denmark starting in 1995 (Dybkjær-Christensen 1996).

3. Historic View of Danish e-Government Strategies

The motivation behind the first Danish e-Government strategy was to make Denmark a leading information and knowledge society while preserving the welfare state model and associated values (Meyerhoff Nielsen 2010). The first real Danish e-Government strategy was "Towards e-Government: Vision and Strategy for the Public Sector in Denmark (2001-2004)" (Danish Government 2002). This strategy marked the start-up of joint digitisation cooperation between the municipal, regional and state levels of the Danish administration, which is the basic concept behind the Danish approach to e-Government. After this strategy came "Realising the Potential (2004-2006)" (Danish Government 2004), which added momentum to the development of the public sector's internal digitisation.

Building upon the experiences gained during the implementation of these two e-Government strategies, the Danish government launched its newest strategy "Towards better digital service, increased efficiency and stronger collaboration" (2007-2010). This focuses on establishing frameworks and structures to stimulate multi-level collaboration and co-operation across levels of government in order to foster co-ordination across functional areas and support an efficient and effective development of e-Government. The bywords are prioritisation and collaboration within the public sector. Consequently, the strategy focuses on the gains resulting from:

- digitisation focused on creating improvements in the service to citizens and businesses;
- digitisation enabling resources to be transferred from administration to value adding citizen-

7 For more information about NemId see https://www.nemid.nu/om_nemid/about_nemid/, and for information about Skat.dk and an example of the personal submission system see. http://www.skat.dk/SKAT.aspx?oId=1812700&vId=0 and http://www.skat.dk/getFile.aspx?Id=70709

8 For examples see page 11: http://www.oecd.org/dataoecd/41/0/17130709.pdf

focused service; and

- coordination and prioritisation of digitisation efforts in the public sector through more binding, cross-governmental collaboration at all levels (Danish Government 2007).[9]

One of the main goals of the 2007-2010 Danish e-Government strategy has been to make it easier for citizens and businesses to contact the public sector and ensure the development of coherent and effective digital services to stimulate collaboration within the public sector. The strategy has three focus areas:

1. Better digital service
2. increased efficiency; and
3. more cooperation,

Referring to this strategy, the OECD specifically notes in the country report "Denmark - Efficient e-Government for smarter public service delivery" (OECD 2010a):

- Digitisation efforts are primarily administrative in nature and focused on the back office.
- ICT use is still anchored in existing administrative silos getting in the way of cross-organisational and holistic thinking and cooperation.
- Initiatives are primarily technocratic in nature and their political anchoring does not appear to be strong (Danish Government 2010)

Thus, the OECD does not find that Denmark has an outgoing and ambitious e-Government strategy. Moreover, the OECD recommends a clear e-Government leader with a defined mandate and responsibility to improve Danish digitisation efforts, in particular as the STS mandate (the Steering Committee for Joint Cross-Government) is unclear (OECD 2010 p.14).

According to both the OECD and the UN, political commitment and a clear vision for an e-Government strategy are particularly important in light of the depressed economic situation and public budget deficit following the 2008 financial crisis (OECD 2010 p. 23). Clear objectives are particularly important to ensure optimal use of resources in the modernisation and digitisation process in the public sector. This importance is further cemented by an increasing number of public sector employees reaching retirement, labour shortages as the proportion of older people increases in the years to come, increased citizen expectation about the quality of public services and international competition, and not least in a Danish context an alarming drop in productivity and general growth of the public sector (High Speed Committee Report 2010).[10]

In this way, the road is open to more efficiency-focused e-Government initiatives – the question is whether the road is also open for the implementation of more Open Government and Gov 2.0 initiatives such as user-centric and user-driven services. Thus, the focus is shifting from administration services to everyday services?

9 See the 3rd Danish e-Government Strategy 2007-2010 page 6: http://www.modernisering.dk/fileadmin/user_upload/documents/Projekter/digitaliseringsstrategi/Danish_E-government_strategy_2007-2010.pdf

10 See page 6 in the January report from the High Speed Committee: http://en.itst.dk/policy-strategy/the-high-speed-committee/High%20Speed%20Committee.pdf

4. Danish e-Government Focus on Efficiency

Two major projects not mentioned in Section 2 are the Quality Reform (Danish Ministry of Finance 2009a) and the De-Bureaucratisation projects initiated by the Danish Ministry of Finance to improve the efficiency of public sector administration (Danish Ministry of Finance 2009b). The Quality Reform initiative develops comparative user satisfaction reports on day-, elderly- and other care institutions in order to promote free choice between, for example, public and private hospitals. These service evaluations, carried out on a bi-annual basis, are still at their first level of development but could turn out to become a very powerful enabler of user-driven innovation in the future, in combination with Gov 2.0 initiatives.

The De-Bureaucratisation plan published in March 2009 by the Danish Government is intended to set the path for government initiatives to reduce the administrative burdens on businesses and ensure efficient business regulation. The aim is to intensify efforts to reduce inconvenience and bureaucracy and create better conditions for growth. The plan incorporates 33 selected initiatives, grouped into four areas:

- better conditions for start-up and running businesses;
- easy access to regulatory authorities;
- less and simplified reporting; and
- efficient and focused inspections (Danish Government 2009).

Although the overall focus of Danish e-Government initiatives is on efficient public sector administration, there are also examples that focus on user-centric and user-driven services and shifting the focus from administration services to everyday services, both in terms of electronic and other services (ENISA 2010). Since the beginning of the financial crisis in 2008 there have, however, been no central e-Government initiatives to stimulate Gov 2.0 services as such, although an example of such an initiative which is not part of the current e-Government strategy is:

4.1 Danish 'Open Data Innovation Strategy' (ODIS) Initiative

The ODIS initiative is about creating easier and more uniform access to public data as raw material for the private sector in the development of innovative digital products and services, useful analyses, data visualisations and data journalism.

Access to government data provides the basis for new services and different analyses, new information and better insights that are useful to citizens and businesses alike. ICT companies will be able to create new business in developing digital services and advanced content based on public data, and citizens can convert ideas and creativity into practical solutions to everyday problems. Open and available government data is therefore seen by NITA as a key resource in this process to benefit Denmark's competitiveness and strengthen openness, participation and democracy.

The lack of a uniform practice is a significant barrier for innovative businesses and creative citizens looking to re-use public data. This means that many businesses and entrepreneurs do not know that specific data exist and that many public authorities are not aware of the potentials of private re-use of their data. Moreover, among the public authorities there is considerable difference about whether companies and entrepreneurs can access data.

Therefore, NITA has launched the initiative 'Open Data Innovation Strategy' and will be working

on developing a vision and a concept for how a business, an entrepreneur or a citizen can access government data in a uniform way – possibly creating a "one entry to public data re-use" policy and service, where the legal, economic and practical aspects are dealt with in a uniform and efficient manner (NITA 2010a).

According to NITA's Deputy Director General, Marie Munk, the ODIS initiative involves making it easier for the private sector to gain access to the use and the re-use of public data. ODIS aims at having three effects:

1. Public data can be used as 'raw material' in the private sector's development of products and services and as 'business intelligence' that can strengthen the business;
2. Public data can be used to create better public information and services; and
3. Public data can help to strengthen knowledge, insight, collaboration and democracy. In this way ODIS can create good conditions for eDemocracy.

4.2 Borger.dk

Another example is the free re-use of borger.dk content including texts and illustrations. Since 2007/2008 the use of creative commons principles has indirectly been in effect on borger.dk. The borger.dk content can be "imported" by other authorities – for example by municipalities for re-use. The original business case estimates that an average Danish municipality saves 0.25 full time employees/year if 80% of their web content is automatically updated from borger.dk. In practice, some municipalities, such as Rødovre and Frederiksberg, have chosen to utilise this release of human resources to increase the amount and quality of content on their websites – importing approximately 500 and 300-600 A4 pages of text respectively per year (borger.dk 2010). Not only is borger.dk content freely available for re-use (e.g. by municipality), borger.dk is also running a series of hands-on training courses for website editors, not only for capacity/skills building but also to increase actual use. To date 52 of 98 municipalities have registered editors for local content (borger.dk 2010).

4.3 Digital Construction

In 2009, the consultancy company COWI published the report "Digital management of buildings from cradle to grave". The report assessed the benefits to be derived from a common public database for building and maintaining buildings (COWI 2009). All information about a building can be made accessible to relevant parties resulting in benefits estimated at 1.39 bn DKK/year for the public sector and 15.79 bn DKK/year for the private sector (a total of 17.18 bn DKK/year). These gains are an expression of saved man-hours, the costs of asset management, avoided cost of copying, etc. However, these benefits can only be achieved by a comprehensive long-term approach to creating the necessary digital infrastructure and management systems.

4.4 The Danish PWT Foundation – Investments in Public Welfare Technology (Abt-Fonden)

This programme is intended to enable public services to meet increasing demand with fewer human resources, a challenge that is expected to increase dramatically over the next few years as ongoing demographic developments accelerate further in Denmark as elsewhere. The PWT programme spans all public sector activities, and a range of projects are currently funded across different thematic areas including "Telecommunications Solutions and ICT", "Robotics and Automation", "Digitisation"

and "Care Technology". In 2008, the Danish government dedicated €400m (DKK 3bn) for this purpose between 2009 and 2015. Through the use of innovative, labour-saving technologies and intelligent reorganisation of service delivery processes, the programme aims to:

1. increase productivity and efficiency in the public sector;
2. improve current working conditions of public employees also with a focus on work ergonomics, thus making jobs in the public sector more attractive to a shrinking labour force; and
3. provide the choice of more flexible, user-centred services to citizens, empowering them to remain independent for as long as possible and take responsibility for their own lives (Danish Ministry of Finance 2010b).

The Danish Ministry of Finance's work with the common public digitisation strategy also shows that the focus has now been turned to efficiency measurements, as described in Section 6 (European Commission 2009).

5. The Impact of the Financial Crisis on Danish e-Government

All in all, the current financial crisis does not appear to have changed the Danish e-Government strategy. This is also the conclusion in the OECD-report "The Financial and Economic Crisis – impact on e-Government in the OECD countries" (OECD 2009). Denmark is among the eight (out of 23 countries) that have not changed their e-Government strategy because of the financial and economic crisis.

In Denmark, e-Government is not part of the national crisis response. This is also the case in Australia, Belgium, the Czech Republic, Hungary, Luxembourg, Slovakia and Turkey, whereas countries like Austria, Iceland, Ireland, Germany, Japan, Korea, Mexico, Netherlands, New Zealand, Norway, Slovenia, Sweden, Switzerland, the United Kingdom and the United States have included e-Government as part of the national crisis response (OECD 2009 p. 6). The countries that have included e-Government in the national crisis-response focus, according to the OECD, on the need to improve performance and reduce waste in the public sector, making strategic investments in new and innovative key e-Government areas, accelerating public spending on e-Government, rebuilding trust with citizens; improving the quality of public services, and transforming the public sector by using e-Government as a key lever (Ibid p. 3). The countries that have not included e-Government as part of their national crisis-response focus, according to the OECD, on avoiding wasting tax payers' money, and ensuring that resources are used more efficiently and effectively. In relation to this issue it should also be noted that e-Government is only one tool among many in tackling the financial crisis.

However, despite the absence of e-Government in its official national crisis response, the Danish government does expect some key outcomes from e-Government's contribution to the crisis response, i.e. improvements to efficiency, productivity and effectiveness, as exemplified in section 4. This is a general trend seen across the concrete outcome expectations emphasised by the OECD countries. Eighteen of the 23 OECD countries report that they have significantly sharpened their focus on achieving the full benefits of e-Government implementation and accelerated the implementation of those projects that most quickly lead to tangible benefits realisation.

Another trend seen across OECD countries is that most use of e-Government implementation is to achieve:

- medium- to long-term outcomes of efficiency and effectiveness in administrative functions;
- improved transparency, accountability and citizen participation;
- improved coherency and quality of public service delivery; and
- administrative burden reductions.

As already outlined in the previous sections, the Danish approach primarily focuses on the first (medium- to long-term outcomes of efficiency and effectiveness in administrative functions) and the last goal (administrative burden reductions). In fact, it appears that the Danish e-Government strategy relies on the previous e-Government strategies.

Therefore, the remaining part of this section addresses to what extent the financial crisis has changed the selection process for new Danish e-Government initiatives.

The Danish Ministry of Science, Technology and Innovation today has an increasing focus on the innovative use of digital solutions that can help to increase productivity in the business sector and in society in as a whole. This will however also require a reassessment of the appropriateness of current indicators and a more general need to re-design evaluation and impact methodologies given the complexities of measuring public productivity gains.

As in many other countries, the main focus of the Danish Ministry of Finance is on short-term benefits and efficiency increases. In comparison, the Danish Ministry of Science, Technology and Innovation (specifically NITA) is focusing on creating new value over the medium to longer term (e.g. new services, relations, processes) by creating good framework conditions for more e-Government. As a consequence of this approach, NITA has chosen to focus on the growth aspects of e-Government and establish innovation platforms for more public private partnerships. 'NemHandel' (NemHandel 2009) and 'Open Data Innovation Strategy' (ODIS) are examples of this strategy, such as the ODIS planned initiative to release the Danish Teleguide which will provide information for Danish telecom customers about mobile and broadband prices (NITA 2010b).

The presentation of the Digital Growth Package[11] on the Innovation Centre for eBusiness' website presents one of the latest examples of an initiative aimed at creating a closer relationship between the public and private sectors on a private platform (Danish Innovation Centre for eBusiness).[12] In Marie Munk's opinion, these projects show that the key NITA focus is mostly on innovation and growth in the private sector – particularly in the light of the financial crisis.

Marie Munk also stresses that decreasing productivity and competitiveness have made the Ministry of Science, Technology and Innovation interested in new smart ways to create value. She points out: "NITA is focusing on establishing platforms and interfaces, which the private sector can use as a basis for creating products and services for citizens and businesses." Marie Munk also stresses that there are currently barriers to the progress of new e-Government initiatives in Denmark, including:

1. the focus on cost cutting instead of creating new value;
2. publishing e-Government business cases with high and controversial estimated potential; and
3. the lack of attention on opportunities arising from Gov 2.0.

11 See the presentation of the initiative here: http://www.ibiz-center.dk/digital-vaekstpakke
12 See more on the Innovation centre for eBusiness' new homepage (Danish): www.ibiz-center.dk

Despite these barriers, Marie Munk stresses that Gov 2.0 can be an instrument in helping Denmark through the crisis. She points out that one of the main challenges with Gov 2.0 is that the new initiatives do not necessarily provide direct financial returns to those who implement it, as benefits might occur elsewhere and in the longer term. Because of this she thinks that NITA has to develop new business models of which the public sector can take advantage.

Even though it can be said that these are the consequences of the current economic crises, the new Danish e-Government initiatives and the first steps in exploiting Gov 2.0 can be found in the work programme 'Digital roads to growth' (Danish Ministry of Science, Technology and Innovation 2010) and in the report from the High Speed Committee (NITA 2010c). Despite these steps, Marie Munk is not sure that Denmark will have a Gov 2.0 strategy, however she points out that Gov 2.0 will become a natural element in many future e-Government strategies. "Gov 2.0 can easily be an integrated part of the new business models, which is why we are currently looking at trends and not standards," she points out.

Lars Frelle-Petersen, Head of the Digital Task Force in the Danish Ministry of Finance, however, does not necessarily think that free access to all public information is appropriate, particularly due to what he perceives as the trade-off between efficiency and openness. "Free access to public information can be appropriate for some data sets that will benefit citizens or businesses. But, we need to see more solid evidence behind the full access to all our data sets. Consequently, the Ministry of Finance will wait and see how 'explosive' the market is concerning the use and re-use of public data," he says.

Furthermore, Lars Frelle-Petersen thinks that "the business case behind ODIS (with a Gartner estimation of 600 million DKK/year for releasing public data) is still rather immature. It is not a given that companies or citizens will use the data sets that we expose". Moreover, he says: "We need to see the business case for setting data free, and to decide what kind of information public authorities will be responsible for, before we can introduce such Open Government initiatives." In other words, the business case in terms of improving efficiency and increasing productivity in relation to a more short-term financial perspective.

Such statements show a cautious and business-oriented approach to new e-Government initiatives, which can be seen as a consequence of the current financial situation. Due to this focus, the Ministry of Finance mostly focuses on digitisation as a tool to increase efficiency. An example is reducing the administrative burdens of enterprises by making all public communication digital in Denmark in 2012.

Lars Frelle Petersen continues: "This way, the Ministry of Finance focuses on areas where there are measurable benefits and an actual outcome of the e-Government initiative."[13] This shows increasing attention to efficiency and take-up. Even though the strategy is still focused on the back-office and public sector e-Government, there appears also to be an increasing focus on the real world use of Government services. So, in relation to new services for end users (especially citizens and SMEs) there is some agreement between the Ministry of Finance and the Ministry of Science, Technology and Innovation.

Lars Frelle-Petersen also recognises this prioritisation when he points out: "In many ways I think Denmark is very far ahead with regard to digitisation and e-Government in general. However, on the other hand, we are also behind on other areas, which for example is the case with Web 2.0 in the public sector. Our own enterprise architecture programme has used wikis and blogs extensively in the last couple of years. But, I think this is a result of there not having been a political desire for a

13 The Easy Trade initiative was introduced in 2007 to make electronic invoices between the public and the private sector possible, but with a new law in place the public sector has to be fully ready by 2012.

proactive Open Government approach." In other words, this view detects a lack of 'political desire' to invest in e-Government initiatives when economic resources are scarce.

In Lars Frelle-Petersen's opinion there are two other reasons why political will has not been so significant:

1. the business sector has already been provided with an adequate digital infrastructure; and
2. general trust in the public sector is high.

The first reason can be verified with OECD data. In the presentation "Rethinking E-Government Services" Head of Unit, Yih-Jeou Wang shows that Denmark is one of the countries with the most sophisticated online services for enterprises and at the same time one of the countries with the highest level of e-Government usage by enterprises (ranked third among the OECD countries in 2009).

6. Future Danish e-Government Strategy

According to the Danish Minister of Science, Technology and Innovation, Charlotte Sahl-Madsen, the fourth Danish e-Government strategy will be prepared in collaboration between her ministry and the Minister of Finance in 2011 (Epn-article 2010). The Commission preparing this work is developing a set of recommendations on the focus areas to be considered in future work with e-Government. This shows that the fourth e-Government strategy will maintain and further develop on the work of the previous three e-Government strategies in Denmark. In this way, the strategy emphasises that digitisation should be an instrument to increase efficiency and modernise public services.

The Commission's work so far on the new digitisation strategy emphasises *collaboration and coordination across the public sector*. It is also likely to recommend pushing the uptake of digital services in major public service areas such as jobs, businesses (a study will be undertaken on whether more openness in the public sector will have positive impact on the ICT sector and the business sector in general), environment, social welfare and education. Moreover, the Commission suggests that policy decisions should promote increasing use of digital public services. Another recommendation is also likely to be *"to increase the re-use of data in public service production and ensure rules and standards that support an efficient service"*.

As part of the Commission's work so far, the Digital Task Force also stresses that digitisation is an enabler that primarily supports achieving political goals and can lead to both service improvements and increased efficiency in the public sector. However, the Ministry of Finance recommends that calculations of the benefits arising from increased use of digital public services should also be made.

According to Lars-Frelle Petersen of the Ministry of Finance, the fourth e-Government strategy will look at business models currently in place. "The strategy will look at: 1) where the most substantial benefits are, 2) architecture and standardisation/governance, 3) use/re-use of data. The Ministry of Finance is currently not sure how big a driver Open Government will be. Moreover, the Digital Task Force does not think that e-Government and the public sector in general are well suited to creating more democracy. In our opinion, eDemocracy is not the core task of the public sector," Lars Frelle-Petersen argues.

This statement also shows that the e-Government domain does not appear to be expanding nor developing new services. Given this background in the context of the financial crisis, and the consequent focus on increasing efficiency, it is unlikely that the fourth Danish e-Government strategy will include a large number of Open Government and Gov 2.0 initiatives.

This interpretation of the impacts of the economic crisis on the fourth Danish e-Government strategy is supported by Lars Frelle-Petersen: "The economic crisis will be a major driver. Therefore digitisation has to go through a hard prioritisation process, where efficiency gains through substitution of manpower is the key driver. Consequently, the Ministry of Finance does not intend to prioritise more openness and democracy as there are more pressing issues in Denmark right now." Lars Frelle-Petersen concludes that the increased pressure on public finances will increase the rational choices made in the public sector and in this way not result in large new Open Government initiatives. Particularly for this reason, Lars Frelle-Petersen does not think that more openness – which will entail more administration – will become a trend in the near future. Nor does the Ministry of Finance see Gov 2.0 as a very strong driver.

7. Conclusions

This review of the Danish e-Government strategy shows that currently there is a reluctant approach towards new e-Government initiatives and, in particular, Gov 2.0. Dictated largely by the Ministry of Finance which controls the purse strings, this approach can be seen as a consequence of the financial crisis. Thus, the current Danish e-Government strategy, conducted jointly by the Danish Ministry of Science, Technology and Innovation and the Ministry of Finance, primarily focuses on internal e-Government issues such as coordination improvements and increased efficiency within the public sector. Thus, Denmark does not intend to spend considerable resources on developing new Gov 2.0 initiatives with benefits which are difficult to measure, but instead is focusing on shorter term more measurable financial cost and productivity savings.

The statements above (in section 6) show that Danish e-Government strategy priorities have not changed over time, despite changing conditions. This can have both advantages and disadvantages. However, looking at the European Commission's Europe 2020 Strategy for tackling the crisis and preparing the EU economy for the challenges of the next decade[14], the Danish e-Government priorities still seem somewhat timid, risk-averse and traditional, and it can be debated whether or not this is an appropriate response both in Denmark as well as in Europe more generally. This can also be detected when looking at the objectives of the Digital Agenda for Europe (DAE) (European Commission 2010), in which the European Commission tends much more than the Danish approach to focus on maximising the social and economic potential of ICT, innovation and the longer term growth potential.

To sum up, the hypothesis in the introduction to this paper can be rejected. From the material analysed it can be concluded that the recent financial recession and the measures taken because of the recession have not had a real impact on e-Government development in Denmark. This can be explained by the fact that e-Government is not an explicit area of investment. This seems paradoxical in the context of a new research report from Copenhagen Business School which shows that the average Danish citizen is in contact with their municipality 20 times every year (100-166 million contacts yearly) at a cost to the public sector of more than 7 bn DKK/year (Normann Andersen 2011). The CBS-report also shows that the cost to the public sector related to digital self-service solutions is only about one tenth of those incurred when users make contact in person or by letter and e-mail. Given this, and the fact that this article has shown that the Danish government focuses strongly on the need for structural reform and higher productivity (e.g. the De-Bureaucratization programme, investments in modernisation and innovation like the ABT fund, and the use of the business case model), it is surprising there is no focus on increasing user take-up nor on confronting existing rule

14 Europe 2020 sets out a vision to achieve high levels of employment, a low carbon economy, productivity and social cohesion, to be implemented through concrete actions at EU and national levels.

sets, organisational structures and government-centric structures.

One reason for the reluctance to invest more in e-Government in the near future is that the Finance Ministry is concerned by the fact that 75% of citizens accessing local self-service solutions do not succeed in using the service (Ibid). The main issue is how to avoid wasting tax payers' money when outcomes are uncertain, and to ensure that resources are used as efficiently and effectively as possible. In this way the Danish e-Government approach still might prove to be successful in this post-crisis decade in the context of fewer public finances for funding e-Government initiatives. As a consequence, however, in the longer term this could result in the Danish government being faced by the challenge of slipping behind other countries and needing to look again at strategies, for example, to increase citizen participation and engagement.

The Danish agenda seems, however, to be partially out of step with the more European longer-term agenda, which similarly aims to spur innovation and economic growth, but also focuses strongly on social development, inclusion, participation and improvements in daily life for both citizens and businesses. The question is whether Danish e-Government priorities will change in the fourth Danish e-Government strategy, which will be published in April 2011. This article has argued that the Danish strategy is unlikely to make such a change in the near future.

References

COWI (2009). Digital forvaltning af bygninger fra vugge til grav, retrieved December 13, 2010 from: http://www.ebst.dk/file/41479/COWIrapport.pdf.

Danish Government (2002). The Danish e-Government Strategy 2000-2004 - Towards e-Government: Vision and Strategy for the Public Sector in Denmark (2001-2004), retrieved December 7, 2010 from: http://www.epractice.eu/files/media/media_362.pdf.

Danish Government (2004). The Danish e-Government Strategy 2004-2006, retrieved December 7, 2010 from: http://www.epractice.eu/files/media/media_275.pdf.

Danish Government (2007). The Danish e-Government Strategy (2007-2010): "Towards better digital services, increased efficiency and stronger collaboration", retrieved December 7, 2010 from: http://www.modernisering.dk/fileadmin/user_upload/documents/Projekter/digitaliseringsstrategi/Danish_E-government_strategy_2007-2010.pdf.

Danish Government (2009). De-bureaucratisation Plan and Business Regulations, retrieved December 7, 2010 from: http://www.dcca.dk/graphics/publikationer/Administrative%20lettelser/Afbureaukratiseringsplan%20%28Eng%29.pdf.

More about the initiative in Danish: http://www.bm.dk/Ministeriet/Om%20ministeren/Kampagne/Laes%20mere%20om%20initiativet.aspx.

Danish Ministry of Finance (2010a). Press release about the commission, retrieved December 7, 2010 from: http://www.fm.dk/Nyheder/Pressemeddelelser/2010/11/~/media/Files/Nyheder/Pressemeddelelser/2010/11/Kommissorium_ny_faelles_digitaliseringsstrategi.ashx.

Danish Ministry of Finance (2010b). About the investment in public welfare technology (ABT-fonden), retrieved December 10, 2010 from: http://www.fm.dk/sitecore/content/abtfonden/Home/Om_Fonden/English.aspx.

Danish Ministry of Finance (2009a). In Danish about the Quality reform project, retrieved December

10, 2010 from: http://uk.fm.dk/Portfolio/Public%20modernisation/The%20Danish%20Quality%20Reform.aspx.

Danish Ministry of Finance (2009b). In Danish about the De-bureaucratisation reform project, retrieved December 10, 2010 from: http://www.kvalitetsreform.dk/multimedia/VI_Afbureaukratiseringsreform_1.pdf.

Danish Ministry of Science, Technology and Innovation (2010). The work programme Digital roads to growth, retrieved December 7, 2010 from: http://en.vtu.dk/press/2010/digital-roads-to-growth .

National IT and Telecom Agency (NITA) (2010a). "ODIS", retrieved December 13, 2010 from: http://en.itst.dk/policy-strategy/open-data-innovation-strategy/copy_of_open-data-innovation-strategy2019-odis.

NITA (2010b). Clear Objectives and More Openness (Teleprisguide), retrieved December 10, 2010 from: http://en.itst.dk/about/clear-objectives-and-more-openness-1/copy_of_clear-objectives-and-more-openness/?searchterm=teleguide.

NITA (2010c). High Speed Committee Report, retrieved December 7, 2010 from: http://en.itst.dk/policy-strategy/the-high-speed-committee/High%20Speed%20Committee.pdf.

Dybkjær-Christensen (1996). Info-Society 2000, retrieved December 7, 2010 from: http://vtu.dk/filer/publikationer/1996/it-politisk-handlingsplan-1995-fra-vision-til-handling/english-version/html/clean.htm.

ENISA, European Network and Information Security Agency (2010). Denmark Country Report, retrieved December 10, 2010 from: http://www.enisa.europa.eu/act/sr/files/country-reports/Denmark.pdf.

Epn-article (2010). Danish interview with the Danish Minister for Science, Technology and Innovation, retrieved December 10, 2010 from: http://epn.dk/teknologi2/branchen/article2215611.ece.

ePractice (2010). Joint digital government strategy 2011-2015 on the way, retrieved December 10, 2010 from: http://www.epractice.eu/en/news/364235.

European Commission (2010). COM 245: A communication from the Commission to the European Parliament, the Council, the Social and Economic Committee and the Committee of Regions: A Digital Agenda for Europe, retrieved December 13, 2010 from: http://ec.europa.eu/information_society/digital-agenda/.

European Commission (2009). Bringing Together and Accelerating e-Government Research in the EU, retrieved December 13, 2010 from: http://ec.europa.eu/information_society/activities/egovernment/studies/trendswatch/reports/policy_issues_in_egov.pdf.

Meyerhoff Nielsen, Morten (unpublished). Danish e-Government Success Factors: Strategies and good practice examples.

NemHandel (2009), NemHandel, Open Infrastructure for E-business, retrieved December 13, 2010 from: http://www.epractice.eu/en/cases/easytrade.

Normann Andersen, Kim (2011): WP CAICT Kommunal borgerservice anno 2011, retrieved January 20, 2011 from: http://openarchive.cbs.dk/bitstream/handle/10398/8240/WP%20CAICT%20kommunal%20borgerservice%20anno%202011.pdf?sequence=1.

OECD (2010a). Efficient E-Government for Smarter Public Service Delivery, retrieved December 7, 2010 from: http://www.oecd.org/dataoecd/43/55/45382552.pdf.

OECD (2010b). Recommendation for Denmark, retrieved December 7, 2010 from: http://modernisering.dk/fileadmin/user_upload/documents/Projekter/OECD/DK_Egov_Review__Report_Core_messages_-_03-06-2010.pdf.

OECD (2009). The Financial and Economic Crises – impact on e-Government in the OECD countries, retrieved December 7, 2010 from: http://www.oecd.org/dataoecd/57/57/44089570.pdf.

OECD (2007). E-Government as a Tool for Transformation, (GOV/PGC(2007)6), Unclassified, 28 March 2007, OECD, Paris, France, retrieved December 7, 2010 from: http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=GOV/PGC%282007%2919/REV1&docLanguage=bi.

OECD (2003). OECD Science, Technology and Industry Scoreboard, retrieved December 7, 2010 from: http://www.oecd.org/dataoecd/41/0/17130709.pdf.

United Nations (2010). Electronic article: The impact of the Financial Crisis on e-Government, retrieved December 10, 2010 from: http://egovernments.wordpress.com/2010/03/11/the-impact-of-the-finacial-crisis-on-egovernment/.

United Nations (2009). Department of Economic and Social Affairs, ICTD Yellow Pages, retrieved December 7, 2010 from: http://www.un-gaid.org/tabid/868/ItemID/1663/Default.aspx.

United Nations Public Administration Network (2008). E-Government Survey in the News - Denmark ranks second globally in digital management, retrieved December 10, 2010 from: http://www.unpan.org/Library/MajorPublications/DELUNEGovernmentSurvey/PublicEGovernanceSurveyintheNews/tabid/651/mctl/ArticleView/ModuleId/1555/articleId/16152/Default.aspx.

Internet

Danish Innovation Centre for eBusiness, retrieved December 13, 2010 from: http://www.ibiz-center.dk.

Interviews

Overgaard, J (2010). Interview with Lars Frelle-Petersen, CIO, Danish Ministry of Finance / Head of e-Government programme Denmark.

Overgaard, J (2010). Interview with Marie Munk, Deputy Director-General at National IT and Telecom Agency in Denmark.

Report from another interview with Lars Frelle-Petersen in Danish, retrieved December 13, 2010 from: http://www.deloitte.com/assets/Dcom-Denmark/Local%20Assets/Documents/Udgivelser/Publikationer/Stat_regioner_og_kommuner/Indblik_Digitalisering_i_den_offentlige_sektor_06_2007.pdf.

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e-Government as a regulatory response to the financial crisis: the case of the UK

This paper seeks to discuss EU policies relating to securities markets, created in the wake of the financial crisis and how ICT and specifically e-Government can be utilised within this context. This study utilises the UK as a basis for our discussion. The recent financial crisis has caused a change of perspective in relation to government services and polices. The regulation of the financial sector has been heavily criticised and so is undergoing radical change in the UK and the rest of Europe. New regulatory bodies are being defined with more focus on taking a risk-based system-wide approach to regulating the financial sector. This approach aims to prevent financial institutions becoming too big to fail and thus require massive government bail outs. In addition, a new wave of EU regulation is in the wind to update risk management practices and to further protect investors. This paper discusses the reasons for the financial crisis and the UK's past and future regulatory landscape. The current and future approach and strategies adopted by the UK's financial regulators are reviewed as is the lifecycle of EU Directives. The regulatory responses to the crisis are discussed and upcoming regulatory hotspots identified. Discussion of these issues provides the context for our evaluation of the role e-Government and ICT in improving the regulatory system. We identify several processes, which are elementary for regulatory compliance and discuss how ICT is elementary in their implementation. The processes considered include those required for internal control and monitoring, risk management, record keeping and disclosure to regulatory bodies. We find these processes offer an excellent opportunity to adopt an e-Government approach to improve services to both regulated businesses and individual investors through the benefits derived from a more effective and efficient regulatory system.

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Keywords

Financial Crisis, e-Government, Governance, Risk, Compliance, Turner Review, FSA, CPMA, PRA

"This paper addresses the implications of the financial crisis from the perspective of e-Government and ICT."

1. Introduction

The financial services industry has changed greatly over the last couple of decades. Factors which have contributed to restructuring the industry include the extensive adoption of technology, the associated impacts of off shoring and outsourcing, the blurring of traditional sectors through the integration of retail and investment banking operations and the consolidation of financial institutions at both the national and global level. All of which has enabled capital markets to become more accessible and integrated and so enabled financial organisations to issue increasingly complex and diverse financial products. Information technology allows each organisation's systems to receive securities-related data and so be the originator of securities orders by being linked into a centralised trading system. These developments have facilitated changes to the ways securities are priced and traded, have enabled the globalisation of securities markets and activities and allowed the further development of finance related theorem.

However, these developments have come at a price: integration has fostered interdependence. The failure of one financial institution may now have dire economic and social consequences at a national and global level. Previously, governments have responded to the impacts of economic and corporate failures by implementing an increasing number of national and international regulatory requirements, many of which demand a formalised process for managing and auditing business critical information. Furthermore, high profile failures have created an increasing awareness of risk and so firms' processes for managing the risks associated with their business models have come under increasing scrutiny. The purpose of this increased surveillance is to protect a firm's employees, customers and shareholders and the economic stability of the state in which the institution operates. Within the European Union (EU), Directives relating to the regulation of capital markets must be implemented by each member state's regulatory authority.

This paper adopts the perspective that e-Government, in the context of financial regulatory compliance, focuses on the interaction between government regulators and financial organisations as opposed to citizens. The European Commission Information Society (2010 p. 1) describes e-Government as being,

"…about using the tools and systems made possible by Information and Communication Technologies (ICTs) to provide better public services to citizens and businesses… Effective e-Government also involves rethinking organisations and processes, and changing behaviour so that public services are delivered more efficiently to the people who need to use them."

Clearly, the role of technology and e-Government cannot be underestimated in developing a more robust and appropriate regulatory environment. Improved effectiveness and efficiency in the regulatory process will benefit those firms which are monitored and so they are considered the chief clients of the regulators. In this context, 'public services' refers to the effective and efficient regulation of the financial sector by delivering a stable economic environment where businesses can flourish and investors are suitably protected. The long term benefits of this environment include enabling the extension of credit to businesses to survive and prosper the associated growth of the job market and reduction of unemployment, as well as the growth of individuals' pension funds.

This paper outlines the regulatory landscape within the EU and more specifically the UK. The paper highlights this landscape and various compliance-related systems and processes. By doing so, we aim to stimulate dialogue and debate regarding the possibilities and limitations of e-Government's ability to provide an enhanced regulatory structure, which is able to prevent another crisis of the scale previously seen.

Firstly, we discuss the process by which the EU defines and implements new Directives. Then we consider the reasons for the recent financial crisis. The following section outlines the various UK regulatory authorities, past and future and the regulatory approach of the UK's Financial Services Authority (FSA) which is the UK single financial services regulatory authority.

Next, we discuss the responses to the crisis including a review of upcoming regulatory hotspots within the EU. The previous sections highlight the landscape and current policies and issues which have sprung from the financial crisis. The following sections outlines the types of ICT systems which may be used to implement these polices and discusses various approaches to achieving the required levels of governance and compliance, from an ICT perspective.

Finally, we draw conclusions from our discussions and analysis.

2. The Lifecycle of EU Financial Services Directives

The paper adopts the UK as the focus of our analysis. However, many of the regulatory issues facing the UK are resultant of EU regulations and so are common across member states. Within the Union, there existed a clear need to create an EU-wide framework for regulating securities markets existed (Alford, 2006). Consequently, in 2002 a four-level framework for introducing new securities-related policies was developed and became known as the Lamfalussy process (Schaub, 2005)

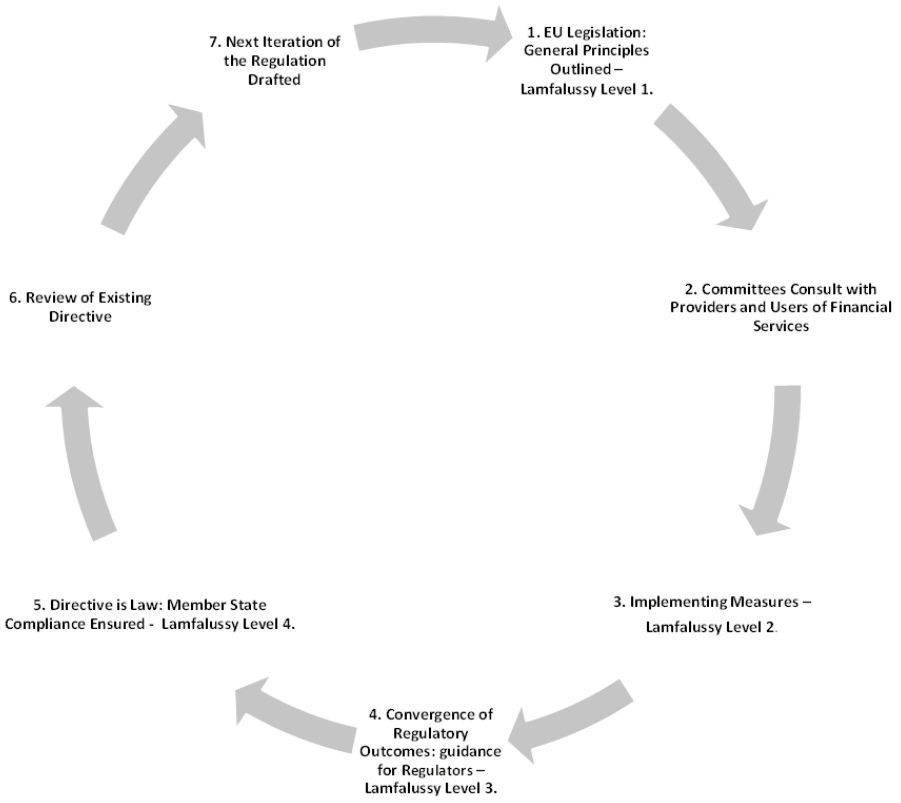
The first level of this process consists of legislative acts, termed Directives or Regulations, proposed by the European Commission (EC), the executive body of the European Union, after consultation with interested parties. Level 2 of the Lamfalussy process requires the preparation of detailed legislation for implementing the measures outlined in the first level. This detail is prepared by the Commission through accumulating the advice provided by representatives of member state's regulatory authorities acting through various committees. Member states' regulatory authorities may also take consultation from industry. The FSA Handbook outlines statutory requirements for financial organisations operating in the UK. This Handbook is updated to include the Level 2 Directive details.

Third level measures are aimed at improving the common and uniform measures outlined in Levels 1 and 2. This is achieved by creating non-legally binding guidance designed to outline best practice and create convergence and strengthen cooperation between national regulators. Again this is achieved through Committees constituted by national regulators.

The last level of the Lamfalussy process, Level 4, requires the Commission to check each member state's implementation of the Directive and allows enforcement action where failures to implement or inconsistent implementations are found (Europa, 2002; FSA, 2010a).

Previously, we have seen EU Directives be enhanced and improved on through increasing iterations of the same legislation. Examples of iterative EU Directives include the 3rd EU Money Laundering Directive, Basel II/Capital Requirements Directive, UCITS IV, and the upcoming MiFID II Directive. Figure 1 outlines the regulatory lifecycle.

Figure 1. Lifecycle of EU Financial Services Directives



3. Reasons for the Financial Crisis

The first cause of the crisis may be attributed to macro-imbalances with very large current account surpluses piling up in oil exporting countries as well as China, Japan and some other East Asian developing countries. However, in the UK, USA, Ireland, Spain and some other countries, large deficits in current accounts were accumulated. This occurred not least due to high savings rates in countries like China, which have created savings in excess of their own domestic investment. Consequently, China and other countries have had to invest beyond their borders. However, China and other countries have committed to fixed or managed exchange rates and so these investments have taken the form of risk-free or low-risk government bonds. This, in turn, has caused a reduction in the interest rates of risk-free investments. In addition, the integration of financial markets created large capital flows which were diverted towards real estate causing prices to soar in several countries (EC, 2009; Turner, 2009).

Turner and the EC suggest that lower interest rates in the medium-to-long term have driven two effects. Firstly, the rapid growth of credit extension (typically in residential mortgages) fuelling property booms with an accompanied reduction in credit standards. Secondly, strong desires amongst investors to gain as much as possible above the risk-free interest rate in order to offset its decline.

Both Turner and the EC highlight financial innovation as an additional reason for the crisis. They suggest that the macro-imbalances previously described have created demand for increasingly complex securitised (the selling of future cash flows from revenue streams as bonds) credit instruments; created a growth in value of the total stock of credit securities and an explosion in the number of credit derivatives (instruments which originally were designed to provide insurance

or hedging against credit defaults). Often credit rating agencies misjudged the risks associated with these instruments and there existed clear conflicts of interest where they helped develop new products and rate them. All of these occurrences have sought to satisfy the increased demand for yields beyond the risk-free rate. According to Turner all operate on the assumption that, "that by slicing and dicing, structuring and hedging, using sophisticated mathematical models to understand and manage risk, we can "create value" by offering investors combinations of risk and return which are more attractive than those available from direct purchase of the underlying credit exposures." Consequently, there followed what Turner defines as, "self-fulfilling cycles of falling risk aversion and rising irrational exuberance to which all liquid traded markets seem at times to be susceptible" thereby creating a cycle of boom and bust (Turner, 2009 p. 1).

Finally, Turner highlights gaps and deficiencies in regulations relating to bank capital and liquidity as additional causes.

4. The UK Regulatory Landscape from 1692-2014

The roots of the UK's regulatory environment can be traced back as early as 1692, in places like Jonathan's Coffee House in Exchange Alley in the heart of London's financial district, where individuals congregated to sell stocks. Defaulters were soon banned from entering and so the self-regulatory nature of the London Stock Exchange (LSE) has its roots in its early inception, with members of the exchange ensuring desirable behaviour from other members. However, by 1939 the Board of Trade (a government committee) was licensing entities involved in the securities dealing, while the Bank of England (BOE), the UK's central bank, had powers to request information from bankers and to provide them with recommendations.

The Financial Services Act of 1986 set out an extensive framework for the regulation of the UK's financial investment industry. The act provided a two-tier system. The first depended on practitioner involvement through Self Regulating Authorities (SRO). However, the SROs were to be overseen by the second tier, the Securities and Investments Board (SIB).

The SIB eventually authorised five SROs, The Securities Association (TSA), the Association of Futures Brokers and Dealers (AFBD), the Financial Intermediaries and Brokers Association (FIMBRA), the Investment Management Regulatory Organization (IMRO) and the Life Assurance and Unit Trust Regulatory Association (LAUTRO).

In 1991, the TSA and AFBD merged to become the Securities and Futures Authority (SFA). This was achieved by merging the memberships of the two SROs as well as their responsibilities.

In 1994, the SIB instigated an enquiry into the scope of regulatory oversight by the various bodies and their associated responsibilities. This led to the creation of the PIA, another SRO, whose scope included the activities of FIMBRA and LAUTRO, which ceased to exist

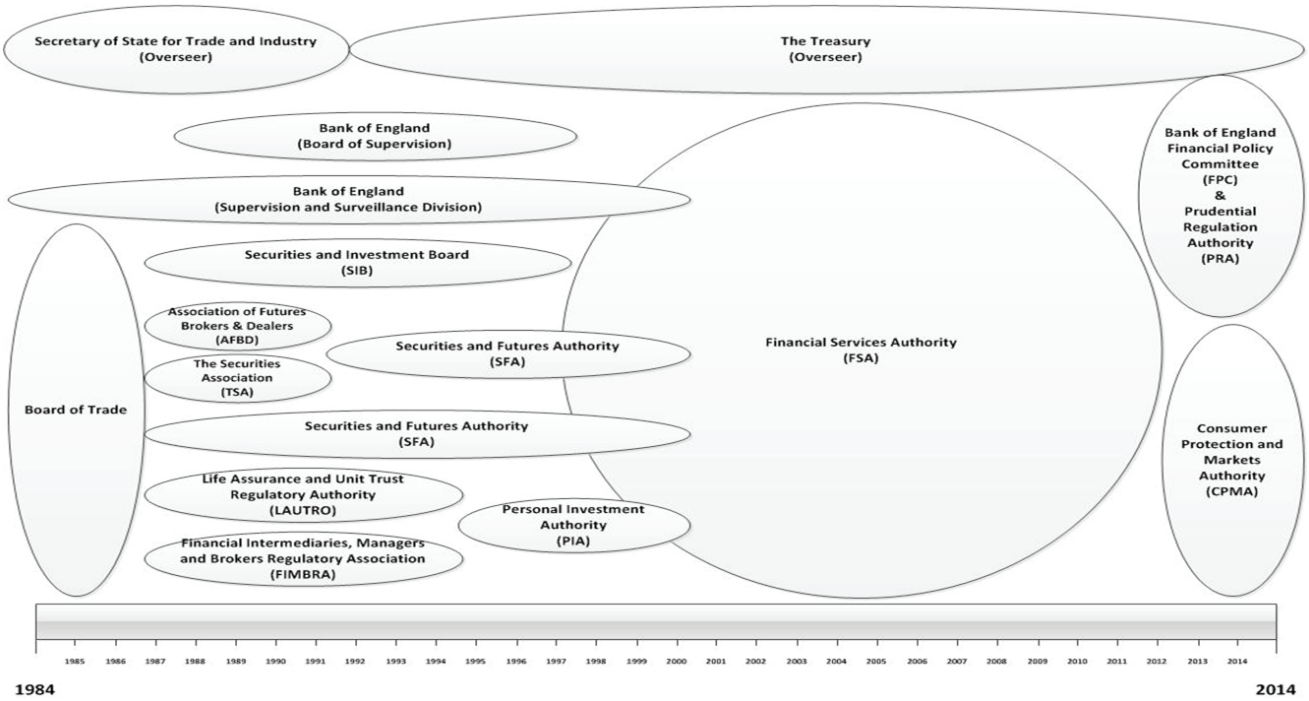
Following the Labour Party's victory in the 1997 general election, the newly appointed Chancellor of the Exchequer announced the reform of financial services regulation in the UK and the creation of a new regulator. Banking supervision and investment services regulation would be merged into the SIB, which formally changed its name to the Financial Services Authority (FSA) in October 1997. The Financial Services and Markets Act (FSMA) of 2000 provided a framework of operations for a single regulator for the entire financial services industry, the FSA. Consequently, the act drew together the PIA, SFA, IMRO, the BOE's Supervision and Surveillance department and the FSA (formally SIB). As the sole regulator, the FSA publishes a single handbook of rules and guidance for all firms authorised by

the FSA.

However, in 2010 the new Conservative-Liberal Democrat coalition government announced plans for a new regulatory framework which will see the demise of the FSA and the creation of a new Prudential Regulation Authority (PRA), which will be a subsidiary of the Bank of England and would have responsibility for prudential regulation of certain firms in order to minimise the disruption caused by any firms which do fail. In addition, a new Consumer Protection and Markets Authority (CPMA) will be created which will assume conduct and market responsibilities currently undertaken by the FSA. These changes are likely to come into effect in 2012. (H. M. Treasury, 2010).

Figure 2 summarises these developments

Figure 2. 30 Years of UK Regulation



5. The UK Regulator's Approach

Currently, the FSA operates a principles-based approach to regulation which embraces a move away from dictating prescriptive rules and supervisory actions to allowing firms' responsibility for aligning their objectives and processes with specified regulatory outcomes. The principles set the high-level outcomes desired and are underpinned by fewer rules, which are whenever possible also outcome focused. The FSA cite a number of reasons for adopting this approach. They argue that prescriptive rules have failed to prevent misconduct and ever-expanding rule books increase the burden on industry resources.

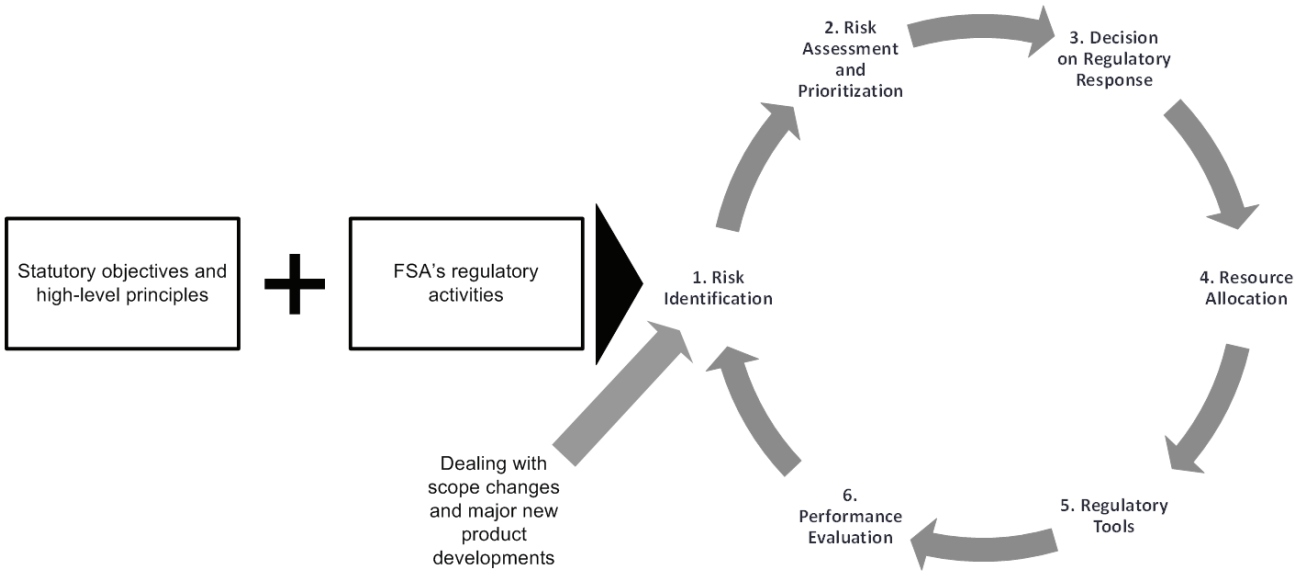
The FSA suggests that a focus on outcomes over prescription is better positioned to regulate the dynamic changing nature of financial markets and associated financial product innovation. Furthermore, prescriptive rules may be unable to address changing circumstances in market conditions, delays occur while appropriately detailed rules are specified. In addition, adherence to concrete rules may also restrict innovation. Finally, a highly complex rule book with many thousands

of detailed rules may be a barrier to smaller firms without legal or compliance expertise. However, the FSA does concede that no statutory scheme can be a pure-type and describes its approach as being more principles based while conceding that, "detailed rules will remain a detailed part of their (sic) regulatory toolkit" (FSA, 2009 p.10) particularly with respect to European Directives over which the FSA has no discretion.

As a general principle, the FSA adopts a risk-based approach to the supervision of firms. Risk is assessed in terms of the scale of impact on consumers and the market, as well as the probability of the issue arising. Consequently, the day-to-day relationship the FSA maintains with an authorised firm depends on the outcome of the FSA's framework for assessing risk the Advanced Risk-Responsive Operating framework (ARROW 2) introduced in 2006. The framework integrates the FSA principles-led approach and statutory objectives with a risk management focus. Figure 3 outlines the Arrow operating framework and shows how the FSA's statutory objectives and high-level principles are linked to its regulatory activities and the identification, assessment and prioritisation of risks relating to these objectives (FSA, 2010b). Consequently, a proportionate and appropriate regulatory response to these risks is formulated. In this way, the FSA's approach to regulation aims to be both risk sensitive and proportionate Furthermore, this framework may also be used to consider specific issues as they affect a number of firms, an entire sector, or the market as a whole.

Although the FSA is to be scrapped, George Osborne, the Chancellor of the Exchequer, advised in his speech, outlining the new regulatory regime, that, "The FSA became a narrow regulator, almost entirely focussed on rules-based regulation" and asked, "How do we ensure less box-ticking and more exercise of judgement?" (Osborne, 2010 p. 1). Furthermore, in 2008 the FSA conducted a review of its supervisory approach as a response to its internal audit of its supervision of Northern Rock, a British Bank which was nationalised to avoid it becoming insolvent and reported that, "We will continue to use and improve our current ARROW 2 framework and operate a 'principles and outcome-based philosophy'" (Osborne, 2010 p. 1). Thus, it seems likely that a risk-focused and principles-based approach will also be adopted by the new regulatory bodies, the PRA and CPMA.

Figure 3. Arrow II (FSA, 2010b)



6. EU Regulatory Responses to the Financial Crisis

This section reviews upcoming regulatory hotspots resulting from EU Directives. In 2011, Undertakings for Collective Investment in Transferable Securities (UCITS) IV will be implemented. This is the fourth iteration and enhancement of an EU directive aimed at harmonizing the European regime for investment funds, enabling these funds to operate freely across the EU by allowing each fund to be authorised by one member state but operate across them all. Thus, UCITS seeks to achieve a form of standardisation across EU markets. Correspondingly, the Committee of European Securities Regulators (CESR) have released their guidelines, known as CESR/10-788, to provide both EU regulators and companies managing UCITS with detailed methodologies for calculating global exposure and counterparty risk for UCITS and to foster a level playing field for risk management across EU states.

Another upcoming area of regulatory change focused on risk management is the Basel III accord and updates to the related EU's Capital Adequacy Directive. These mandates address risk management weightings for calculating the capital which a firm must maintain to meet the needs of its depositors and creditors.

The Alternative Investment Fund Managers (AIFM) Directive changes the onus from regulating funds to regulating managers. Only AIFM authorised in the EU will be able to provide their services and sell their funds in EU member states. In addition, the fund does not need to be established in the EU but the manager does. Here again, we see the EU's focus on standardisation to create a harmonised approach across the EU. Once an AIFM is authorised by a member state's regulator, they may operate across the EU. Managers outside the EU cannot market their funds without meeting specific regulatory and fiscal requirements.

The European Commission has also committed to improving investor protection for packaged retail investment products (PRIPs). The aim of the new legislation, which is in the consultation period, is to ensure that retail consumers can more easily navigate and understand the markets and associated risks and that conflicts of interest do not occur, whilst at the same time creating a level playing field for distributors. During the crisis, many products underperformed compared to investors' expectations, and some exposed to risks of which they were unaware.

In addition, the European Commission proposed changes to improve protection for bank account holders and retail investors. The Investor Compensation Scheme Directive requires member states to implement investor compensation schemes which all firms supplying investment services must join.

The EU's Committee of European Banking Supervisors (CEBS) has published final guidelines on remuneration policies.

7. ICT and Compliance Management

The next sections outline the systems and associated practices which are commonly used by organisations to ensure compliance and discuss them in relation to the regulatory environment and policies previously described. We identify key relationships between ICT and the management of securities' regulations. By doing so, we aim to highlight to scholars and practitioners the areas which may offer some yield from the adoption of e-Government practices.

Figure 4 depicts this relationship between ICT and compliance management outlining key practices including risk management, internal control and monitoring, record keeping and disclosure to the regulator. All of these processes are supported by ICT and compliance-related systems.

The importance of ICT to capital markets cannot be underestimated and has grown steadily since the market was dematerialised. Since paper stock was abandoned, technology has been the key to enabling the clearing and settlement of securities and so facilitate the transactions which are at the heart of any financial organisation. As one interviewed senior compliance executive noted, "Investment houses are now effectively giant computer systems. Gone are the days when share certificates or bonds were held in safes". Since business processes within financial institutions rely so heavily on IS, the processes which support and ensure compliance will also heavily rely on these technologies.

To meet regulatory requirements financial institutions rely heavily on compliance-related systems to provide rule building, customisable reporting and a complete audit history (Tarantino 2006). Correspondingly, the Butler Group (2004) suggest that many areas of compliance such as information retrieval overlap. They suggested that compliance systems can be broadly grouped into three overlapping categories and that consolidation of services, systems and automated business processes may be precipitated by the adoption of compliance-related systems:

- Information Management - Encompassing the collection, safe storage, retrieval, and deletion/ destruction of relevant information/data.
- Information Analysis - The discovery, retrieval, and interpretation of content to create an understanding of the significance of the content
- Information Security - Encompassing not only the restriction of access to content based upon the role and function of the person wishing to access it but also the mechanisms and technologies in place to prevent the content being changed, damaged or deleted with appropriate reason.

Correspondingly, the FSA states that *"A firm must take reasonable care to establish and maintain such systems and controls as are appropriate to its business."* (FSA, 2011a).

In addition, the FSA has outlined high-level principles of regulation, see Figure 3. One of these principles is termed the 'Role of Management' (FSA, 2011b) and states,

"A firm's senior management is responsible for its activities and for ensuring that its business complies with regulatory requirements. This principle is designed to secure an adequate but proportionate level of regulatory intervention by holding senior management responsible for risk management and controls within firms. Accordingly, firms must take reasonable care to make it clear who has what responsibility and to ensure that the affairs of the firm can be adequately monitored and controlled."

Furthermore, the FSA's Arrow II risk assessment of firm's considers 'Financial and Operating Controls', 'Compliance Monitoring and Guidance' as well as Operational, Market and Credit Risks (FSA, 2006). The FSA Handbook (FSA, 2011a) states that,

"A firm must arrange for orderly records to be kept of its business and internal organisation, including all services and transactions undertaken by it, which must be sufficient to enable the FSA… to monitor the firm's compliance with the requirements under the regulatory system."

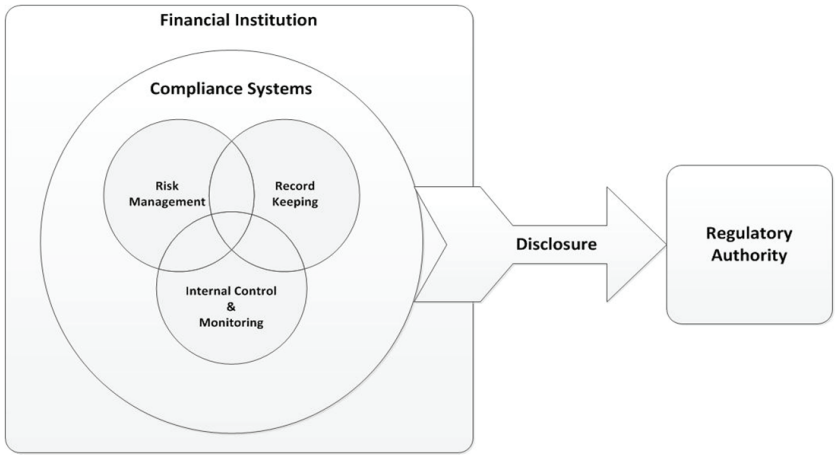
The Handbook also provides guidance on the information which firms are required to disclose to the FSA,

"A firm must notify the FSA immediately it becomes aware, or has information which reasonably suggests, that any of the following has occurred… any matter which could have a significant adverse impact on the firm's reputation; or any matter which could affect the firm's ability to continue

to provide adequate services to its customers and which could result in serious detriment to a customer of the firm … or any matter in respect of the firm which could result in serious financial consequences to the UK financial system or to other firms..”

Consequently, if organisations’ internal controls, risk management or record keeping processes fail and thereby create serious issues the firm is required to inform the FSA. In addition, the Arrow II assessment also requires firms to disclose information to the FSA.

Figure 4. ICT and the Management of Securities Regulations



7.1 Risk Management

Both CESR/10-788 and Basel III focus chiefly on risk and so strong risk management processes are required. For guidance regarding risk management, we can look to the Securities Institute (2004) which defines risk management as, “the implementation of a structured process that reduces the likelihood of risks being realised to acceptable levels” (Securities Institute 2004 p. 4-12: 4.6)

Within the financial services industry three main types of risk are widely acknowledged. These are credit risk, market risk and operational risk. Credit risk refers to the potential for loss that results from lending and is traditionally the foremost risk for financial institutions. Organisations accept credit risk in order to earn revenue, the higher the risk of lending the greater the potential for higher returns. Thus, the challenge is to manage the downside of credit risk so as to gain the utmost benefit from the upside.

The global financial markets are based on price uncertainty, which is the ambiguity of the future movement of a financial instrument’s worth. This uncertainty determines profit and loss. Market risk refers to the possibility that a loss will be made in this environment.

Lastly, there is operational risk, which the Institute of Securities defines as, “The risk of direct or indirect loss resulting from inadequate or failed internal processes, people and systems or from external events” (Securities Institute, 2004 p. 4-3 1.1).

Four key objectives of risk management can be identified: effectively manage risk, reduce cost of losses, reduce surprises and reduce capital allocation (Securities Institute, 2004). Consequently, a risk management system must be implemented to achieve the four objectives. These systems typically facilitate one or more elements of the process outlined in Figure 5. It is worth highlighting the similarities in this process and the FSA’s Arrow Framework, Figure 3, which is also risk focused.

Figure 5. Risk Management Process (Securities Institute, 2004)

The first stage of the process involves understanding, recording and categorising a firm's risks in order to understand the types of risks the organisation faces and its level of exposure. COSO II or Enterprise Risk Management (ERM) model recommends establishing objectives and then analysing the risks associated with each objective. Next, it is necessary to assess the likelihood of risks occurring and their impact on the business with regards to indirect or direct loss. This process is known as risk measurement and assessment.

Once risks have been identified, measured and assessed, the organisation is in a position to develop strategies to address them. Thus, mitigation involves reducing the likelihood of the risk occurring and reducing the impact of the risk if it does. In addition, mitigation may involve developing strategies to avoid the risk, or transfer the risk through insurance or outsourcing. On the other hand, the firm may choose to retain the risk. This last possibility occurs when a firm decides that the risk is acceptable in return for profit.

Furthermore, risks must be monitored and the findings reported. This involves adopting appropriate parameters and indicators to measure the level of risk against a pre-agreed appetite for risk. This is an on-going process. Objectivity is required along with an independent attitude towards the policing of risk parameters. The culmination of these approaches leads to the establishment of a risk policy.

7.2 Record Keeping

Record keeping processes are required to create, keep, maintain and locate records which are necessary either to meet regulatory obligations or to prove compliance to auditors or regulators. Almost every aspect of regulatory compliance will require that records are kept and maintained. Furthermore, the regulators themselves are required to create and manage their own records to facilitate their objectives.

Data within organisations can be classified as structured or unstructured. Unstructured data include image, video and audio files, as well as text-based objects such as word processing documents, spread sheets and, crucially for compliance, e-mails. These types of data are inherently difficult to manage and integrate, although some content management solutions make claims in this regard. Essentially, structured data refer to data held within a relational database and managed by a Database Management Systems (DBMS). Consequently, this type of data is far easier to integrate and manage. For organisations to ensure compliance, systems, including content and knowledge management solutions, must be able to analyse and manage both structured and unstructured data. Ulfelder

(2004) highlights the need for organisations to employ technologies in order to make unstructured data both usable and reliable to ensure that compliance data retention requirements are met.

Data storage and record management systems are also essential to ensure the quality and integrity of data, while enforcing data retention requirements, such as email archiving. Search and retrieval technologies are required to retrieve and make available the data necessary for compliance and so support information discovery and communications monitoring. These technologies are often used with Enterprise Content Management (ECM) solutions. ECM aids compliance by controlling document sharing, access, version and revisions and in addition can help raise awareness of new compliance-related polices by alerting user groups when documents are accessed or revised. Often included in such technologies is an element of knowledge management. Examples of compliance documents, which are managed by such systems, include compliance manuals and meeting minutes.

Finally, in order for all systems to coexist and share information approaches are required to ensure adequate systems' integration. This can be defined as the amalgamation of the company's information systems and databases. This cohesion aims to improve the flow of business processes and thus aid the automation of such processes. When systems are not integrated, operating costs are increased as processes are often partly automated and require manual input. Consequently, the risk of non-compliance is increased through human error. Wagner and Dittmar (2006) advise that most auditors feel that the weakest aspect of internal control is the manual processes. System integration is relevant, not only internally within financial organisations but also there exists the potential to increase the efficiency and effectiveness of the regulatory process by firms integrating their systems with the regulators. Correspondingly, the monitoring of capital markets from the macro-prudential perspective, described by Turner (2009), will require the acquisition, aggregation and summary of data from numerous firms.

7.3 Internal Control and Monitoring

Clearly, all the responses to the financial crisis previously described will rely heavily on appropriate business processes and technology for its implementation. However, processes and systems for implementing internal controls over such systems and processes are required to ensure compliance. Internal controls refer to the methods regulators require an organisation to establish in order to encourage compliance with policies and procedures, to safeguard assets, and ensure the reliability of accounting data.

When considering frameworks for managing internal control we can look to the Committee of Sponsoring Organizations (COSO). In 1992, COSO issued the Internal Control - Integrated Framework in order to help businesses and other entities to assess and manage their internal control environments. COSO defines internal control as a process which is affected by an organisation's board of directors, management and other members of staff and is designed to aid companies in achieving their objectives in three interrelated categories: firstly, the effectiveness and efficiency of operations; secondly, the reliability of financial reporting and thirdly, compliance with applicable laws and regulations. A key element is the Control Activities component, which relates to business processes. Control Activities are defined as the processes which help ensure that management directives are followed and actions necessary to mitigate risks and achieve the enterprises' objectives are executed. These activities occur throughout the organisation at all horizontal and vertical levels and include a range of activities, "as diverse as approvals, authorisations, verifications, reconciliations, and reviews of operating performance, security of assets and segregation of duties" (COSO, 1992 p.1). Furthermore, COSO states that internal control is an on-going process and should be considered as a means to an end and not an end in itself. In addition, the framework advises that internal controls will never

completely eliminate risk but can provide reasonable assurance that controls are in place to mitigate risk (COSO, 1992).

However, regulators should also seek to ensure not just that procedures are in place but that they are monitored for their appropriateness and effectiveness. Monitoring can be thought of as a process which, over time, assesses the quality of the internal control system. Two strategies are useful in achieving this end and maybe used separately or in conjunction. Firstly, on-going monitoring during the course of operations requires regular management and supervisory activities. Mechanisms should be in place to report control deficiencies upstream all the way to the board, depending on the seriousness of the breach. The second approach involves separate evaluations, the scope and frequency of which will depend on the assessment of risks and the effectiveness of on-going monitoring procedures (COSO, 1992). This is the role of external auditors as well as the regulator.

Tarantino (2006) suggests that there are three types of automated internal control solutions. These are monitoring and visualisation, prevention and detection systems. Tarantino (2006) uses the analogy of a burglar security system and suggests that prevention systems represent strong locks, while the detection element represents the alarm system which is triggered on undesired entry. This element may include systems to monitor the activities of the intruder. He suggests that many software vendors have combined prevention and detection capabilities. The monitoring/visualisation element provides the means to identify actual intrusion against false alarms using key performance indicators (KPI) and scorecards. These elements report on the efficiency and relevance of processes as well as providing risk forecasting. In larger organisations where thousands of users create many thousands of transactions on a day-to-day basis there exists the need to feed these outputs into a user friendly dashboard, which can summarise data and alert management when problems arise.

Clearly, effective IT governance is essential in achieving effective internal controls. The Control Objective for Information and Related Technology or COBIT framework was developed by the Information Systems Audit and Control Association and the IT Governance Institute in 1992 and is currently in its fourth edition. COBIT provides standards for IT security and control practices and provides a solid base upon which IT related decisions and investments can be made. Decision making, regarding the acquisition of IT hardware and software, is supported through the development of strategic plans for IT, which subsequently help define the required IS architecture. COBIT's elements map to the five components of COSO and thus help the firm to implement COSO. While COSO provides an internal control framework for the enterprise, COBIT provides an internal control framework for IT.

7.4 Disclosure

All the regulatory responses highlighted previously will require the ongoing monitoring of firms by financial regulators and so processes that enable disclosure to regulators will be required. Furthermore, disclosure requirements may vary in relation to the organisation's compliance obligations which, in turn, will heavily depend on the types of financial products and services it offers. Consequently, the disclosure requirement may be universal in stipulating what information is required by which regulator but the actual granularity of the data will differ depending on the firm's specific regulatory exposure and the market data it utilises. Here, technologies which facilitate and enable communications are essential.

In addition, requirements for disclosure are likely to further increase as system-wide monitoring is implemented by the PRA.

8. Conclusion

This discussion aims to highlight the reasons for the recent financial crisis and the regulatory landscape in order to understand how government responses can be enabled by ICT. e-Government in the context of financial regulation refers to the ways in which regulators can use ICT to facilitate a better framework of regulation and to plug the policy gaps that were revealed by the failure of so many financial organisations. To this end, we have identified processes, which are of key importance in meeting the upcoming regulatory requirements and have described the ways in which ICT may facilitate their implementation.

These processes are record keeping, internal controls and monitoring, risk management. The identified processes are mutually dependant. Clearly, effective risk management will be facilitated through the maintenance of transaction-related records and appropriate controls. Internal controls and monitoring resources should themselves be risk focused and are again dependent on accurate record keeping. All of these processes are dependent on effective ICT.

Serious issues arising from the operation of these processes must be reported to the FSA via a disclosure process. In addition, the FSA performs a risk assessment, utilising its Arrow II framework, which requires financial institutions to disclose the information necessary to complete the assessment. In many ways, this process is analogous to a citizen providing required information to a local government authority.

At the level of the disclosure process, there exists potential for the standardisation of interfaces, agreements and information requirements, thereby enabling enhanced interactions between government and business through improved integration. We suggest that lessons can be learnt from e-Government-focused research and literature. For example, Archmann and Kudlacek (2008) highlight the role of interoperability and addresses associated success factors and barriers. They propose that government entities (in this case national regulators) may learn and develop from exchanging views on established practices. While Undheim (2008) identifies generic success factors such as achieving leadership buy-in, utilising the most simple technologies possible and ensuring early stakeholder and user involvement. Kubicek and Cimander (2009) provide a useful review of interoperability frameworks and advocate standardisation at the technical, process and organisational levels.

Undheim and Friedrich (2008) suggest that interoperability can be best supported through open standards. Consequently, we advise member state's regulatory authorities to adopt such standards to ease communication and interaction. By doing so national regulators may further integrate their disclosure processes with institutions, allowing enhanced surveillance and monitoring in almost real time. Furthermore, the PRA is tasked with monitoring systemic risk and so must pool information from a number of institutions, which occupy key positions in the value chain. To this end, interoperability and open standards will ease the process by which such information is collected and also improve analytical capabilities and thereby provide a better understanding of the relevant risks. By better understanding the risks to which the UK economy is exposed, there exists the potential for better policy making and to provide a more stable economic environment.

The identified processes and associated systems are relevant not only to financial organisations but to the regulators as well. The FSA and most probably the CPMA and PRA are adopting a risk-based approach to regulating firms and so they require strong risk-management processes and systems internally. In addition, they will require strong internal controls and monitoring processes to track firms appropriately and avoid the criticism that they are "asleep at the wheel" should another financial crisis occur. This is especially important for the PRA whose task is to monitor systemic risk and so ensure that no issues fall through the cracks.

Furthermore, the adoption of open standards internally will facilitate enhanced sharing of information across different regulatory functions. This is especially relevant where there is more than one regulatory body, within a member state, that need to cooperate with one another as will be the case in the UK after the FSA is disbanded.

The Lamfalussy Process requires that regulators communicate and interact with one another and the European Commission to ensure specific Directives are being appropriately administered. Archmann and Castillo (2009) highlight the potential of interoperability to enable cross-border interaction. Consequently, there exists potential for e-Government approaches to facilitate government-to-government interaction for example, sharing a database among national regulators with similar functional walls (Lee, Xin, & Trimi, 2005).

To summarise, as the burden of compliance increases so does the requirement for the effective management records across departments within financial organisations, as well as between the regulator and affected firms. Across the EU there exists a desire to standardise and harmonise, a potential benefit of which includes the possibility to develop and where they exist to enhance clear specifications so that electronic documents can be recognised, authenticated and processed by different regulatory bodies and financial organisations across the EU.

Increased disclosure requirements resulting from regulation aimed at preventing another financial crisis provides an opportunity for regulators and financial institutions to more closely integrate their systems and improve the efficiency and effectiveness of compliance activities, thereby addressing a key concern of financial organisations, namely the upcoming increased cost of compliance.

The potential of e-Government to this end should not be discounted. There already exist a number of initiatives aimed at benchmarking and improving e-Government from which national regulatory authorities could learn (Codagnone & Undheim, 2008). Millard (2008 p. 1) highlights how e-Government policy has shifted from chiefly focusing on efficiency to addressing both efficiency effectiveness and outcomes. This is in synergy with the FSA's stated aim to be an outcome focused regulator. Millard (2008) espouses the use of a 'local small scale approach' which is also 'more immediate and real time' and so decreases the timeframe over which evidence becomes available. Such an approach could easily be facilitated through the integration of the disclosure process previously described.

Clearly, the proposed changes to the UK regulatory environment will require further investment in ICT by government agencies and so there exists the possibility to create further private-public partnerships to deliver an enhanced regulatory environment. This investment may in turn contribute in some way to stimulating the EU economies.

In conclusion, e-Government in the context of governance, risk and compliance has a strong contribution to make to support the ongoing efforts to enhance and improve the regulation and monitoring of financial entities, by both increasing the efficiency of the process by which firms are regulated and improving the scope and effectiveness of the regulations themselves. Finally, we advise scholars, practitioners and policy makers to evaluate existing e-Government approaches in the context of regulatory compliance in order to better harness the potential of ICT.

References

Alford, D. (2006). The Lamfalussy Process And Eu Bank Regulation: Another Step On The Road To Pan-European Regulation? Annual Review Of Banking & Financial Law, 25(1), 389 - 435.

Archmann, S. & Castillo. J.I. (2009). Interoperability and community building for transformational

e-Government. European Journal of ePractice, 6(January), 25-29.

Archmann, S., & Kudlacek, I. (2008). Interoperability and the Exchange of Good Practice Cases. European Journal of ePractice, 2(February), 3-12.

Butler Group. (2004). Solutions for Compliance, retrieved August 23, 2006 from http://www.butlergroup.com/research/reportHomepages/Solutions%20for%20Compliance/SfC_Report_Management_Summary.pdf.

Codagnone, C., & Undheim, T. A. (2008). Benchmarking e-Government: tools, theory, and practice. European Journal of ePractice, 4(August), 4-18.

COSO. (1992). Internal Control - Integrated Framework Executive Summary, retrieved August 19, from http://www.coso.org/IC-IntegratedFramework-summary.htm.

EC. (2009). Economic Crisis in Europe: Causes, Consequences and Responses, retrieved January 24, 2011, from http://ec.europa.eu/economy_finance/publications/publication15887_en.pdf.

Europa. (2002). Financial markets: Commission welcomes Parliament's agreement on Lamfalussy proposals for reform, retrieved January 23, 2011 from http://europa.eu/rapid/pressReleasesAction.do?reference=IP/02/195&format=HTML&aged=1&language=EN&guiLanguage=en.

European Commission Information Society (2010). ICT for Government and Public Services, retrieved December 13, 2010 from http://ec.europa.eu/information_society/activities/egovernment/index_en.htm.

FSA. (2006). The FSA's risk assessment framework, retrieved January 24, 2011 from http://www.fsa.gov.uk/pubs/policy/bnr_firm-framework.pdf.

FSA. (2009a). Principles-based regulation Focusing on the outcomes that matter, retrieved December 2, 2010 from http://www.fsa.gov.uk/pubs/other/principles.pdf.

FSA. (2010a). Lamfalussy, retrieved January 24, 2011 from http://www.fsa.gov.uk/pages/About/What/International/european/lamfalussy/index.shtml.

FSA. (2010b). Operating Framework, retrieved September 15, 2010 from http://www.fsa.gov.uk/pages/About/What/Approach/Framework/.

FSA. (2011a). Financial Services Authority: Handbook, retrieved January 24, 2011 from http://fsahandbook.info/FSA/html/handbook/.

FSA. (2011b). Principles of good regulation retrieved retrieved January 24, 2011 from http://www.fsa.gov.uk/pages/About/Aims/Principles/index.shtml.

H M Treasury. (2010). A new approach to financial regulation: judgement, focus and stability, retrieved December 15, 2010 from http://www.hm-treasury.gov.uk/d/consult_financial_regulation_condoc.pdf.

Kubicek, H., & Cimander, R. (2009). Three dimensions of organizational interoperability Insights from recent studies for improving interoperability frame-works. European Journal of ePractice, 6(January), 3-14.

Lee, S. M., Xin, T., & Trimi, S. (2005). Current practices of leading e-Government countries. Communications of the ACM, 48(10), 99-104.

Milard, J. (2008). e-Government measurement for policy makers. European Journal of ePractice, 4(August), 19-32.

Osbourne, G. (2010). Speech at The Lord Mayor's Dinner for Bankers & Merchants of the City of London by The Chancellor of the Exchequer, The Rt Hon George Osborne MP, at Mansion House, retrieved August 18, 2010 from http://www.hm-treasury.gov.uk/press_12_10.htm.

Schaub, A. (2005). The Lamfalussy process four years on. Journal of Financial Regulation and Compliance, 13(2), 110-120.

Securities Institute. (2004). Operational Risk Official 6th Edition IAQ Work book: Centurion House, The Chartered Institute for Securities & Investment, London.

Tarantino, A. (2006). Managers Guide to Compliance: Wiley, New Jersey.

Turner, A. (2009). The financial crisis and the future of financial regulation, retrieved December 17, 2010 from http://www.fsa.gov.uk/pages/Library/Communication/Speeches/2009/0121_at.shtml.

Turner, L. (2009). The Turner Review A regulatory response to the global banking crisis, retrievd December 18, 2010 from http://www.fsa.gov.uk/pubs/other/turner_review.pdf.

Ulfelder, S. (2004). Building A Compliance Framework. Computerworld, 38 (27), 1-3.

Undheim, T. A. (2008). Best Practices in e-Government:- on a knife edge between success and failure. European Journal of ePractice, February(2), 23-46.

Undheim, T. A., & Friedrich, J. (2008). The Momentum of Open Standards - a Pragmatic Approach to Software Interoperability. European Journal of ePractice, 5(October), 4-16.

Wagner S. & Dittmar, L (2006). The Unexpected Benefits of Sarbanes-Oxley. Harvard Business Review 84(4), 133-140.

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Governments could save millions by reducing their dependence on a single desktop PC software vendor

Europe's public administrations are needlessly spending millions by not tackling their dependency on a single proprietary system for their desktop computers and office applications. This has already led to suboptimal choices in licensing for and use of desktop software and desktop IT applications. It is also causing inflated prices for desktop IT solutions while lowering their quality by hindering innovation.

Governments may be hoodwinked into believing that switching to a vendor-independent desktop PC infrastructure is costly. However, in the long run, what may be truly expensive are all of Europe's fifteen million civil servants limited to using the same proprietary platform with no available alternatives, resulting in cost inflation due to a monopoly in government and across society; the risk of long-term data corrosion resulting from limited commitment of commercial vendors to assure data longevity or exceedingly high maintenance costs.

This article presents unique data, collected over the past four years during the author's reporting on the EU's public administration's use of open source. These data show that the desktop PCs of Europe's governments are completely locked in to a single proprietary software vendor: barely ten thousand of Europe's civil servants use a desktop system that does not depend on this proprietary software vendor. This amounts to one fifteen-hundredth (0.0007) of the total of fifteen million desktops.

The article next identifies real solutions, put into practice by public administrations across the EU. Their experiences prove that a vendor-independent desktop PC is not only possible but that such a switch saves money and simultaneously offers civil administrations more choice in IT solutions, thereby helping them to improve their performance.

The paper shows that, with real political support and adequate change management, switching to a vendor-independent desktop can readily pay for itself.

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Keywords

Vendor independence, vendor lock-in, interoperability, innovation, open source software, desktop PC operating systems, office applications

> "Well, social relevance is a shtick, like mysteries, social relevance, science fiction"...-- Art Spiegelman "

1. Introduction - Findings

There are three reasons to limit this paper to computer desktop PCs and to public administrations. These are that 1) the fact that this specific software market is marked by a crippling lack of competition and resultant cost inflation; 2) public administrations have unique obligations with respect to data longevity, and over-reliance on a single proprietary vendor poses a significant additional risk of excessive costs; 3) as public entities, such bodies are in a unique position to negotiate and set standards and to intervene in order to correct market failures. The focus of this article is on European public administration simply because that is the source of all of the collected data presented here.

Oddly enough the first, essentially economic, argument is the topic of only a few academic papers. One of these is written by economists from the Netherlands Bureau for Economic Policy Analysis, CPB - (Bijlsma et al, 2009). Bijlsma et al describe the negative consequences of customer lock-in and from switching costs. The market is tipped "towards a certain technology or standard, not necessarily the one offering the highest user benefits, creating a monopoly position for the seller of that technology."

"High switching costs cause customer lock-in, which results in market power for software producers with a first-mover advantage. High switching costs may therefore lead to higher prices and cause entry barriers for suppliers of new software products." Bijlsma et al state that "in software markets, the implication is not necessarily that production by a single firm is the most efficient outcome."

The Dutch CPB study examined under which circumstances it may be desirable for governments to stimulate open source software as a response to market failures in software markets. The authors identify three markets, those for PC operating systems, for office applications, and for enterprise content management software, all three of which they 'tentatively' label as suffering from serious vendor lock-in. In a public discussion in 2009, the main author said the word 'tentatively' can safely be omitted.

Tentative or not, the CPB's opinion on a monopoly will not surprise anyone. "The resulting high monopoly price creates a deadweight loss, that is, a loss in welfare that occurs when demand is reduced due to a mark-up in the price." (Bijlsma et al, 2009). With welfare, economists mean consumer and producer surplus.

A second paper (MacMacCarthy & Updegrove 2009), as yet unpublished but available online, focuses on the failure of the market for office productivity tools (also known as office suites, encompassing word processors, spreadsheet software and presentation tools). The authors argue that government support for the open document format ODF as the single open standard for office suites will help restore and promote vendor competition in this area, and allow for dispersed and public control of further developments of an open standard for office suite programs, as well as increased choice in adjacent markets (for a definition of an open standard, see MacMacCarthy & Updegrove 2009, or Ghosh, 2005): "The soft power of procurement has so successfully been demonstrated to date that it would be tragic if governments were to relax their principles at this time, especially in the European Union, where landmark efforts such as those of the Interoperable Delivery of European e-Government Services to public Administrations, Businesses and Citizens (IDABC) are leading the way to achieve the promises of open government, open information sharing, and citizen choice."

Lerner & Schankerman (2010) also provide a partial analysis on market failures. They write that these "are not large enough to suggest that either [proprietary or open source software] development is seriously disadvantaged by the normal play of competition," and that "network effects do not pose a serious enough threat to effective competition that would justify government intervention, provided

that an appropriate regulatory framework is in place." However, these authors only discuss the impact of open source on the total software market, and never focus on any particular part. They thus do not discuss open source in the context of the failure of the software markets for desktop operating systems and office suites.

The focus on the PC market failure has so far not been seen in any of the available studies in the area of open source software, such as the research published in the International Journal of Open Source Software and Processes (IJOSSP), or the papers published in The Economics of Open Source Software Development (Bitzer and Schroder, 2006). Even economic studies focusing on open source software by, for instance, Economides and Katsamakas, or Lerner and Tirole (Economides, Katsamakas et al, 2006) fail to point out the obvious: in the market for desktop PCs operating systems and the market for office productivity tools, and especially in the case of public administrations, there is no competition.

Sadly, the failing of the software market for desktop PC operating systems and for office applications is ignored in national or regional IT policies. It is not part of the policy recommendations written by the Danish governments IT and Telecom Agency (ITSK, 2009), nor mentioned in the law adopted by the Italian region Puglia[1], or in the Open Source Software Policy adopted by the government of Malta[2]. The argument is not used in the Danish Board of Technology's extensive analysis and recommendations on the use of open source software (Danish Board of Technology, 2002), though this describes vendor lock-in as one of the reasons open source software should be of interest to the government. And getting rid of vendor lock-in is also part the motivation for resolutions adopted by the Dutch parliament in November 2002[3] and by the Portuguese parliament on December 2010[4].

This last observation indicates that at least some of Europe's politicians are aware of the problem. Yet, in spite of policies written nearly ten years ago, today all of Europe's public administrations are still dependent on a single proprietary system for their desktop computers and office applications. The degree of this total dependency became tangible to this author while writing news items on public administrations using open source software, for the European Commission's OSOR project.

Table 1 lists the results of the number of vendor independent desktop PCs in use by public administrations in the 27 EU member states. A simple tally like this has not been published before. Please note that the data in the second column are preliminary, and should be treated with caution; they are based entirely on the numbers encountered in the author's news items written in the past decade.

Nevertheless, I doubt that many vendor independent desktops are missing from the second column. Yet even if, say, a thousand vendor independent desktops had been missed, or ten times that number, the result would not change: it can safely be concluded that all fifteen million civil administrators in the EU rely on the same proprietary software vendor.

1 La Regione Puglia, (2010). Norme in materia di pluralismo informatico, sull'adozione e la diffusione del free libre open source software e open hardware e sulla portabilita' dei documenti nella pubblica amministrazione regionale e locale, December 2, 2010, retrieved January 14, 2010 from http://www.nichivendola.it/cms-upload/ddl_os_6-1.rtf

2 GMICT Policies, June 1,2010 retrieved January 14, 2010 from https://collaboration.mita.gov.mt/ictpolicies/GMICTPolicies/General/GMICT-P-0097-Open-Source-Software-v1.0.pdf

3 Motie Vendrik, November 22, 2002, retrieved January 14, 2010 from http://nl.wikisource.org/wiki/Motie_Vendrik

4 Utilização de formatos electrónicos livres na administração pública Grupo Parlamentar, Bloco de Esquerda, retrieved January 14, 2010 from http://beparlamento.esquerda.net/media/PLNormasAbertas.pdf

Table 1: Number of vendor independent desktop PCs in use by public administrations in the 27 EU MS

Country	Vendor independent desktops (total numbers)	Civil servants (thousands)	Population (millions)
AT	1000	275	8.4
BE	200	430	10.8
BG	100	237	7.6
CY	0	31	0.8
CZ	230	323	10.5
DK	0	161	5.5
EE	0	38	1.3
FI	120	117	5.3
FR	71000	2553	64.7
DE	26000	2874	81.7
GR	0	383	11.1
HU	0	271	10
IE	0	106	4.5
IT	3500	1409	60.4
LV	20	83	2.4
LT	0	82	3.3
LU	0	22	0.5
MT	0	14	0.4
NL	350	562	16.6
PL	8	932	38.1
PT	0	323	10.6
RO	0	467	21.5
SK	0	159	5.4
SI	1	54	2
ES	700	1231	46
SE	0	254	9.3
UK	1000	2011	62
Totals	**104229**	**15402**	**500**

Sources: Column B: Number of desktops PCs using an open source operating system, i.e. a system not dependent on one software vendor. The numbers are taken from OSOR news items and to be treated with caution. Colum C: Eurostat 2007 figures in thousands excluding health care and education. Column D: Wikipedia.

The economic arguments and Table 1 are the basis for the second reason to focus on the software that runs the desktop PCs of all of Europe's governments. As the CPB economists realise, once locked in these monopolised markets will not be corrected by normal market processes.

This paper does not mean to make open source the only solution for public administration's desktops. Neither is it about promoting open standards as the only way to ensure desktop interoperability. (The economic usefulness of government support for the latter has been made clear by others, for instance by the European Commission's Free/Libre/Open Source Software: Policy Support project (Flosspols). See the Flosspols study (Ghosh, 2005) that recommends that "open standards should be defined in terms of a desired economic effect: supporting full competition in the market for suppliers of a technology and related products and services, even when a natural monopoly arises in the technology itself".) My data shows that the desktop PC market needs intervention by governments, and hence by public administrations.

I will show below that governments can use their spending power to restore the balance. Unfortunately, just a few politicians call for the use of this instrument. After a fairly hot political debate in Denmark, one such advocate, Per Clausen, parliament member for the Enhedslisten (Unity List), in January 2010 cast his vote in favour of the government's use of an open document standard (ODF). "Our view is that we should choose a single standard. We could leave that decision to the market, but our textbooks also say that the state should intervene when that market develops in the direction of monopoly."[5]

Europe's most famous politician aware of the damaging effects of vendor lock-in, is the European Commission Vice-President for the Digital Agenda, Neelie Kroes. This summer, at a conference Brussels organised by Open Forum Europe, a trade group on open source and open standards, she called the dependence on a single IT vendor "a waste of public money that public bodies can no longer afford."[6]

"Many authorities have found themselves unintentionally locked into proprietary technology for decades. After a certain point that original choice becomes so ingrained that alternatives risk being systematically ignored, no matter what the potential benefits."

It is difficult to calculate how much money is locked in the PC desktops of Europe's public administrations, but a rough estimate may begin with the costs for all those licenses, which could amount to a conservative couple of billions per year (Fifteen million times a three hundred Euro.)

All public administrations showcased on the OSOR website indicate that they have saved money with free and open source software. This was recently substantiated by a new study. Martti Karjalainen's thesis on IT use at the Finnish judicial system concluded that the move to OpenOffice in 2007 has so far resulted in considerable savings, even when including the costs for licensing, maintenance and training, over a period of six years (Karjalainen, 2010). The migration ultimately took 1.9 million Euro, less than one-third of the switch to the most often used proprietary solution (6.8 million). "The 'economic efficiency' of OpenOffice is impressive," writes Karjalainen.

Karjalainen in his thesis, published last October, compares in great detail the costs of two proprietary office solutions and the open source alternative, including a breakdown of the kind of problems users reported at the IT help desk.

But saving money is just half the story. When free (and open source) alternatives would be used,

5 Hillenius, G. (2010). DK: Danish state administrations to use ODF, OSOR news item, January 29, 2010, http://www.osor.eu/news/dk-danish-state-administrations-to-use-odf

6 Kroes, N. (2010) How to get more interoperability in Europe, speech, June 10, 2010, from http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/10/300&format=HTML&aged=0&language=EN&guiLanguage=en

who knows what our civil administrators may yet aspire to do? For instance, in the French city of Arles, open source is slowly making inroads on the desktops of all its civil administrators and François Raynaud, responsible for service development at the IT department, says that his department installs a lot more software desktop applications than it would have if it had been restricted to proprietary software.[7] The city now uses these freely available systems for group-ware, work-flow, content management, blogs, and, says Raynaud: "Anyone who wants it gets Gimp[8], but we would only have had budget for a handful of licenses for its proprietary alternative Photoshop, which costs 1500 Euro." Not only are more civil servants able to manipulate photographs, making them more productive, the money saved can be spent on other useful solutions.

At this point those who are drilled to adhere to strict IT management systems such as ITIL object that users should not be allowed free access to software applications that they do not need. To me this objection shows that ITIL and their ilk fail to provide for the benefits provided by free and open source software, and thus add to the stranglehold on our public servants.

The third pressing reason fifteen million civil servants should not be using a proprietary PC system, is that it may well lead to data corrosion and the long-term loss of information. Evidence for this comes from Sweden (Lundell, B & Lings, B., 2010), where two researchers from the University of Skövde, Björn Lundell and Brian Lings sent three simple requests to all 290 municipalities in Sweden. They asked for a copy from the first municipal council meeting in 1999, the last municipal council meeting in 2008 and a copy of the oldest minutes available in electronic form. The outcome was alarming.

Many councils, 40 percent, were not able to provide the 1999 minutes. In one case a municipality replied it does not store documents electronically. Others either admitted having erased all the documents from 1999, replied that they could not find the minutes or that technical issues prevented them from submitting the documents: "A different system was in use then, to which we do not have access today."

"After just ten years there are problems with accessing or reading files that are known to exist", conclude the two researchers. In a number of cases this was because the file is stored in a proprietary format only accessible with obsolete tools no longer available. "The oldest minutes are not available and the minutes from 1999 should be available but the tool has been phased out from the organisation. Your request has triggered our IT department to resurrect the software", replied one municipality.

Using open standards and open source software would help to avoid this data corrosion, the first by making public the technical specification on how the data is created and stored, the latter by guaranteeing public and permanent access to the source code of the software application used to create and store it.

So far public administrations have limited understanding of the benefits of vendor independence, concluded in November Mathieu Paapst, a (Dutch) legal specialist working on his PhD Thesis on IT procurement[9]. "They often bungle their procurement by requesting products only one manufacturer can deliver."

It is a public secret that another reason for government CIOs to avoid free software alternatives is the so-called budget envy. An IT manager looking to make a career move would prefer to showcase

7 Hillenius, G. (2010). FR: Vendor independence helps save money at city of Arles, OSOR news item, November 22, 2010, http://www.osor.eu/news/fr-vendor-independence-helps-save-money-at-city-of-arles

8 Gimp, the Graphic Image Manipulation Program, is a freely distributed piece of software for such tasks as photo retouching, image composition and image

9 Paapst, H.M.(2010) ICT beleid en aanbestedingspraktijk, from http://www.rug.nl/staff/m.h.paapst/research, retrieved January 7, 2011.

the managing of a 6.8 million Euro software transition, rather than admit it would have been possible for a mere 1.9 million Euro. My OSOR findings indicate that all over the EU, IT tenders often exclude competition and discriminate vendors of competing products. On OSOR I have reported on examples in Romania, Portugal, France, the United Kingdom, The Netherlands, Belgium and in the European Commission[10].

Yet OSOR's data show that is not at all hard to move away from the current desktop lock-in. Open source is one of the options, and public administrators can simply ask their peers about this: the biggest governmental users of open source on the desktop are the French Gendarmerie (85,000 PCs), the German Ministry of Foreign Affairs (11,000 desktops), the cities of Munich (3,000) and Zaragoza (700) and a handful of villages just south of Malaga (all together about 350).

The best advice gleaned from these cases, is to make the changes slowly and to communicate to all the users all the reasons for the process. In other words, careful change management is needed.

To understand the importance of this, Karjalainen's dissertation is a good start. The Finnish researcher considers ten years of the development of office applications and in addition, compares the migration at the ministry with those of other governments in Finland. Moreover, he evaluates some successful and less successful examples of authorities in Ireland, Germany, Spain, France, Great Britain, Belgium and the Netherlands.

His dissertation shows the importance of change management. Karjalainen describes so-called 'innovation champions' that appear in every successful migration to open source. The examples are the CIO of the German town of Munich, the ICT Strategy Manager in Bristol in the UK, which switched to Sun's version of OpenOffice, and the Chief Accountant in Lemi, the first Finnish municipality that switched to OpenOffice.

The French Gendarmerie, with 100,000 military, is the largest European organisation with an IT strategy that does not depend on a limited handful of vendors. Between now and 2015 it will switch all 85,000 desktops over to Ubuntu Linux, saving millions per year[11].

These savings are not just on licenses. These militaries also spend far less time on maintenance: "Previously, one of us travelled all year to ensure the anti-virus software was up to date on the PCs in our offices of all the islands in French Polynesia. This now takes us two weeks, and does not involve travelling."

Why is it that the Gendarmerie can rid itself of vendor lock-in that quickly? It is part of the French Ministry of Defence, an organisation where change management is not a problem. "A vos ordres!"

5. Conclusion

Governments have a unique responsibility to ensure healthy economic markets. It is an established fact that the desktop PC market lacks competition, and the presented data show that all of Europe's fifteen million civil servants are locked in to proprietary platforms with dire consequences in terms of costs and sustainability. I agree with those that argue that governments that encourage competition should not confuse this with using open source to regulate the industry. Even so, my data show that European governments to date by and large fail to realise the dangers of vendor lock-in, although ample evidence exists to suggest that switching to desktop alternatives will help not just them, but

10 OSOR.eu, http://www.osor.eu/news

11 Ubuntu case study (2010). French National Police Force saves $2 million a year with Ubuntu, September 2010, http://www.canonical.com/sites/default/files/active/Casestudy-GendarmerieNationale.pdf

their constituency and all industries as well.

The examples presented show that significant savings can be realised by switching to alternatives, such as open source software, and builds the case that the savings by switching to open source will more than compensate for the costs involved in the transition. However, without political support and adequate change management, Europe's government PCs will continue to be locked in.

References

Bijlsma, M , De Bijl, P & Kocsis, V (2009). CPB Document 181, Competition, innovation and intellectual property rights in software markets, Communications & Strategies, no. 74, 2nd quarter.

Bitzer, J. & Philip J.H. Schroder, P.J.H (2006). The Economics of Open Source Software Development, Elsevier Publishers.

Danish Board of Technology, (2002), Open-source software in e-Government retrieved January 7, 2010 from: http://www.tekno.dk/pdf/projekter/p03_opensource_paper_english.pdf.

Economides, N. & Katsamakas, E.(2006). Two-Sided Competition of Proprietary vs. Open Source Management Science 52(7), 1057-1071.

Ghosh, R (2005) An Economic Basis for Open Standards, Free/Libre/Open Source Software: Policy Support, retrieved January 14, 2010 from http://flosspols.org/deliverables.php.

GMICT Policies, June 1,2010 retrieved January 14, 2010 from https://collaboration.mita.gov.mt/ictpolicies/GMICTPolicies/General/GMICT-P-0097-Open-Source-Software-v1.0.pdf.

Hillenius, G. (2010). DK: Danish state administrations to use ODF, OSOR news item, January 29, 2010, http://www.osor.eu/news/dk-danish-state-administrations-to-use-odf.

Hillenius, G. (2010). FR: Vendor independence helps save money at city of Arles, OSOR news item, November 22, 2010, http://www.osor.eu/news/fr-vendor-independence-helps-save-money-at-city-of-arles.

IJOSSP, International Journal of Open Source Software and Processes, from http://www.igi-global.com/Bookstore/TitleDetails.aspx?TitleId=1123&DetailsType=Contents.

ITSK (2009). Open Source Software and the Public Sector, retrieved January 7, 2010 from http://thinktankeu.olliancegroup.com/business_cases/Danish_Open_Source_software_and_the_public_sector.pdf.

Karjalainen, M. (2010) Large-scale migration to an open source office suite: An innovation adoption study in Finland, Tampere University Press.

Kroes, N. (2010) How to get more interoperability in Europe, speech, June 10, 2010, from http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/10/300&format=HTML&aged=0&language=EN&guiLanguage=en.

La Regione Puglia, (2010). Norme in materia di pluralismo informatico, sull'adozione e la diffusione del free libre open source software e open hardware e sulla portabilita' dei documenti nella pubblica amministrazione regionale e locale, December 2, 2010, retrieved January 14, 2010 from http://www.nichivendola.it/cms-upload/ddl_os_6-1.rtf.

Lerner, J. & Tirole, J. (2000). The simple economics of open source, HBS Finance Working Paper No. 00-059.

Lerner, J. & Jean Tirole, J. (2004). The Economics of Technology Sharing: Open Source and Beyond, NBER Working Paper No. 10956.

Lerner, J. & Schankerman, M. (2010). The comingled code, open source and economic development (MIT press).

Lundell, B & Lings, B. (2010) How Open Are Local Government Documents in Sweden? A Case for Open Standards, in Ågerfalk P.J (Ed) Open Source Software: New Horizons, IFIP Advances in Information and Communication Technology, Springer Boston.

MacCarthy, M & Updegrove, A. (2009), Competition in Office Suite Programs, May 2009, retrieved January 14, 2010, from: http://explore.georgetown.edu/publications/index.cfm?Action=View&DocumentID=.

Motie Vendrik, November 22, 2002, retrieved January 14, 2010 from http://nl.wikisource.org/wiki/Motie_Vendrik.

Paapst, H.M. (2010) ICT beleid en aanbestedingspraktijk, from http://www.rug.nl/staff/m.h.paapst/research, retrieved January 7, 2011.

Ubuntu case study (2010). French National Police Force saves $2 million a year with Ubuntu, September 2010, http://www.canonical.com/sites/default/files/active/Casestudy-GendarmerieNationale.pdf.

Utilização de formatos electrónicos livres na administração pública Grupo Parlamentar, Bloco de Esquerda, retrieved January 14, 2010 from http://beparlamento.esquerda.net/media/PLNormasAbertas.pdf.

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Informative system for the anti-crisis regional strategy

The aim of this paper is to describe the informatics infrastructure, the active policies and the results that Basilicata Region (Italy) has adopted to face the recent crisis, with specific focus on the Information System for the anti-crisis regional strategy implementation.

The Italian Government issued a specific law to design the framework for facing the economic crisis and all Italian regions implemented specific active polices to support workers who lost their jobs during the crisis. The paper introduces the already existing labour Information System and the labour market observatory, i.e. a specific tool to extract actual figures about the job market, and how these tools effectively helped public actors to manage and provide anti-crisis actions.

Following the introduction of special Italian laws designed to combat the crisis, together with the granting of unemployment benefits to previously excluded categories of workers, Basilicata Region found that new information procedures were required for the correct and speedy distribution of social assistance. From its inception, the anti-crisis Information System has achieved important results in the management and control of social assistance payments, the active policies applied and reporting, given the financial support received from the European Social Fund.

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e-Government - eservice - employment - job market - anti-crisis - labour - information system -active policies - social assistance - labour market observatory - interoperability - statistics - European Social Found - finance - payment - data visualization - real-time data

> “The anti-crisis Information System of Basilicata Region (Italy) has achieved important results in the management and control of social assistance payments, the active policies applied and reporting, given the financial support received from the European Social Fund.”

1. Introduction

Over recent years, Basilicata Region (Italy) has started implementing specific actions for the improvement of their labour Information System and, following the recent economic crisis, special efforts have been made to deploy regional and national regulations related to the job market and services.

In this context Basilicata has developed and published the Information System for the anti-crisis regional strategy – extraordinary income assistance that represents a new way to help companies and employers handle the job market crisis observed over the last year.

As recommended by European Commission guidelines, the Italian government and Basilicata region have launched operations in support of effective flexicurity (European Commission, 27 March 2009) policies. In this sense, the role of employment services (European Commission, March 2009) is fundamental. It is thanks to informatics that it is now possible to synchronise and monitor active policy action, social assistance and the best way to develop training activities.

Remarkable innovations have recently been introduced by Italian Law No 2/2009 (Italian Parliament, 2009) that introduces urgent measures to support families, employers and companies, and re-qualifies the anti-crisis function in the national strategic framework. In particular, Article 19 introduces the upgrading and extension of the instruments of income protection in the case of suspension from work or unemployment (Sorcione, 2009).

These measures represent an important government tool and are part of the initiatives undertaken at a national level to support those workers affected by the crisis. They are designed to safeguard employment through the enhancement of skills and professionalism.

All Italian regions have set up anti-crisis committees with social actors to coordinate the distribution of social assistance and the activation of actives politics (Isfol-Italia Lavoro, 2010).

In this context, the Basilicata region has signed and ratified a framework agreement with unions and employers' organisations for special unemployment benefits (Basilicata Region, 2010). Basilicata Region has chosen specific system tools in order to achieve:

- prevention of critical situations involving not only employment services, but also job agencies, schools and education systems;
- reassessment of the role of job centres as active management centres for laid-off workers;
- moving the focus to the employer / citizen;
- networking the needs of all the system stakeholders and finding solutions for those citizens who have suffered from the job market crisis.

2. Theory

The Information System for the anti-crisis regional strategy is based on the BASIL system, the Labour Information System of Basilicata Region.

The implementation of this information system (Basil) is located within the framework of the national e-Government programme and as an aid for the operators of provinces which provide information and services in the job market sector (Public Employment Service). Basil has region-wide characteristics,

parameters and features that can be customised at local level in order to provide uniform but flexible service management. Operators can fully manage the back and front office administration of Employment Agencies, including management relating to Legislative Decrees 181/00 (Italian Parliament, 2000) and 297/02 (Italian Parliament, 2002), mobility lists, Law 68/99 - rights for the disabled – (Italian Parliament, 1999) reception, orientation, article 16 of Law 56/87 - public administration selection procedure – (Italian Ministry of Labour, 1987) mandatory appointments, etc.

Following the activation of the autonomous Regional Coordination Node, exchanging information and communications with the Ministry of Labour and the other Italian regions in accordance with the technology standards laid down in the Ministry of Labour Ministerial Decree dated 30.10.2007 (Italian Ministry of Labour and Italian Ministry of Innovation, 2007), Basil is the Regional Compulsory Notifications System for Basilicata and has an estimated flow of 600,000 compulsory notifications per year. Prior to the mandatory reporting system, the exact number of reports (filed on paper and only subsequently entered by job centre operators) was not known. The national figure is 30 million communications per year (Italian Ministry of Labour, 2008). This system permits online communications regarding recruitment, termination, renewal, transformation of employment relationship as defined by the Decree dated 30.10.2007, together with the on-line prospectus for disabled workers covered by Law 68 / 99.

Figure 1: Scheme of Basilicata Labour Information System and information flow

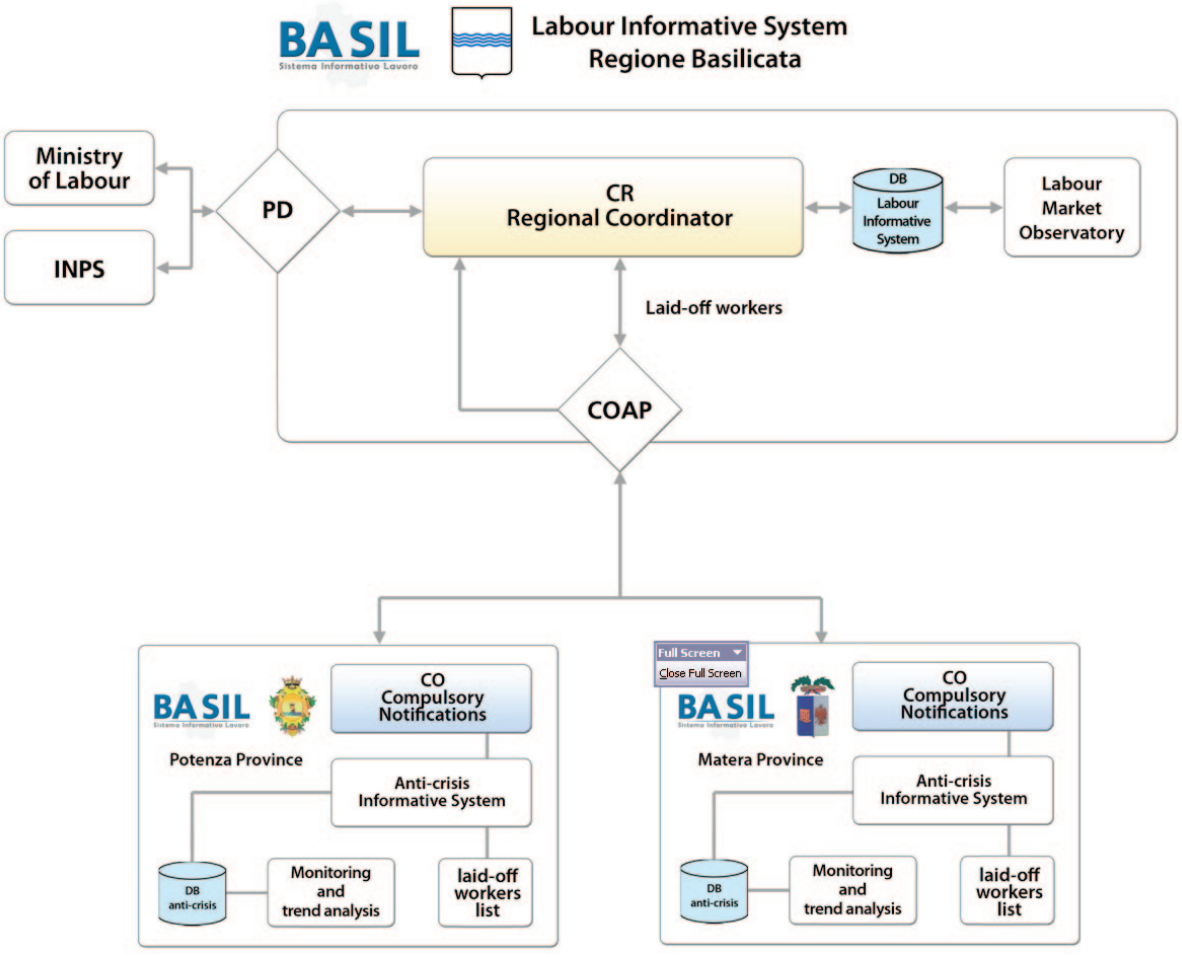


Figure 1 presents the Labour Information System Architecture that is based on the management of Compulsory Notifications (i.e. the notification that any employer, either public or private, has to forward when recruiting, processing, transferring, dismissing any employment relationship) and the Labour Market Observatory (Osservatorio del Mercato del Lavoro – OML), the electronic tool that supplies regional statistics about the job market situation in Basilicata (Spano, 2010). The existence of the observatory meant that specific policies to deal with the crisis could be quickly implemented.

The Observatory has to analyse all aspects of the regional job market, with periodic examination of employees' movements and their variation in relation to many differing factors (time, geographical range, professional skills, etc.), thus allowing a more comprehensive overview of the labour market and therefore more effective planning of employment activity policies.

The results of this analysis are available to the various stakeholders – institutional and private – that are part of the labour market, allowing them to improve their active policies and educational actions. Using the Crisis Management Menu (Gestione Crisi) it is possible to extract data related to online notifications. The data flow may also be observed in this section, i.e. a measured amount in a time interval defined by two dates. The data flow, in fact, gives a quantitative representation in this period and refers to the latest available figures.

It is possible to set two measurement parameters for this section, notifications and terms of employment.

Depending on the type of measure chosen, several options may be selected by rows and columns:

- communication parameters such as the type of form;
- parameters such as the workplace province and the home-address province;
- temporal parameters such as the month and year;
- additional parameters such as the ATECO (Italian Classification of Economic Activity) and gender.

Each measure has a particular set of filters to help narrow down the data search.

Figure 2 – the Labour Market Observatory configuration mask about anti-crisis data – Gestione crisi.

The availability of the Observatory as an already existing tool for retrieving data and provided real data about the job market was fundamental for developing and providing effective tools to manage the effects of the economic crisis on the job market. A specific web based service was implemented in the observatory eService, and Figure 2 shows the section that allows the crisis data to be interrogated through simple drop-down menus. Here, the 'Misura' is the typology for data interrogation, namely 'Comunicazioni' ('unilav', 'unisomm', 'uniurg', 'vardatori') – the notification typology – and 'Rapporti di lavoro' – the job contract. The result of any interrogation is an active table in which the user can apply specific filters (Filtri) for selecting specific subgroups of workers, such as unemployed people, the disabled, etc.

Figure 3 – the Labour Market Observatory anti-crisis output example.

Nascondi tabella risultati

CREA XLS

[sposta qui per rendere il campo filtro]

x	Mese/Anno	Gennaio 2010	Febbraio 2010	Marzo 2010	Aprile 2010	Maggio 2010	Giugno 2010	Luglio 2010	Agosto 2010	Settembre 2010	Ottobre 2010	Novembre 2010	Dicembre 2010	TOTALE
Tipologia di Comunicazione														
Cessazione		3870	3926	4436	4953	5968	9253	7607	4922	8239	2367	5	11	55557
Inizio Rapporto di lavoro		15217	9392	13984	17192	17394	15253	13621	9824	18300	10797	9	3	140986
Proroga		1015	1104	1739	1776	1579	2487	1752	1394	2617	2027	892	2677	21059
Trasformazione		999	955	909	829	1230	1144	1322	770	1090	783	3	0	10034
TOTALE		21101	15377	21068	24750	26171	28137	24302	16910	30246	15974	909	2691	227636

Figure 3 shows an example of the query results according to monthly communication typologies, namely termination – 'Cessazione', hiring – 'Inizio rapporto di lavoro', extension – 'Proroga', and modification – 'Trasformazione'. Each cell gives data for one month. The system can process reports, and can download reports in Excel format.

3. Method

The difficult economic situation of the last few years still produces effects. Repercussions in 2010 showed an increase in the number of companies in financial difficulty which requested measures to cushion the effect of unemployment. In this context, the Basilicata region has provided support to bring together the actors involved in this occupational and production crisis. New statistics have been developed representing the main labour index, allowing the monitoring of employment trends and the effect of the measures taken

3.1 System Flow

For employers and their employees who by law are not eligible for income assistance or mobility (Laws 164/75 and 223/91), extraordinary social assistance has been provided. The Information System for the anti-crisis regional strategy allows authorised users to send applications for special unemployment benefit and job mobility. The Region enables all qualified users to access the Information system with private credentials (i.e. user ID and password) and submit requests that will be collected, analysed, handled and eventually approved by the Regional authorities. The Region also transmits the resulting data to INPS (the Italian National Social Security Institute) which has the responsibility to actually pay the required benefits.

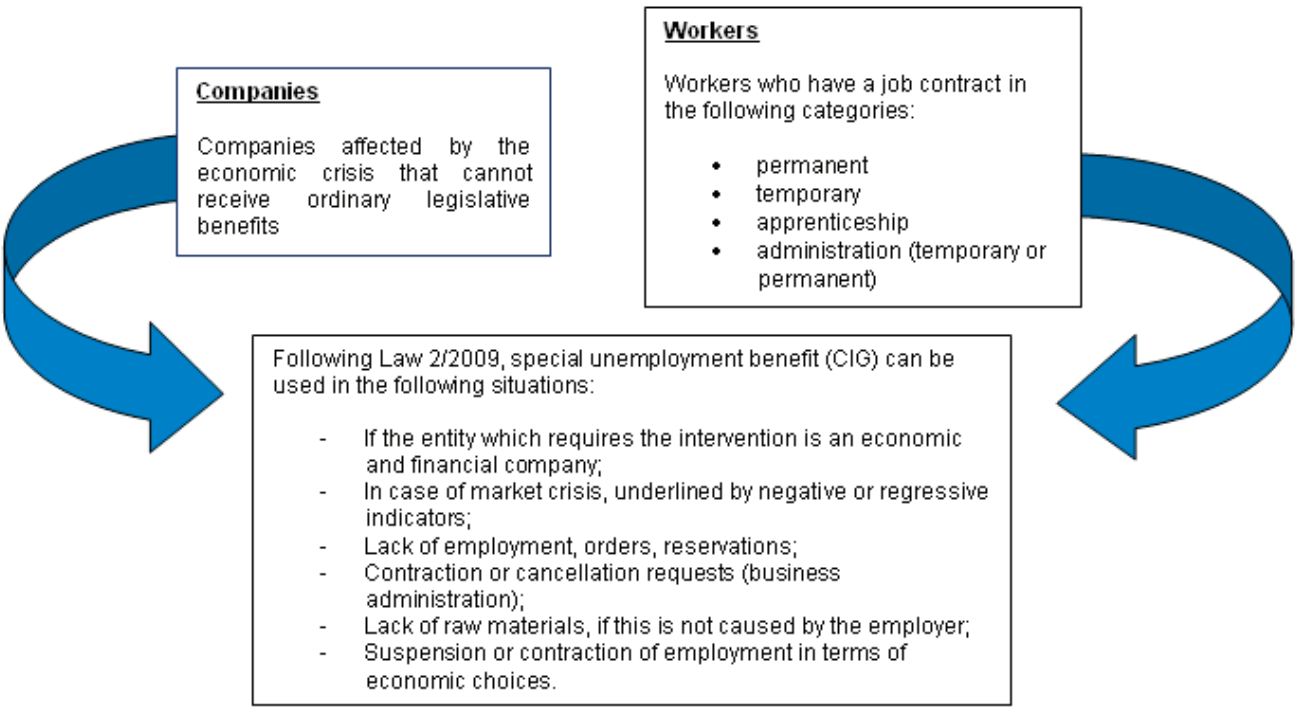
In order to make this process ever faster, the Information System, using cooperative application

tools, will share all the information with INPS in real-time. Using similar cooperative application tools, Potenza and Matera Provinces and their job centres will be able to know in real-time the names of workers who receive special unemployment benefit.

3.2 "Who" and in "Which Cases" the System can be used

There are two possible categories that can benefit from this System, as depicted in Figure 4 below.

Figure 4 – anti-crisis cases workflow



Through this system, the user can proceed through the following five steps:

i. insert / edit / display company information (records, staff, registered office); (see Figure 5)

Figure 5 – company information form

Figure 5 displays the form that the company has to fill-in to request special unemployment benefit. The form provides information about the company and business - 'Azienda', staff - 'Organico', registered office - 'Sede Legale', and chairman - 'Responsabile aziendale'.

ii. modify / display company's location and related search of the sites using an address, city or province filter; (see Figure 6)

Figure 6 – display of company's registered sites

iii. display the list of workers who are entitled to special unemployment benefit, or insertion of new workers. (see Figure 7)

Figure 7 – list of workers 'Lista dei lavoratori'

Lista lavoratori

Codice Fiscale	Cognome	Nome	Data di nascita	Sede lavoro	
SPRRRT74********	SPERA	ROBERTO	**/**/***	**Indirizzo:** ZONA INDUSTRIALE (PZ) **Telefono:** 0971***** **Fax:** 0971***** **Email:** amministrazione@****	
SLVGNN47********	SALVATELLI	GIOVANNI	**/**/***	**Indirizzo:** ZONA INDUSTRIALE (PZ) **Telefono:** 0971***** **Fax:** 0971***** **Email:** amministrazione@****	
CLBNNL76********	CALABRESE	ANTONELLA	**/**/***	**Indirizzo:** ZONA INDUSTRIALE (PZ) **Telefono:** 0971***** **Fax:** 0971***** **Email:** amministrazione@****	
CRNMHL63********	CIRONE	MICHELE	**/**/***	**Indirizzo:** ZONA INDUSTRIALE (PZ) **Telefono:** 0971***** **Fax:** 0971***** **Email:** amministrazione@****	
DNZCMN77********	DANZI	CARMEN	**/**/***	**Indirizzo:** ZONA INDUSTRIALE (PZ) **Telefono:** 0971***** **Fax:** 0971***** **Email:** amministrazione@****	
DBLSTR76********	DI BELLO	ESTER	**/**/***	**Indirizzo:** ZONA INDUSTRIALE (PZ) **Telefono:** 0971***** **Fax:** 0971***** **Email:** amministrazione@****	
MNTGPP47********	MENTISSI	GIUSEPPE	**/**/***	**Indirizzo:** ZONA INDUSTRIALE (PZ) **Telefono:** 0971***** **Fax:** 0971***** **Email:** amministrazione@****	

Figure 7 shows the list of company's employees. Each employee is described by his taxpayer number 'Codice Fiscale', last name 'Cognome', name 'Nome', date of birth 'Data di nascita', and work site 'Sede lavoro'.

Selecting the worker's name gives access to the screen showing database information.

iv. show the various special unemployment benefits (filter options by type: all, new, official) (see Figure 8)

Figure 8 – Search mode of special unemployment benefit applications

The search of special unemployment benefit applications is available by all 'Tutte', started procedure 'Avvio procedura' and official 'Ufficiale'.

v. insertion of new requests (request to initiate the procedure, Journal)

Each month shows a summary of information on the workers involved and their terms of employment as well as special unemployment benefit details, beginning and end dates, conditions and total hours foreseen for each worker. The daily schedule provides, for each month of the declared special unemployment benefit period, a chart containing all the workers made redundant and, for each day of the month, details of the suspension 'Sospensione' / reduction 'Riduzione' of each worker.

The month is selected as shown in Figure 9:

Figure 9 – monthly schedule of suspension / reduction of each worker

In Figure 10 each day shows:

S: full-day suspension for the worker;

R: reduction, specifying the hours of the normal working day during which the worker is laid-off (displayed in a tooltip that appears by placing the cursor over the R).

Figure 10 – specifying of work and laid-off hours for each day

To facilitate viewing and compilation of the week, Saturdays and Sundays are highlighted in dark gray in Figure 9.

After entering the requested data a summary of the requests is generated, as shown in Figure 11:

Figure 11 – list of workers under unemployment benefit

Lavoratore	Rapporto lavoro	Dati cigs		
Codice fiscale: RC[illegible] Cognome: [illegible] Nome: [illegible] Data di nascita: 31/0[illegible]/19[illegible] Comune di domicilio: PIC[illegible]	Data di assunzione: 23/01/2008 Ore settimanali contrattuali: 40	Data inizio: 01/04/2010 Data fine: 30/04/2010 Modalità: Sospensione Ore totali cig: 0		
Codice fiscale: S[illegible] Cognome: ES[illegible] Nome: GI[illegible] Data di nascita: 11/09/[illegible] Comune di domicilio: [illegible]	Data di assunzione: 23/01/2008 Ore settimanali contrattuali: 40	Data inizio: 01/04/2010 Data fine: 30/04/2010 Modalità: Sospensione Ore totali cig: 0		
Codice fiscale: F[illegible] Cognome: F[illegible] Nome: AN[illegible] Data di nascita: 11/0[illegible] Comune di domicilio: [illegible]	Data di assunzione: 13/04/2009 Ore settimanali contrattuali: 40	Data inizio: 01/04/2010 Data fine: 30/04/2010 Modalità: Sospensione Ore totali cig: 0		

Figure 11 illustrates the list of workers with personal details 'Lavoratore'/ type of employment 'Rapporto di lavoro' / period and type of unemployment benefit 'Dati cigs'.

The system will refer back to the summary where the application can be compiled, in which the reasons for the crisis, the state of the company and the active policy must be detailed. At this point the user can view the summary of the application, consult / modify the forecast planning, the application or transmit the official request. Adopting the same procedure as the one used to fill in the application, the user may, in the same way special unemployment benefit requests are managed, request special mobility concessions by compiling the sections relating to the company / offices, workforce, application and summary.

4. Findings

On 30th October 2007 the Italian central government approved and issued an inter-ministerial law about a new electronic service to communicate hiring, contract renewing, etc. about employment status. This innovation has been the result of the collaboration of the Italian Ministry of Labour and the Italian Ministry of Innovation. The law enabled the innovative electronic services for labour (SIL - Sistema Informativo del Lavoro) to be set up. The SIL aims at the development of a common database to share homogeneous data on the labour market in real-time. The result achieved is the "Comunicazioni Obbligatorie" - CO (Compulsory notification) e-Service as an innovative Italian e-service for simplifying, centralising, and guaranteeing the interoperability of information about the employment/unemployment status of people in Italy. The e-service also deals with the management of the employer's status (e.g. business name, ownership, etc).

Table 1 presents the number of notifications since the CO service was introduced

Table 1 - Compulsory Notifications by type and month/year

2008	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
Dismissing	42	58	67	218	340	1048	8152	6503	8584	7558	6458	11901
Hiring	166	160	225	399	764	1936	9769	9946	20541	15444	11451	8484
Extension	5	12	23	39	33	828	1766	1031	2279	2000	1780	3099
Conversion	14	8	21	55	83	105	900	770	1261	1084	936	980
Total	227	238	336	711	1220	3917	20587	18250	32665	26086	20625	24464

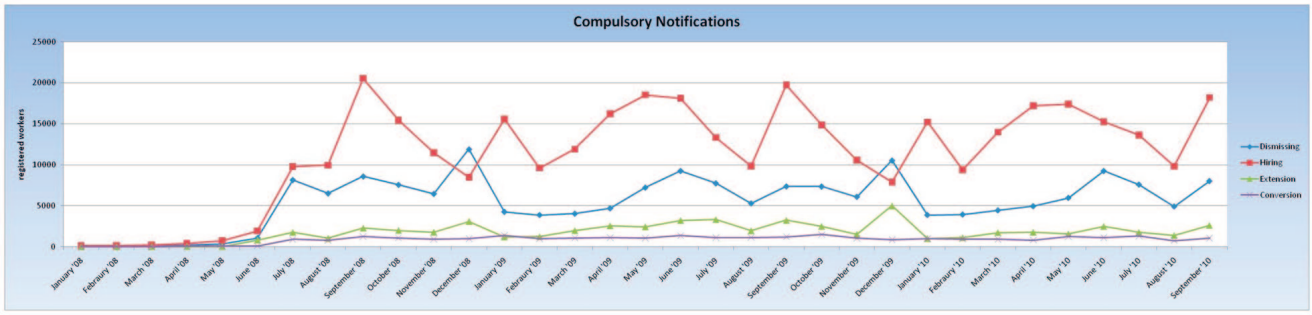
2009	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
Dismissing	4258	3868	4033	4684	7224	9264	7748	5295	7365	7349	6095	10536
Hiring	15571	9616	11897	16215	18527	18105	13317	9851	19756	14868	10541	7906
Extension	1204	1243	1987	2560	2456	3222	3325	1965	3239	2490	1528	4998
Conversion	1370	974	1087	1130	1048	1356	1133	1155	1211	1484	1034	863
Total	22403	15701	19004	24589	29255	31947	25523	18266	31571	26191	19198	24303

2010	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
Dismissing	3870	3926	4435	4953	5966	9253	7598	4913	8025	234	5	8
Hiring	15216	9392	13973	17192	17396	15248	13622	9820	18200	5259	3	3
Extension	1015	1104	1739	1776	1579	2487	1752	1394	2619	1774	645	2580
Conversion	999	955	909	828	1230	1140	1319	761	1070	294		
Total	21100	15377	21056	24749	26171	28128	24291	16888	29914	7561	653	2591

These data permit the impact of active labour market policies, in terms of new recruitment or contract renewals, to be studied. Comparison of data over several years enables yearly hiring to be monitored and creates statistics that then need to be adjusted to economic trends as well as national and regional policies. Thanks to compulsory communications it is now possible to see how many people have received real benefit (every compulsory communication and active policy can be traced back to the individual recipient). Active policy tracking will form part of Observatory development activity in the near future.

Figure 12 shows a graph of notification trends for last three years. It is interesting to note that every year has a peak in hiring in September, probably due to the re-activation of productive activities after the summer holidays.

Figure 12 –Graph produced by the Labour Market Observatory



The system already provides information about future figures: new job contracts for next November and December are already registered.

8. Conclusion

To face the recent economic crisis (European Commission, 2008), the Italian government issued new laws to support families, workers, employers and companies. The Basilicata region has developed new electronic tools for managing the special unemployment benefit applications in accordance with European Guidelines and provided the developed tool through the already existing regional Information System.

The result is the availability of actual, effective, real-time tools for the anti-crisis regional strategy implementation.

Those who can benefit most from all these features, made available by the Information System for the anti-crisis regional strategy are:

- **underprivileged** workers belonging to the following categories: young and adult unemployed, disabled, not working, those who receive social assistance and are seeking a job, workers laid-off by companies in difficulty;
- **companies** which can contact the Provincial Employment Office to request personnel and to whom they are allowed to send electronic requests for unemployment benefit and special mobility, using the Compulsory Notifications procedure;
- **regional and provincial business support services**, which will then manage the activity online, with clear advantages in terms of time, money and efficiency.

The advantage of computerised anti-crisis management is principally that of permitting the region to keep applications, companies, workers and finances under control. Monitoring the sums involved is particularly important as it allows the Region's authorities to keep within budget limits. Before mechanisation of the service, supervision of the amounts involved was uncertain and time-consuming. Online access by companies, enabling them to enter information relating to workers, has greatly speeded up management practices and suspension programming. There are undeniable gains both in time-saving and the reduction of errors.

The system was released in six months, at a cost of some €50,000, and is still currently being customised to cater for regional procedural changes in the management of special unemployment and mobility benefits. Collaboration with INPS is also under way. The main system-implementation

difficulties were found during collective bargaining with employers and unions regarding procedures and the documentation to be supplied in order to gain access to social assistance. These procedures, continually improved by case-experience, have resulted in constant software modifications. Weekly suspension programming and the consequent daily payment calculations have required intense programming and calculation activity.

The primary actions adopted are designed to encourage re-employment and prevent the most harsh situations. This will be done not only through job centres but also work agencies, education and training systems that make up the main players in the current regulatory framework. The aim is also to reassess the role of job centres in order to sustain valid cohesion between regulations and job supply and demand. In this context it is possible to define the importance of the innovative integrated service pact provided by the Provincial Employment Offices. The regional knowledge that these offices has enables them to match demand to supply in the job market, encouraging a really active attitude from workers. The worker is fundamentally at the centre of a network system that takes his or her needs and finds solutions for those facing difficult moments that the loss of a job brings.

The detailed tools available to the Region permit:

- a higher level of information technology procedures
- the elimination of limited design and management of services
- the importance of the citizen
- integration of education, professional training and the job-market in order to offer new specialised skills
- targeted and efficient active policies
- a real and objective supply and demand meeting place
- personalisation of services offered

The use of new social informatics in the management of unemployment benefits and special mobility enables the real-time receipt of workers' names to offer appropriate training and the development of active employment services and policies.

The regional system, which will be fully functional in 2011, foresees cooperation with INPS (Social Security) through data exchange of information regarding eligible people and amounts actually paid, and cooperation with the Regional Information System for Training and Vocational Guidance (SIRFO 2007), reporting the amounts on European Social Found.

Although Basilicata is a fairly small region, it must be stressed that the model developed may easily be installed in other regions where this type of information-integration technology has yet to be implemented.

References

Basilicata Region (2010). Regional Frame Agreement For Special Unemployment Benefits – Regional Committee Decision No. 1160 dated 8/10/2010: Acknowledgment and approval of the Regional Frame Agreement dated 20/09/2010 between Basilicata Region, Social Partners and Employers – retrieved 15/11/2010 from http://www.regione.basilicata.it/giunta/files/docs/DOCUMENT_FILE_539075.pdf.

European Commission (2008). - COM(2008) 706 - COMMUNICATION FROM THE COMMISSION From financial crisis to recovery: A European framework for action - final - Brussels, 29.10.2008, retrieved 15/11/2010 from http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0706:FIN:EN:PDF.

European Commission (27 March 2009). Flexicurity: Indicators on the coverage of certain social protection benefits for persons in flexible employment in the European Union – VC-2007-0780 Final report.doc\Alphametrics Ltd., retrieved 15/11/2010 from http://ec.europa.eu/social/BlobServlet?docId=4239&langId=en.

European Commission (March 2009). The role of the Public Employment Services related to 'Flexicurity' in the European Labour Markets - VC/2007/0927 Final report – Policy and Business Analysis - March 2009, retrieved 15/11/2010from http://ec.europa.eu/social/BlobServlet?docId=3692&langId=en.

Isfol - Italia Lavoro (2010). Report – Regional Measures to combat the employment crisis – Part two – Regional monographs: Active policy action connected to special remedies, for the Ministry of Labour and Social Policies – April 2010, retrieved 15/11/2010 from http://www.cgil.it/Archivio/formazione-ricerca/Lavoro/ALL.2_MonRegionali_ReportCrisi_30Apr10.pdf.

Italian Ministry of Labour and Italian Ministry of Innovation (2007). – Interministerial Decree dated 30 October 2007, retrieved 15/11/2010 from http://www.cliclavoro.gov.it/servizi/azienda/argo02/Documents/decreto30ottobre.pdf.

Italian Ministry of Labour (1987). Law No. 56 dated 28 February 1987 Labour market organisation rules, published in the Official Gazette No. 51 dated 3 March 1987, retrieved 15/11/2010 from http://www.lavoro.gov.it/NR/rdonlyres/7EC81736-40A0-44A7-99F2-074AA9F4D836/0/Legge28febbraio1987n56.pdf.

Italian Ministry of Labour (2008). CO e-Service. 2008: the Italian eGovernment revolution for the Compulsory Communication of the employment status. European Journal of ePractice – http://www.epracticejournal.eu N° 4 – August 2008. ISSN: 1988-625X retrieved 15/11/2010 from http://www.epractice.eu/files/4.6.pdf.

Italian Parliament (1999). Law No. 68 dated 12 March 1999: Employment rights for the disabled, published in the Official Gazette No. 68 dated 23 March 1999, Ordinary Supplement No. 57, retrieved 15/11/2010 from http://www.parlamento.it/parlam/leggi/99068l.htm.

Italian Parliament (2000). Legislative Decree No. 181 dated 21 April 2000: Provisions to facilitate matching labour demand and supply, pursuant to Article 45, paragraph 1, letter a) of Law No. 144 dated 17 May 1999, published in the Official Gazette No. 154 dated 4 July 2000, retrieved 15/11/2010 from http://www.parlamento.it/parlam/leggi/deleghe/00181dl.htm.

Italian Parliament (2002). Legislative Decree No. 297 dated 19 December 2002: Amendments and corrections to Legislative Decree No. 181 dated 21 April 2000, establishing provisions to facilitate matching labour demand and supply, pursuant to Article 45, paragraph 1, letter a) of Law No. 144 dated 17 May 1999, published in the Official Gazette No. 11 dated 15 January 2003, retrieved 15/11/2010 from http://www.parlamento.it/parlam/leggi/deleghe/02297dl.htm.

Italian Parliament (2008). Conversion into law, with amendments of Legislative Decree No 185 dated 29 November 2008 on emergency measures to support families, labour, employment and enterprise, and an anti-crisis reorganisation of the national strategic framework, published in the Official Gazette No. 22 dated 28 January 2009, retrieved 15/11/2010 from http://www.parlamento.it/parlam/leggi/09002l.htm.

Italian Parliament (2009). Law No 2 dated 28 January 2009: Conversion into law, with amendments of Legislative Decree No 185 dated 29 November 2008 on emergency measures to support families, labour, employment and enterprise, and an anti-crisis reorganisation of the national strategic framework, published in the Official Gazette No. 22 dated 28 January 2009, retrieved 15/11/2010 from http://www.parlamento.it/parlam/leggi/09002l.htm.

Maurizio Sorcioni (2009). Anti-crisis measures: The integration of active and passive policies (article 19, Law 2/2009), Studies and Research, Italia Lavoro, 2 December 2009, retrieved 15/11/2010 from http://www.isfol.it/DocEditor/test/File/Presentazione_Ricognizione%20crisi%20(2).pdf.

SIRFO (2007). Regional Information System for Training and Vocational Guidance, retrieved 15/11/2010 from http://sirfo.regione.basilicata.it/.

Spano Vincenza (2010). Labour Market Observatory, Basilicata Region - Epractice.eu case, retrieved 15/11/2010 from http://www.epractice.eu/en/cases/oml.

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Enabling Digital Citizenship

As the pervasive influence of the internet continues to make itself felt, how can governments turn growing numbers of digital citizens (those enabled by the web) into a populace committed to active participation in the delivery of public services, enabled by digital channels? This 'citizenship' implies a readiness to get involved; to take a bigger role in helping government 'do more with less' by using the web for greater self service and interaction with government agencies. Greater digital citizenship demands that governments relinquish their hold on service delivery and use the internet as a means both to reduce costs and to improve levels of service.

This exploratory article sets out to ask questions about the nature of web-enablement in government in a bid to promote debate and raise awareness about the challenges and opportunities of digital citizenship. It considers how many private sector organisations and some governments are already demonstrating consumer openness to the concept of web-enabled self service, co-creation of shared capabilities and direct, online service support for other customers. Can more governments make better use of techniques such as mass collaboration crowd sourcing, which is a proven and cost effective alternative way of asking citizens to participate in their own society around their own skills?

In Australia the government has learnt that the fastest route to finding new ways to use the Internet and web effectively is to actively engage its citizens and ask them to come up with new ideas on how web-enablement might be used to offer better service and better value.

But what about those citizens that have no access to the web? The challenge for a government is how best to balance the needs of its non-digital citizens with a determination to reap the cost and service efficiency benefits of emerging internet-based service strategies.

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Keywords
Digital citizens, Citizenship, eServices, Web enablement, Crowd sourcing, Cost cutting, The Cloud

> "... it is not simply about using new technology to do the same process, but about achieving the same (or even better) outcome in a wholly different way."

1. Introduction

Today's web-enabled digital citizens are not just adept at using 'self service' to solve their needs, but positively revel in their freedom and the power to find and decide upon exactly what they want. Furthermore, they are increasingly known for being both contributors to and consumers of web-based services. The challenge for government is how to turn growing numbers of digital citizens (those enabled by the web) into a populace committed to active participation in the delivery of public services, enabled by digital channels. This 'citizenship' implies a readiness to get involved; to take a bigger role in helping government 'do more with less' by using the web for greater self service and interaction with government agencies. Greater digital citizenship demands that governments relinquish their hold on service delivery and use the internet as a means both to reduce costs and to improve levels of service.

Until now, the standard approach has been one of e-Government, a term that tends to define the provision of access to existing systems and processes from the web but doesn't embrace the potential for digital citizenship.

e-Government has typically adopted a 'done to' and not a 'done with' relationship between government and citizens; an echo of the past in terms of the capabilities and delivery methods, rather than a grasping of the current and future capabilities of interactive engagement. The question is what are those capabilities and what can government learn from understanding not only the hard facts, but also the softer cultural aspects of change that are moving across the population. What is good practice? What are the expectations? And how do they help governments face a tough period when delivery of more services through extra channels is not likely to find funding? But maybe this is the wrong lens through which to look at the situation.

2. Cutting Costs through Greater Engagement

When the driving topic of the moment is stated as 'cost' the knee-jerk reaction is to think of cuts. In a more enlightened moment this may be stated as the need to 'do more with less', invoking the promise of operational efficiency as the target to soften the prospect of cuts. Rarely, if at all, will the thought embrace the capability of the citizen to take a bigger share of the load because surely that would be an unacceptable imposition, right? Wrong! In the private sector customers have shown their readiness to take a bigger role; ranging from online self service, to co-creation of shared capabilities, even providing direct service support on their favourite items to other customers. So is this time to reiterate that the term digital citizens is about citizens taking an active role rather than being passive consumers of e-Government services? Could this shift yield greater satisfaction in the resulting services as well as a reduction in costs?

Is this possible? Could it work? Well it is already happening today and yes, it does work. The Geeks to Go!™ website[1] claims to have over three hundred thousand volunteers online ready to answer technical questions grouped around various topics. First termed 'crowd sourcing' by Jeff Howe in an article in *Wired* magazine in June 2006, this mass collaboration approach has already proved its worth in online communities in the private and third sectors as well as across NGOs and some forward-thinking governments. Crowd sourcing is an interesting way of solving technical issues. Just consider the direct cost to any enterprise of employing three hundred thousand technology experts, and that's before considering the indirect costs of managing and supporting this huge team. Then there are additional costly complications in the purchase and operation of their IT systems too, plus

1 www.Geekstogo.com

office space and … well the list of overheads is daunting.

Crowd sourcing, on the other hand, offers an attractive and cost effective alternative way of asking citizens to participate in their own society around their own skills, but can such an unsupervised and apparently chaotic approach actually work and deliver correct answers? As with most activities that embrace the web and digital citizens, it is a transparent environment that allows all participants to openly share their experiences to produce an optimum crowd source-based reply. Providing there are enough participants, the ability of crowd sourcing to arrive at correct answers is a proven method – see Wikipedia for details. But isn't Wikipedia an example of what can go wrong with this technique? Actually it's not, because Wikipedia is a content-driven system only allowing one interaction, or post, at a time and techniques such as those used by Geeks to Go! rely on everyone interacting openly. This open real-time interaction makes it difficult or even impossible for one person to hijack the system with a wrong reply that won't be noticed for some time. Could now be the time for bold pilots in the public sector?

3. Always Connected And Online

Use of volunteers to augment government services isn't new, although one of the big problems has been the availability of these volunteers. Unless retired, their working commitments have tended to limit their availability to evenings or weekends and this, in turn, restricts the areas where voluntary contributions can be made. However, there is a significant set of change forces in play today. The always connected and online society shows that people increasingly accept the need to get involved in more aspects of life now that the barriers of physical attendance have been removed. Even more, they 'want' this involvement; they are willing advocates for digital citizenship.

This is linked to a change in the concept of 'at work'; a shift in the traditional meaning of attendance in a physical place at a definable time and using equipment supplied by an employer. An increasing number of workers are now doing some element of their work as and when they choose, using their own equipment, connected from wherever they are. The numbers gaining this new found freedom increase quarter by quarter, as does the shift away from working full time for one employer. With clear evidence of a cultural move towards using the web as a means to 'get involved', we must ask once again whether now is the time for a bold step on the part of government departments to pilot such moves.

Technology and the internet can also extend the idea of using people's 'uncommitted' time to the uncommitted (or unused) time of their PCs. Let me explain. One of the most famous projects to prove this started some years ago when research scientists searching for extraterrestrial intelligence could not afford the computational resources necessary to perform huge amounts of analysis on the data required from radio telescopes to determine if there were repeatable patterns in the random noise. SETI@home (Search for ExtraTerrestrial Intelligence)[2] started in 1999 to create a so-called virtual supercomputer based on the internet using specially created software to link up thousands of PCs at home. (CIPD 2005) Over the ten years of the project the unused time and capacity of 5.2 million PCs has been used and in 2001 SETI entered the Guinness Book of Records for the largest single computational task ever.

SETI@home may be the best known example but it is far from the only project to make use of spare and unused capacity in the hands of every day people. By people I refer, in this case, to citizens with perhaps a vested interest in helping their government to run services. There has been a lot of

2 http://setiathome.berkeley.edu

publicity in recent years over multi-user content sharing platforms that illustrate the way libraries of content can be created, stored and managed by citizens. Sites like www.youtube.com, www.picasa.com, www.flickr.com, www.mycityway.com and www.rapidshare.com are familiar to most internet users. This is a true movement by people that has even given rise to a political party. The Pirate Party (Piratpartiet)[3] movement started in Sweden, but it has spawned parties in other countries around its key theme of being a political party for the digital age. Is this a sign that citizens are ready for change in their role and relationship with government?

4. The Mass Project

Others in the scientific community have taken a different route to encouraging people and their technology to get involved in their programmes. Data collection has always been difficult and expensive, especially on a large scale when it can be prohibitive. Citizen Science[4], or Crowd Sourcing Science, projects have been described as '…a new way of doing science. Mass collaboration makes things possible that were impossible before'. The Great Sunflower Project[5] started in 2008 found more than 50,000 volunteers who were prepared to plant sunflowers in their gardens in country, urban, or inner city areas and then, using this standardised environment, to observe and count bee activity in their area. Today the project has expanded to planting and monitoring a whole range of plants that are attractive to different insects. This kind of mass activity and observation would be almost impossible to perform without the ability to tap into an online community with a shared passion for the subject. As before, it's far from the only example and illustrates once again the willingness of people to behave in a socially cohesive manner around shared goals.

Computers may be good at analysing and processing but people are better at observation and communication, as the Great Sunflower project shows. Australia has been judged a leader in its e-Government and eCitizen initiatives[6] and has learnt that the fastest route to finding new ways to use the internet effectively is to use those very same tools to ask its citizens to show it what works best. The Australian Government took a leaf out of the digital citizens' book and organised a WebJam at which it offered prizes to individuals and teams to come up with new ideas on how it could use the web to offer its citizens better service and better value.

One winner was the famous, or infamous depending on your view on Australian colloquial language, 'itsbuggeredmate' pilot allowing citizens to report damaged and broken roads and street furniture. This shows how a down to earth and simple way to cut costs really can work. This pilot could readily be extended to include small local contractors, or even Do It Yourself citizens, who might bid in an open transparent market to repair the reported damage. Include online authorisation of the selected bid by the budget holding department, with a confirmation of successful completion audit, and a dramatic change in process and cost is possible. This and other winning examples all rethink how something can be made to work in the new world in a new way that is in tune with the entire environment. The big lesson is that it is not simply about using new technology to do the same process, but about achieving the same (or even better) outcome in a wholly different way.

3 www.piratpartiet.se

4 Citizen Science, or Crowd Sourcing Science, projects have been described as '…a new way of doing science. Mass collaboration makes things possible that were impossible before'. – These are the words of Kevin Schawinski, quoted in a wikinomics blog: http://www.wikinomics.com/blog/index.php/2009/02/09/crowdsourcing-versus-citizen-science/

5 www.greatsunflower.org

6 http://australia.gov.au

5. Towards New Kinds Of Interactivity

This same approach has led the Australian Government to create a single page that provides links to every service it provides to its citizens together with a single sign on to create their identity for every department and every service. It's a remarkable example of simplification in every dimension, particularly for citizens in navigating their government's services. But that's not all: as the topic of this article is cost cutting, consider the impact of consolidating the websites that have to be maintained as a starting point to calculating the cost benefits.

A good question might be 'does government really have to build all the services it offers on its website?' Apple has shown an alternative model with its Apple App Store: on one side it provides a simple set of standards to allow most developers to produce Apple Apps according to their own ideas and visions, and on the other side it is just a simple drag and drop model for users to collect and use whatever Apps they feel are of value to them. Commission payments are made to developers based on how many users download them and, of course, in this commercial environment the users also pay nominal sums for the Apps they consume. The Apple App Store is in fact a proprietary form of that popular new technology and business concept, 'The Cloud', so called because all technology complexity associated with its use, both by developers and users, is totally hidden and invisible (it's all hidden in 'a Cloud').

Is this a possible future scenario that could extend the success Australia has enjoyed with its WebJams into general use? Within this context it is clear that there are or can be other actors involved alongside government and citizens, for example private and civil organisations might (potentially) design and deliver services. Then there are the technology 'geeks' and other user groups and communities. All have the potential to play an important role in our emerging interactive world.

6. Conclusion

To quote a popular term from 2002, the internet truly has changed everything – or has it? In fact the internet as the sole catalyst for change is not quite true. The web, people, a rich variety of devices, and most of all a cultural and skill change in a large part of the population have resulted in seismic shifts in our social fabric. But the internet revolution has left some of us behind. When considering greater web-enablement in the delivery of government services, we must remember the duty of government to serve not just those with access to the internet, but those without it or without the capability to use it. This is a key difference between the public and private sectors. In the commercial world consumers choose to shop or bank online if they want to; they're not forced to – and they invariably have an alternative non-digital channel available to them. So this is another difficult balancing act for governments to get right. (Asthana & McVeigh 2010)

Governments around the developed world have an opportunity to encourage true digital citizenship: radically reinventing the nature of service provision so that the web is used not only as an enabler of large-scale top-down administrative eServices, but as a channel through which services can be requested, provisioned and delivered from the bottom up, to meet more everyday and local needs. In conjunction with devices such as GPS-enabled smart phones, the internet can enable citizens not only to self-serve in the most transactional types of service, but to manage and participate in a wide range of services in a way that improves the flexibility of government while reducing its cost burden. But how can governments make the most of this opportunity without leaving some citizens behind altogether? Can the two trends of cost and technology come together to change society, and for the better?

Perhaps the real question is: Who has the power to decide?

References

Asthana, A & McVeigh, T (2010) Government services to be online only", The Guardian, 20 November 2010: http://www.guardian.co.uk/society/2010/nov/20/government-services-online-only.

CIPD (2005) "Flexible working: impact and implementation an employer survey", Chartered Institute of Personnel and Development, Survey Report, February 2005: http://www.cipd.co.uk/subjects/hrpract/flexibleworkingpractices/flexworksurvey.htm.

Guardian Newspaper (2010), collection of current news items here: http://www.guardian.co.uk/technology/crowdsourcing.

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