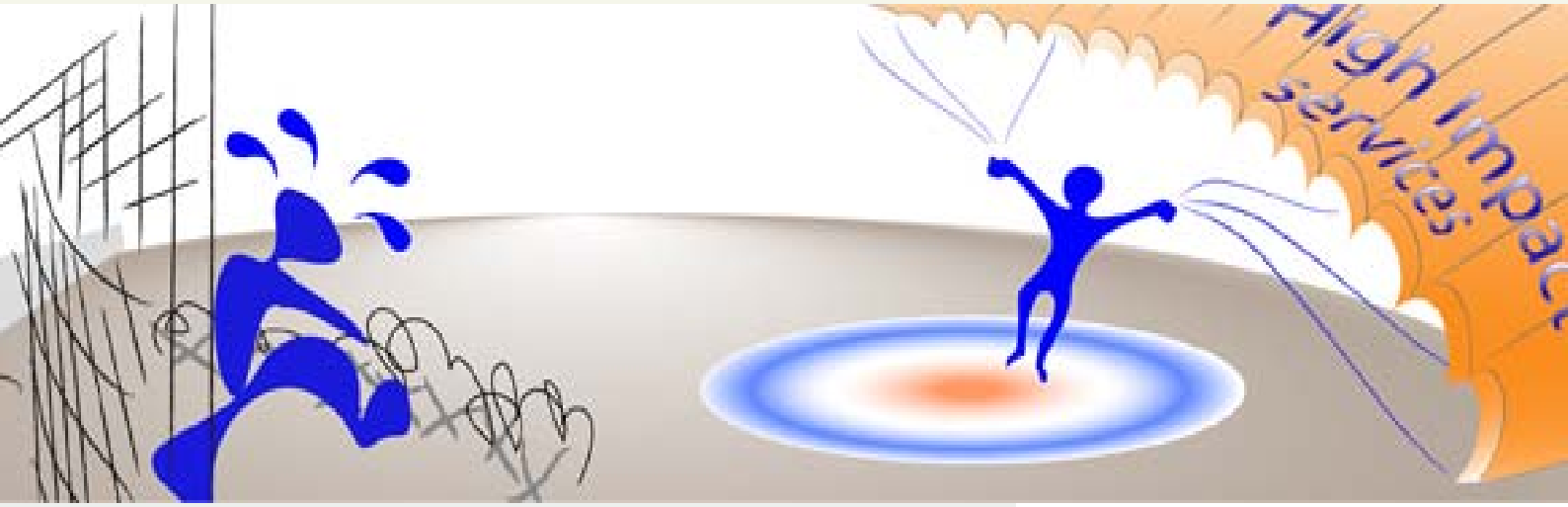
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High Impact services



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Editorial: High Impact services



Michael Blakemore

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The papers for this issue of the European Journal of ePractice were submitted at a time when there was some certainty left in the structures of governments and the services they delivered. They are being published at a time of unprecedented turmoil in business and governance. The global financial crisis of late 2008 has redefined the business/government landscape. Some banks have become bankrupt, and there is concern that even Iceland may as a country be insolvent. Many banks are now partly or fully in public ownership; many citizens who saved money to provide them with a pension on retirement may not now receive that allowance. It is not just individuals who have lost significant amounts of savings in collapsed banks; it is also some government institutions. The pressure on public finances in many countries will become extreme. It would be too simplistic to say that this is the time for eGovernment to deliver the efficiencies and societal benefits that have long been promised, but it certainly is the time to focus on delivering impact in the right areas.

The extent to which services are, or are not, 'high impact' is not something that can be defined purely through quantitative measures. It is relatively easy to apply cost-benefit approaches to transactional services and to calculate the levels of financial impact. It is more challenging to take a health service and to calculate the overall impact on society, because there are not only issues of the structure and effectiveness of the service, but there also are exogenous factors such as extent to which citizens knowingly damage their health through diet, smoking, or alcohol.

A search on the term 'High Impact government' shows a considerable diversity of approaches. The term has been connected to themes such as leadership, citizen centricity and customer satisfaction, commercial partnerships, reducing administrative burden and technological efficiency. It has been linked to specific priority areas that will have an impact on society and the economy. Consequently the decision as to whether these contributions relate explicitly to high-impact has been left largely to those who submitted papers and the panel of reviewers, whose task was to accept that they met the criteria for this issue.

Trond Arne Undheim and Jochen Friedrich focus on the behaviour changes that are still needed so that the IT infrastructures can be used to the maximum effect, advising that the eGovernment impacts in the Netherlands and Denmark have been enabled by clear policies to use open standards. They call for more openness in standards, warning also that "*some incumbents, notably national standards development organizations and a few monopoly vendors, resist change*".

Bram Klievink and Marijn Janssen show that high impact can be delivered through a sensitive re-assessment of the delivery chain. While much debate in government service delivery surrounds the often emotive areas of public funding, contracting services out to the private sector, or even privatisation, Bram and Marijn focus on the roles of the actors and the range of channels which are best suited to deliver services. Their conclusions that "*the disintermediation of low-performing channels, while re-intermediation in others, can contribute to both increased efficiency and better customer-oriented service delivery*" shows that the objective should be less one of ideology (public or private for example) and more one of the ways in which services can be delivered best by the right configuration of actors – a process which is called '*Channels in Balance*'.

Sirajul Islam addresses the problematical area of e-Participation, developing a framework which goes beyond many of the previous basic technological interventions that have tended to assume that participatory democracy will flow from communication across electronic channels. Active communication, coupled with trust, is more likely to empower participation, rather than to simply reflect existing communication discourses.

Mauro Cislaghi, Domenico Pellegrini and Elisa Negroni focus on the societal impacts of more effective judicial cooperation across EU member states. By promoting mobility and blurring borders with Schengen, the EU has created a large space of economic and social mobility. There are, however, significant threats from mobile criminality (organised crime and terrorism for example), and the effective development of processes such as "*mutual recognition of digital signature and the adoption of a EU-wide recognised standard format for legal document exchange*" are important in maintaining and enhancing European mobility, while at the same time protecting citizens through a more effective security system. Failure to achieve this puts at risk the political agenda, moving back towards more aggressive border control that diminishes the opportunities and the value of the common European market.

The Momentum of Open Standards - a Pragmatic Approach to Software Interoperability

Software is increasingly embedded in society. Fewer and fewer solutions are stand-alone, hence interoperability amongst software from different vendors is crucial to governments, industry and the third sector. However, our research shows that achieving wide implementation does not only depend on the openness of the process, but also on the willingness to negotiate and achieve a compromise. We document the momentum of open standards in all sectors of society as illustrated by government policies, procurement and business practices and impacts on efficiency and effectiveness of public service delivery and business operations. Open standards achieve increasing momentum because standard setting actors – companies, governments, and consumers – are shifting from a dogmatic to a pragmatic perspective – from adherence to strict principles, to commitment to a path towards openness.

While software preference mandates can have effect in specific instances such as document formats, openness generally cannot be declared and introduced by decree. Open standards are the best way to software interoperability, especially when available royalty free.

The European public sector has a leadership position and, consequently, public authorities started implementing the specific elements on openness and interoperability into the respective policies. This is good and important, it should be taken up by more public authorities in Europe and in a combined and coordinated way. After all, requiring openness and interoperability means nothing less but walk the talk.



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Keywords

open standards, interoperability, high impact services, innovation, momentum

> “The move towards openness has only happened because enough key actors agreed this should happen, and the European public sector has led the way.”

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1 Introduction

Standards have numerous benefits, including enabling innovation, preparing the ground for better products, spreading new technology, expanding market access, boosting transparency, avoiding lock-in, creating market stability, and ensuring efficiency and economic growth (Blind, 2004:51; Flosspols, 2004; Weitzel, 2004). The standards process balances change and continuity in the marketplace (Cargill, 1989:234). In fact, the success of the Internet itself builds on standards. According to Vint Cerf (2008), widely esteemed as the father of the Internet: *"The Internet is fundamentally based on the existence of open, non-proprietary standards".*

As an open platform leveraging open standards, the Internet provides a reliable and trusted base for building applications and services on top and offering them worldwide. The digital footprint now is so deep that it seems like it cannot be washed away by a sudden wave. But can it?

Standards have enabled new applications that combine multiple sources of data. Standards have created new opportunities for innovation – among as diverse actors as governments, enterprises, SMEs and citizens. Moreover, standards ensure longevity of records. Arguably, standards for transporting, representing, processing, presenting or archiving information have changed the way we live, work and play. First and foremost, however, standards guarantee interoperability (Egyedi & Heijnen, 2005). As the European Interoperability Framework EIF 1.0[1] states:

> *"Interoperability means the ability of information and communication technology (ICT) systems and of the business processes they support to exchange data and to enable the sharing of information and knowledge."*

Interoperability is best guaranteed and facilitated by open standards. Open standards are developed in a transparent and collaborative process, are available for free or at a nominal cost and can be implemented royalty free – in particular regarding software interoperability standards – or at reasonable cost. Furthermore, open standards have demonstrable impact on the software ecosystem. A recent empirical study of best practice in eGovernment mentions the use of open standards among its top seven recommendations for success (Undheim, 2008:22).

The full range of benefits specific to open standards includes, above all, network effects, protecting buyers and consumers, and enhancing fair competition (Shapiro, 2001:88). Network effects mean that the more users adopt a standard, the more efficient it becomes (West, 2007). Examples of network effects abound in the hardware area. We can think of telephones, fax machines or cell phones.

However, open standards could potentially have negative effects as well, and has in a few cases constrained variety and innovation (Shapiro, 2001:88). Yet, in practice this discussion seems to be rather hypothetical, and the benefits of open standards regarding choice, flexibility and innovation by far exceed such potential negative effects. Commissioner Kroes of the EU competition authority recently pointed out that opting for open standards "is a very smart business decision indeed" (Kroes, 2008):

> *"[...] where equivalent open standards exist, we could also consider requiring the dominant company to support those too" [...] "the Commission has committed that: for all future IT developments and procurement procedures, the Commission shall promote the use of products that support open, well-documented standards. Interoperability is a critical issue for the Commission, and usage of well-established open standards is a key factor to achieve and endorse it. [...] I know a smart business decision when I see one - choosing open standards is a very smart business decision indeed."*

Many EU Member States have frameworks that recognize this challenge and some even have preference mandates for open standards, which contribute to fair procurement, economic growth, and reduced vendor lock-in. As examples we note the Dutch and the Danish policies (see section 3).

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[1] See the European Interoperability Framework, ISBN 92-894-8389-X: http://ec.europa.eu/idabc/servlets/Doc?id=19529

Hence, the task of this article is to describe the importance of open standards for software interoperability, and analyzing the evidence. Actually, it has been said that: *"Policymakers need empirical validation that open standards are indeed beneficial. Without such evidence, it would be ill-advised to blindly put into place preferential policies that favor open standards."* (Shah & Kesan, 2008). We will describe the state-of-the-art on policies, practices and impacts. Our evidence base is derived from economic analysis, case studies, public policy, theory and industrial practice.

2 The consensus around open standards

Since the introduction of the term "open standard", there has been debate around it (West, 2007). Some readily adopt the idea of open standards, some claim that following open standards is what they have always done, some outright dislike it, or fear it will make them change.

Even though this debate continues – and sometimes even in a heated manner – the number of actors adopting open standards increases where the debate is focused on software standards. According to Egyedi & Heijnen (2005:97), software standards differ from hardware standards in so far that software standards are more likely to be developed ex ante or in parallel with technology development.

"Open standard" primarily denotes a concept. It goes beyond the traditional definitions of standards in so far as it looks at openness from two angles: (1) the standards development process and (2) the availability of the standard for implementation and use.

Little controversy exists over the standards development aspect. The WTO criteria for good standards development including openness, transparency, consensus, etc. have been part of the European standardisation framework laid down in Directive 98/34.[2] In fact, the traditional standards organizations both internationally (ISO, IEC, ITU), European (CEN, CENELEC, ETSI), and nationally (e.g. ANSI, BSI, AFNOR, DIN), roughly confirm to an open standards development process.[3]

The same is true for the major global fora and consortia developing standards, i.e. organisations like W3C, OASIS, or OAG. Egyedi (2003) correctly asserts that the openness of global consortia is often underestimated while the openness of formal standards setting organizations is overestimated. In fact, some of the global consortia even challenge the formally recognised standards organisations in terms of openness and transparency of the process. One could say organizations that still rely on a business model of selling standards and specifications are formally open, yet not "Internet" open. On the other hand, standards without public access to its development are impure public goods (Bunduchi, Williams & Graham, 2004).

Regarding the availability of the standard for implementation and use, this is where intellectual property rights, or – in other words – the business part of the concept of open standards, come into play. This is where the controversy around the concept of open standards is rooted. The strongest debate is held over the criterion that an open standard ought to be available on royalty-free terms. While some welcome this criterion – in particular for software interoperability standards – others oppose it because they feel that it negates the principle of remuneration for patented technology and poses a threat to innovation. As a consequence, a multitude of definitions has been produced – mainly conflicting in the point on licensing terms of Intellectual Property Rights (IPRs) in standards.[4]

The controversy on definition (Krechmer, 2006; West, 2007) must now be overcome. It is rather obvious that there is no single, clear-cut definition for open standards but that there is a range with degrees of openness

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[2] Introductory clause 24 of Directive 98/34 outlines: "Whereas the European standardisation system must be organised by and for the parties concerned, on the basis of coherence, transparency, openness, consensus, independence of special interests, efficiency and decision-making based on national representation". (Official Journal of the European Commission, 21.7.98, L 204/39.)

[3] Reforming traditional standards organisations is another topic. We can only indicate that the current business model of selling standards is challenging in terms of full transparency, access and participation, especially in the age of the Internet where such openness is expected. However, few clear alternatives exist. We expect this debate to evolve.

[4] While we will not go into any depth on the IPR-discussion on standards, the respective entry in Wikipedia provides a good overview of different definitions. See http://en.wikipedia.org/wiki/Open_standard .

between open and closed (Sutor, 2006). Yet, there are some basic criteria like openness, transparency, balance etc. which are non-negotiable. Bearing this in mind, rather than continuing the endless quarrel around semantics and definitions, it seems to be more fruitful to focus on actual requirements for a given context. Open standards are essential and healthy for the software ecosystem. Thus, the key questions in relation to openness and open standards are:[5]

1. What are the requirements on open standards in specific domains or for certain purposes?
2. How can all of us contribute to getting along the path towards openness?

2.1 Open Standards and Interoperability

The major benefit of open standards is interoperability. Open standards facilitate and ensure interoperability. Interoperability is essential for future ICT ecosystems in a networked global environment with an increasing need for machine-to-machine connectivity: my software needs to talk to your software; my process needs to interact with your process.

2.2 Examples of Open Standards

Open standards are typically developed in global standards developing organisations which practice due process and rough consensus. Global reach is key to wide implementation. In fact, standards should be developed in a transparent process open to all interested parties worldwide.

Open standards are published, widely implementable specifications that are free or available at low cost so that all who want can build on them. They are platform independent and vendor neutral. Calling a standard "open" makes a clear distinction against so-called "closed", "de facto" or "proprietary" standards which may favour a single vendor or a small group of vendors only. Open standards must be subject to full public assessment and use without constraints in a manner equally available to all parties.

Regarding the software sector, it is worth noting that the most relevant standards organisations established and active in software standardisation have moved towards implementing IPR policies with a royalty-free licensing regime.[6] This includes, for instance, the leading Internet standards organisation W3C and from the application and business standards side OASIS and OAGi. Clearly, the market requirements in software for openness and widespread implementation of software interoperability standards have triggered and driven that decision. The success and high relevance of the respective standards in the market-place prove that royalty free works:

> *"Moreover and crucially, the most important Internet standards are not just open, they are also non-proprietary. Neither prior permission nor royalties are required to implement them. This means that all hardware, software and service vendors can really create products which interoperate perfectly with others across the Internet."* (ECIS 2007, p. 4).

Hence, the number of specifications meeting the criteria for an open standard is large. Open standards abound. Typical examples of open standards include (and here the abbreviations start) CSS, TCP/IP, HTTP, HTML, DNS, SMTP, POP3, PDF, IMAP, IPSec, SSH, SSL, C, C++, and ODF. In the following sections, two of these open standards will be looked at in some more details, because they give an indication for a broader paradigm shift in the ICT industry.

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[5] Until recently, there were few studies of the impact of standardization, let alone open standards. Now, several studies exist (see Shah & Kesan, 2008; for instance) and the question about the benefit and impact of open standards can be raised.

[6] Other domains like the telecommunications sector do not (yet) take such a far-reaching stance on openness, but there is also a clear trend to increasingly include the option of royalty-free IPR licensing alongside the criteria for openness of the standards development process. This can, for instance, be seen in the resolution of the Global Standards Cooperation (GSC) which – even though a bit half-heartily – states that RF licensing is considered, as it were, as a valid sub-category of (F)RAND ((Free) Reasonable And Non-Discriminatory). See: GSC 2007.

2.2.1 PDF – the path towards an open standard[7]

Portable Document Format (PDF) is a file format created by Adobe Systems in 1993 for document exchange. PDF is used for representing two-dimensional documents in a manner independent of the application software, hardware, and operating system. While fully under the control of Adobe, PDF eventually became the de facto standard for printable documents on the web. Adobe started releasing the specification, but controlled the future development of the format.

With time, the web became the way information is found, hence also needed to be archived. Backwards compatibility is highly important to the public sector as well as to legal systems, libraries, newspapers, regulated industries, and others who must be able to trust that documents can be retrieved and rendered with a consistent and predictable result in the future. Adobe submitted a version of their format for standardisation and PDF/A became an ISO standard in 2005 (ISO 19005-1:2005). As a next step (Information Week, 2008) the core PDF format was also submitted to ISO. As quoted by Information Week Adobe chief technology officer Kevin Lynch pointed out:

> *"As governments and organizations increasingly request open standards, maintenance of the PDF specification by an external and participatory organization will help continue to drive innovation and expand the rich PDF ecosystem"*

PDF is now an open standard (ISO 32000-1:2008). Anyone may implement the standard and create applications that read and write PDF files. Adobe holds patents to PDF, but licenses them for royalty-free use in developing software complying with its PDF specification.

The impact of the above is huge. Most governments across the globe are actively using PDF documents in their workflow and for archiving. Now that PDF is a fully open standard, multiple vendors can support the format, and governments avoid lock-in.

2.2.2 ODF – an example for a bigger change

The Open Document Format (ODF) is suitable for office documents, including text documents, spreadsheets, charts and graphical documents like drawings or presentations, but is not restricted to these kinds of documents. The Organization for the Advancement of Structured Information Standards (OASIS) developed this new open standard based upon the XML-based file format originally created by OpenOffice.org. OASIS submitted ODF to the Joint Technical Committee (JTC-1) of the International Organisation for Standardisation (ISO) and the International Electrotechnical Commission (IEC). In May 2006, it was approved unanimously as an ISO and IEC standard (ISO/IEC 26300:2006).[8]

In the meantime, ODF has been successfully implemented by a number of vendors and application developers. Implementations include OpenOffice; Star Office; Google Docs & Spreadsheets; K-Office; Scribus; Abiword; ajaxWrite; Zoho Writer; Ichitaro; IBM Lotus/Domino; IBM Workplace; Mobile Office; Gnumeric; Neo Office; Hancom Office. In other words: all of these applications use the same standard, ODF; all of them produce files with the extension .odt for text documents, .ods for spreadsheets and .odp for presentations; and these files can be opened, read and edited by either application implementing the ODF standard. This is interoperability at its best.

Consequently, customers freely choose the applications based on look and feel, functionality, cost, or other criteria, without worrying about purchasing a specific, single-vendor software in order to work with their documents. ODF is gaining momentum in the public sector in Europe, Africa, Asia, South America and in a number of US states. In time, the format might enable a shift away from the current monopoly on the computer desktop. Government is an important customer and adopts open standards policies and practices for the same reasons as industry does: flexibility, choice and efficiency. ODF provides that choice and the

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[7] The presentation draws heavily on http://wapedia.mobi/en/PDF, http://www.odfalliance.org/, http://en.wikipedia.org/wiki/OpenDocument and http://en.wikipedia.org/wiki/Portable_Document_Format. For more on why Adobe made PDF an open standards, see http://www.informationweek.com/news/software/enterpriseapps/showArticle.jhtml?articleID=208802656

[8] See http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=43485

public sector is better placed to benefit because of it.

3 Is there momentum for open standards?

To what extent do the relevant stakeholders in e-government endorse and practice open standards? Let's look at innovators, customers, open source, international developments, and the blogosphere to examine examples of institutions that have implemented and benefited from the use of open standards.

3.1 Open standards as a strategy for innovators

Technology and application vendors as well as innovators in general see the benefits of open standards and increasingly revise their strategies around business models leveraging the new ideas and opportunities of openness.

Making a standard and contributing technology to a standards project is an important business decision. Sharing pieces of technology and turning them into a standard facilitates (global) market access and opens opportunities for new businesses, both large and small, not only in the software development area but, for instance, to a large extend in the services sector, as well. Again, the world wide web is a perfect example for how open standards have facilitated new businesses and new service offerings. Think about all the web shops; think about all the new tools and platforms for collaboration and social networking; think about all the local small and medium enterprises working in the area of web design, web hosting, etc.[9]

So, deciding to go for open standards is, above all, a decision in favour of interoperability. And choosing open standards is, therefore, at the same time a sign of confidence in one's own technology and product offering. Because those who implement open standards are sure to be fully exposed to the world of competition – competition from those who implement the same standard and offer their products as an entirely interoperable alternative.

In short, the innovation potential of open standards is significant – but different. In an open world, vendors will not be able to rely on platform monopoly. They cannot count on their customers being locked-in. Thus, openness and open standards foster innovation and growth.

3.2 Customer/consumer needs and requirements

Customers increasingly demand solutions based on open standards. They need flexible IT infrastructures that enable informed choice. As EICTA (2006) has outlined:

> *"standardisation and the development of open standards play a major role in enabling interoperability, and interoperability, in turn, enhances choice for users who are presented with many more options for different products and services that they know will exchange data with others by virtue of the interoperability standard."*

Integrating different technologies is key for customers. But this also means that the effort for integrating new parts of technology, new functionality and services must be calculable. To meet such needs, Service Oriented Architectures (SOAs) have become the prime computing paradigm for contemporary ICT infrastructures, and cloud computing provides the model for a distributed, globally integrated and networked ICT ecosystem:

> *"In short, we need truly open standards and not vendor controlled or dictated specifications in order for SOA to reach its full potential as a solution for customers."* (Sutor 2006)

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[9] Industry has engaged into the debate around open standards via their associations, as well, and a number of industry associations have issued position papers and white papers on the topic. With some exceptions where there are specific interests of the respective association's membership there is broad support for open standards. Their importance for software interoperability is clearly seen and stated. With special focus on e-government, EICTA (2004), for instance, outlined that: "As providers of government services: Governments should deploy online services that utilize open interface standards. Special efforts should be taken to avoid imposing a single technology platform or a single vendor's technology on citizens or businesses, which access e-government applications and instead support an open standard that enables a multi-vendor environment."

From the consumer viewpoint, open standards are of tremendous benefit, as well (TACD. 2008a). Software interoperability provides advantages such as: access to better software products, increased choice through competition, lower costs for switching and transferring data to different programs, the ability to control and safeguard data (documents, pictures, videos) over a long period of time, reduced potential for unfair contract terms, and reduced lock-in to one system. TACD[10] (2008b) concludes that innovation, autonomy and diversity in the market is in the wider public interest.

3.3 The increasing importance of open source

Open source software offerings are gaining importance in the market place. FLOSSIMPACT study (2007), commissioned by the European Commission, documents such applications have high market share in several European software markets.[11] The impact of open source on European competitiveness will be significant – and open source thrives on open standards.

Although open standards and open source are different, they are, in a way, natural partners. Open standards enable the open source communities to develop technologies that are compatible with the leading global standards. Yet, for implementing such standards it is important that communities can freely do so without any restrictions regarding royalties and licensing. Moreover, most open standards have at least one open source implementation (Wheeler, 2006).

The food chain is as follows: open source software may be an efficient alternative to proprietary software; in any case customers increasingly utilize open source offerings. These need to inter-operate within their existing IT infrastructures; such interoperability is guaranteed where open standards are used. So, open source directly benefits from open standards (OSI, 2006).

3.4 Growing international attention

Most international initiatives are broadly supportive of open standards. The World Summit on the Information Society (WSIS, 2008) concluded:

> *"developing and implementing e-government applications based on open standards in order to enhance the growth and interoperability of e-government systems, at all levels, thereby furthering access to government information and services, and contributing to building ICT networks and developing services that are available anywhere and anytime, to anyone and on any device."*

Likewise, the United Nations Development Programme Government Interoperability Framework (GIF) project[12] puts it this way (UNDP, 2007):

> *"A successful GIF/EA promotes open standards that are forward-looking and supportive of the wider encompassing (national) e-government strategy."*

3.5 Activity in the blogosphere

Over the last couple of years, open standards have also gained some public attention and awareness. Collaboration and social networking tools have had their share in this rising of a public around openness issues including the topic of open standards. Consequently, there are a number of blogs where people share their opinions and engage public debate. Some examples include: Andy Updegrove, Roberto Galoppini, Rob Weir, Danny Weitzner, Bob Sutor, and Charles Schulz.[13]

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[10] The Trans Atlantic Consumer Dialogue (TACD) is a forum of more than 60 US and EU consumer organizations which develops and agrees upon joint consumer policy recommendations to the US government and European Union.

[11] http://www.flossimpact.eu/

[12] See UNDP http://www.apdip.net/projects/gif

[13] See the blogs of Andy Updegrove (http://consortiuminfo.org/standardsblog/), Roberto Galoppini (http://robertogaloppini.net/), Rob Weir (http://www.robweir.com/blog/), Danny Weitzner

Last year, over 9,000 Europeans signed a petition to "open up" the European Parliament (Open Parliament, 2007), claiming the current situation is that the European Parliament's ICT runs on proprietary operating systems and on software that is not interoperable with that of other vendors.

Other initiatives include The Digital Standards Organization (Digistan)[14], founded by open standards professionals in 2007 with the goal of promoting customer choice, vendor competition, and overall growth in the global digital economy through the understanding, development, and adoption of free and open digital standards. Digistan's 'Hague Declaration' which links open standards to human rights have several thousand signatories.

Admittedly, a good many of these blogs are admittedly being run by people who are professionally involved in standardisation. However, the comments and discussion threads to these blogs are evidence of public awareness beyond professional interest. They show that an informed public is engaging.

3.6 Momentum across society

It is a clear business trend that open standards are wanted by customers, consumers, international organizations (UN, UNDP, EU), industry, SMEs and users. Choosing open standards is highly strategic. Their benefits and positive impact are debated and seen at the highest decision making levels. Interoperability is a major requirement for the ICT sector as societies, governments and industry increasingly move towards global integration. Technological momentum is the process whereby a project starts to speed up because it matures and enough elements are in place for it to roll on its own (Hughes, 2004). Summing up, open standards have gained critical momentum.

4 Open standards in the European context

The European Commission has for some time emphasized the important role of open standards to enable software interoperability. For instance, the i2010 strategy (2005)[15] states:

> *"Digital convergence requires devices, platforms and services to interoperate. The Commission intends to use all its instruments to foster technologies that communicate, through research, promotion of open standards, support for stakeholder dialogue and, where needed, mandatory instruments".*

The i2010 Mid-term review[16] (2008) confirmed that standards commitment:

> *"The EU should improve the framework conditions for innovation, in particular in the information society, by accelerating the setting of interoperable standards"*

However, there are few specific policy activities in place to follow it up, except in cross-border situations. The IDABC decision (2004)[17] states:

> *"It is essential to maximise the use of standards or publicly available specifications or open specifications for information exchange and service integration to ensure seamless interoperability and thereby increasing the benefits of pan-European eGovernment services and the underlying trans-European telematic networks."*

In 2004, The Pan-European eGovernment Programme (IDABC) in DG DIGIT issued their European Interoperability Framework (EIF 1.0) with a strict minimum definition of open standards and mandated their use in pan-European eGovernment services (IDABC, 2004):

(http://people.w3.org/~djweitzner/blog/), Bob Sutor (http://www.sutor.com/newsite/blog-open/index.php), and Charles Schulz (http://www.standardsandfreedom.net/).

[14] See http://www.digistan.org/

[15] See http://ec.europa.eu/i2010 COM(2005) 229 final, p. 6.

[16] See http://ec.europa.eu/i2010 COM(2008) 199 final, p. 7.

[17] The IDABC decision (2004/387/EC), see http://ec.europa.eu/idabc/en/document/3430/3.

"1) Adopted and maintained via an open process in which all interested parties can participate

2) Published and available freely or at a nominal charge

3) For which the intellectual property – i.e. patents covering (parts of) the standard – is made irrevocably available on a royalty free basis

4) There are no constraints on the re-use of the standard"

An update (EIF 2.0) was sent out for public consultation in mid-2008. EIF 2.0 draft focuses on software standards and specifications, which should take care of the critique from hardware vendors. It is sensitive to life-cycle issues, so that if one decides no potential benefit results from using open source solutions, one might limit the scope to criteria (1) and (2). That is a sensible strategy, given what we here document on the momentum of open standards. On the other hand, criterion (3) is crucial to software interoperability – and striving towards compliance is important.

The IDABC programme has also launched a Common Assessment Method for Standards and Specification (CAMSS), which aims to assist Member States in their development of eGovernment services, particularly Interoperability Frameworks and Architectures. CAMSS builds on four principles – suitability, potential, openness and market conditions. For each criterion, a set of key questions should be asked and governments must themselves determine which are the most important ones, since all standards will be used in a particular context.

The CAMSS (2008) draft is a step in the right direction because it takes a pragmatic approach without selling out to large software vendors and giving in to hardware vendors. It introduces flexibility, urging Member States to set their own targets. The recommendations emerge from a content analysis of existing frameworks. However, the CAMSS concept is quite loose, and still a bit overwhelming to be of practical use and achieve high impact.

However, while the Pan-European eGovernment Programme (IDABC) in DG DIGIT actively recommends open standards to Member States (IDABC, 2008), eCommission, which is the Commission's internal IT programme, is scarcely aware of the importance of open standards. That needs to change, if the Commission as a whole want to lead by example.

The European standards policy is slowly being reformed. The coming White Paper on the topic in early 2009 will hopefully pave the way for policy and regulatory action. If we are to believe Commission discussion (DG ENTR, 2008) it is planning to introduce a set of criteria for which global standards will be eligible in the European standardisation framework. This set of criteria takes the discussion around open standards into account. Regarding the process of standards development it requires full openness and transparency; regarding the conditions for implementing and using a standard it allows for (F)RAND IPR licensing terms as well as Royalty-free licensing terms.

Finally, it is recognized that the interoperability of national public ICT infrastructures is a precondition for a more service-oriented and competitive public sector, especially with regard to pan-European exchange. At the national level, around twenty European governments have interoperability Frameworks or action plans that favor open standards (EU, 2007:56).

Denmark and the Netherlands were early adopters. The Dutch and Danish governments have both decided all central government institutions should use open standards from April 2008 onward, unless they have a very good explanation (Denmark, 2007).

Other European actors, such as The Council of Ministers, the Council of Europe's highest decision-making bodies have said that its 47 Member States should promote: "technical interoperability, open standards and cultural diversity in ICT policy covering telecommunications, broadcasting and the Internet" (Council of Europe, 2007).

Finally, CERN, the European particle physics lab from which the Internet originated, are fully behind the open

standards message and their systems rely on standards to operate.[18]

4.1 Discussion of the European approach

Having analyzed the situation across Europe, here are some observations we would like to make:

Standards are currently high on government agendas and are rising on industry agendas as well.

Interoperability Frameworks in most EU Member States are well underway. Hence, in principle the environment is set to change quite rapidly, capitalizing on the momentum of open standards.

The EU is currently considering standards reform and the White Paper on the topic due out in early 2009 will hopefully pave the way for policy and regulatory action. Although some guidance is already given in the US and in Europe, further clarifying rules for ex ante disclosure will mean that anti-trust fears stemming from competition policy authorities should not hamper standardization as we look ahead. Achieving global support for the open and path-breaking ODF standard (and not OOXML) would also set in motion a step-change for the existing lock-in of the software market. If the IDABC Programme goes ahead with an official EIF 2.0 Communication which recommends open standards across EU, this will strongly enhance cross-border interoperability. If CAMSS succeeds in recommending sound and pragmatic criteria for assessing standards and specifications at the national level, awareness will be raised also at national and regional levels.

The reality is, if you stick to a strict definition of open standards, some standards do not make it.

Governments are proactive and prescriptive precisely because they want to influence market dynamics. The Dutch know that not all standards are open in the sense of their definition, but they want open standards compliance to become more prevalent. Moreover, all software mandate policies currently in operation have exceptions. We can reference the Danish one, which says that standards "should not involve increased costs to the public sector", so agencies can avoid using open standards by applying for an exception (Denmark, 2007). The Dutch policy includes a similar exception, based on the comply-or-explain and commit principle (ePractice, 2008).[19] Only in specific instances, such as to curb the monopoly in document formats, can such software mandates be justified. However, the redeeming benefit is that it demonstrates the path to take.

As we have seen, Europe's leadership in open standards policy does not readily translate into compliance. The European Parliament, Commission and most of the 27 Member States do not always walk the talk on open standards – in procurement practices – even though the concept makes its way into regulations, directives, and policies. However, monopolies are falling.

Open standards built on the principles of openness, transparency and consensus lay the grounds for innovation and growth, for flexibility and choice, for global market success and fair competition. In other words, open standards is where society, government and industry align and where everyone is sure to benefit.

5 Emergent Open Standards

Having established the importance as well as the momentum around open standards, what embryonic standards could potentially re-shape our ecosystems of tomorrow?

Emerging new business models and ICT concepts and strategies like Software as a Service (SaaS) will further accelerate the need for open standards. At the same time these will provide new business opportunities leveraging the benefits of open standards for growth and increasing competitiveness. Such trends, will, again be fostered by the further expansion of the Internet and the networked global economy:

> *"This ability of different software applications to access and exchange data via the Internet, to read and write the same file formats and to use the same protocols and open standards is the vital condition for the continued development and dynamism of our increasingly networked world."* (ECIS

[18] This was confirmed by CERN's IT director in a public speech at the WMO in Geneva on 18 September 2008.

[19] For the exact procedure, see http://www.epractice.eu/document/4287 (in Dutch).

2007, p. 4.

Two issues deserve attention: semantic standards and government driven standards (sector specific, cross-border, multilingual ontologies). Berners Lee's vision is a semantic web that goes across sectors, applications, and layers (W3C, 2001). Service oriented architectures are crucial to future openness of the Internet ecosystem and all stakeholders involved in it. Open standards being developed in this space include: RDB (persistence), XML (documents), UML (code), OWL (ontologies), and RDF (graph metadata).

However, much semantic work is surprisingly mundane, and is really about getting government involved in creating shared taxonomies for its own procedures and processes so they can be understood by other departments, sectors, or languages. While there is immense value in gathering, sharing, discussing ontologies for various domains, we must strive to consolidate, simplify and agree on what we want machines to understand. Only then can industry build more powerful software to solve your challenges.

6 Conclusion

Those who control a standard have market power. They set the digital rules of communication. To ensure competition in the software market, standards must be open and independent of suppliers. Open standards, such as ODF or PDF, have significant network effects. Governments will be the first to benefit, and Denmark and the Netherlands are already doing so.

The move towards openness has only happened because enough key actors agreed this should happen, and the European public sector has led the way. Now those actors are creating momentum. However, some incumbents, notably national standards development organizations and a few monopoly vendors, resist change. So, even though supporting open standards now means being part of the mainstream, the full network effects will not be felt before the last few actors get on board and before policy becomes compliance. Our analysis shows that most stakeholders now are negotiating their positions; from being dogmatic to pragmatic about openness.

In conclusion, open standards are the best way to software interoperability, especially when available royalty free. The European public sector has a leadership position but must now show policy compliance. Openness is both wise and trendy – but all good things have their challenges. For open standards to work, we must all walk the talk.

There is indeed increasing momentum around open standards. May that situation prevail.

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Improving Government service delivery with private sector intermediaries

Government organizations operate a variety of channels to interact with citizens and businesses. Advances in information and communication technology have enabled an online presence and more direct interactions. A focus on efficiency makes organizations encourage the use of electronic channels over traditional channels. Also, intermediaries in the service delivery chain are cut out in favour of direct interactions. This strategy of disintermediation finds its rationale in the transaction costs theory.

In this paper we investigate dis- and re-intermediation strategies in the multi-channel management (MCM) structures of government organizations and find that disintermediation is not always the best option. Intermediaries – public or private – can be employed to improve customer-oriented service delivery. A primary focus on direct interaction neglects the potential added value of intermediaries. Both disintermediation and re-intermediation should be part of a conscious MCM service strategy.

We present a case in which both dis- and re-intermediation are part of the MCM service strategy. A major Dutch organization took a radical approach to increase efficiency and improve the quality of its services. The organization redesigned the business network and reconfigured its service channels. Our analysis concludes that the disintermediation of low-performing channels, while re-intermediation in others, can contribute to both an increased efficiency and a better customer-oriented service delivery.



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Keywords

e-government, service provisioning, intermediation, public-private cooperation, multi-channel strategy

> The discussion on disintermediation and re-intermediation in multi channel service delivery becomes important as both directions seem to have their merits.

1 Introduction

Governments are seeking ways to improve their service provisioning by means of Information and Communication Technology (ICT). Many governments started to offer services online, first only informational and later also transactional (Layne & Lee, 2001). This online presence coexists with traditional channels, like telephone, mail and front-desks. To offer all services in all channels, governments need to consider the different characteristics of the various options and deploy a Multi-Channel Management (MCM) to operate service delivery. Government organizations can pursue a variety of strategies in this area, which may vary from promoting the use of the most efficient channel to ensuring equal and fair access to all of them (e.g. the creation of channels for disabled or socially excluded groups).

To assess the use and possibilities of MCM in government service delivery, it is important to know the users' (i.e. citizens and businesses) perspective on multi-channel service delivery as well as in the organizational and technical perspectives. This paper deals with strategies of government organizations and the consequent coordination choices that are required to implement those strategies. While most research focuses on the current and future use of traditional (i.e. telephone, mail and desks) and electronic channels (e.g. websites), we have looked into innovative channel strategies that can be pursued in a network of organizations. The use of innovative channels structures can improve service delivery and enable access for citizens in formerly out-of-reach segments. Possible strategies include more direct interactions with clients, but also the use of other organizations in the channel structure. The latter strategy is called *intermediation*, in which intermediary organizations (e.g. the front desks of municipalities) become a channel of sorts that is used by other government agencies to provide their services.

An online presence with transaction features makes it easier to connect to clients directly without costly interactions through front desks or other expensive channels. As part of this argument to reduce costs, the intermediaries that are part of the channel structure might be cut out as part of a strategy of *disintermediation* and the Internet becomes the preferred channel, with information and transactions offered through a website. The argument for disintermediation is often found in the lowering of the transaction costs (Malone, Yates, & Benjamin, 1987), which appear due to friction in the interaction among parties. ICT lowers the transaction costs by enabling direct interactions. With many (government) organizations having a focus on efficiency the Internet is often seen as the preferred channel, since it promotes connecting with clients directly (i.e. without intermediaries), thus the disintermediation of service channels.

This paper maintains that the use of intermediaries (i.e. the re-intermediation of the channel structure) needs to be considered as part of a conscious multi channel strategy, as intermediaries can help governments to improve service delivery. To improve service delivery and enhance service-orientation, related services could be offered in an integrated package. For services of a single organization, this might seem relatively easy. However, many complex government services involve multiple departments or organizations. Creating integrated service delivery that cross multiple (public) organizations' boundaries is more complicated and may require the reengineering of business processes and the introduction of new roles and responsibilities for orchestrating these interactions (e.g. Janssen, Gortmaker, & Wagenaar, 2006).

When we shift to a client's perspective, the required service may also transcend the public sector altogether and include private organizations. For example, when buying a car, the primary organization a citizen deals with is the car dealer. If such an organization can also handle the necessary paperwork with the government (i.e. register a change in car ownership), it functions as a private sector intermediary in a public organization's channel structure. For the government agency, the use of such a private sector intermediary can be part of an innovative strategy aimed at increasing service-orientation by using actors in the existing channel structure, instead of focusing on direct interaction. The use of other organizations as part of the channel structure between citizens and government is the introduction of (new) intermediaries. The disintermediation argument, which eliminates additional activities that are offered by intermediaries, is challenged because the focus on costs underestimates the range of facilitating services that can be offered by intermediaries (Janssen & Sol, 2000; Sarkar, Butler, & Steinfield, 1995). As part of enhancing integrated service delivery, disintermediation of current channels might not be a trivial step and needs to be part of a conscious MCM strategy for interacting with citizens in which all options –and their effects on costs and service levels – need to be considered.

The discussion on disintermediation and re-intermediation in multi channel service delivery becomes important as both directions seem to have their merits. This research contributes to the debate about removing or adding intermediaries in service provisioning channels. The aim of this paper is to investigate innovative channel structures in government service provisioning. This paper is part of a research project, aimed at helping government agencies to develop a better multi-channel strategy. We first present theories on the concepts of intermediation, disintermediation and re-intermediation. Next, we present the case study of the Dutch Vehicle Licensing agency. In this case study, both efficiency gains and improved service delivery are achieved by the disintermediation of some channels and the re-intermediation of others. Finally, we discuss the findings and draw conclusions.

2 Dis- and re-intermediation strategies

Advances in ICT are widely acknowledged as causing fundamental changes in network structures (Clemons & Row, 1992; Malone et al., 1987). From a transaction cost theory perspective, advances in the use of ICT have been hypothesized to enable organizations to connect directly to each other, and in this way reduce transaction costs (Gellman, 1996; Malone et al., 1987). Transaction costs result from the transfer of property rights between parties and exist because of friction in economic systems (Coase, 1937; Williamson, 1975). Malone, Yates and Benjamin (1987) use transaction cost theory as the theoretical foundation for the electronic markets hypothesis and the bypassing of intermediaries, thus disintermediation. If we apply this transaction cost argument to the domain of government service delivery, government organizations can reduce transaction costs by cutting out intermediary organizations that exist in the channel structure. If government organizations use this argument as a driver in their channel strategy, the government would focus on connecting with clients directly. If any intermediaries are present in the channel structure, organizations would seek ways to bypass them by introducing or strengthening their own channels. Since direct interactions with clients offers more control over client contact, disintermediation is sometimes promoted as a way to improve service delivery as well as to reduce costs.

Sarkar, Butler and Steinfeld (1995) argue that predictions about disintermediation underestimate the range of facilitating services offered by intermediating parties. This implies a need for a better understanding on how intermediaries can be used in channel structures to interact with clients. Dis- and re-intermediation are dependent on the strategies, resources and assets of actors, and on the life cycle of an industry (Chircu & Kauffman, 1999). Furthermore, we argue that the structure of a network, the assets of organizations and the political situation might also influence dis- and re-intermediation.

Intermediaries can offer benefits that are not taken into account by the disintermediation argument (Giaglis, Klein, & O'Keefe, 2002; Janssen & Verbraeck, 2005). Even though government organizations are able to connect directly to clients, the need for reducing costs and the advantages of intermediation make it worthwhile to consider new types of intermediaries. Intermediaries are aimed at bridging the gap between the service providers' offers and the service requesters' wishes and requests. Traditionally, the concept of electronic intermediaries refers to phenomena such as portals, which is necessary for integrated service provisioning in the front office. In contrast, current types of electronic intermediaries focus on providing facilities for, or supporting the coordination of, public-private service networks, which is less visible. Advantages include reusing functionality among network members, exchanging information, coordinating network partners' efforts and orchestrating cross-agency services. Therefore, besides a disintermediation strategy based on costs, a re-intermediation strategy can be considered in which organizations are part of the channel structure. *Figure 1* shows the developments schematically, with a re-intermediation approach at the left hand of the figure and a disintermediation approach to the right.

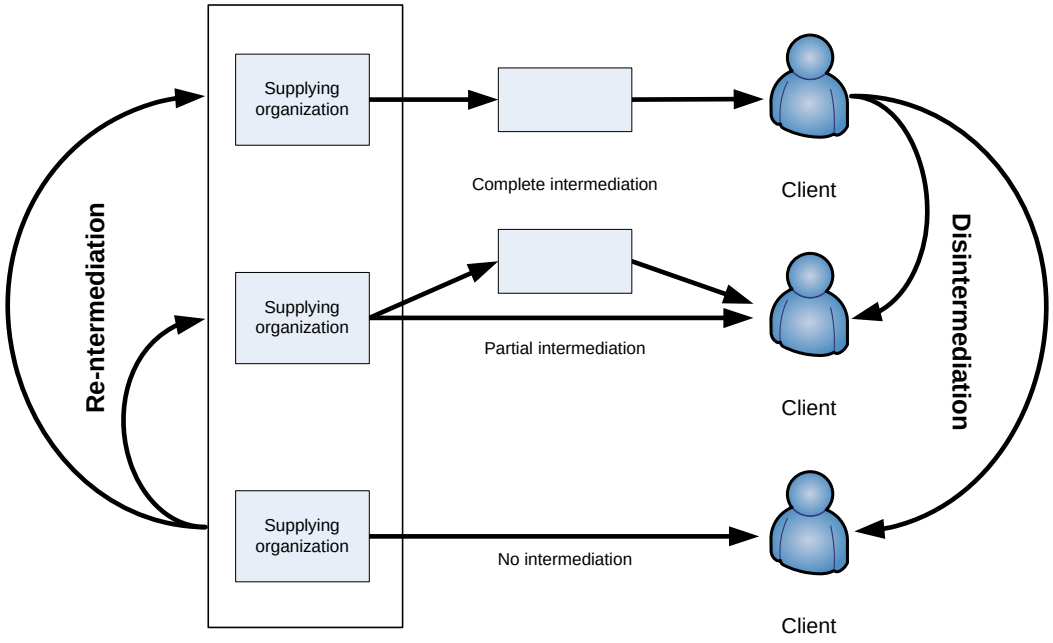


Figure 1: intermediation strategies

The question remains what an intermediary exactly is. The literature seems to suggest that almost any organization supporting an interaction between two parties can be called an intermediary from some point of view (Bailey & Bakos, 1997; Resnick, Zeckhauser, & Avery, 1995; Sarkar et al., 1995; Spulber, 1996). Also, various other names are used, such as network administrative organizations (Provan & Milward, 1995). To sum it all up, an intermediary is anything that helps bring together producer and consumer, and smooth the relationship. In a public service network, producers are the public agencies and consumers are citizens or businesses. In the future, the role of intermediaries might even be extended with many services still in their infancy (Österle, Fleisch, Alt, & Bach, 2000). In a MCM strategy, not only public intermediaries should be considered, but private sector intermediaries as well. For example, the service desk at a post office might be equally suitable for offering simple government products as a municipal service desk, while offering more locations and easier access. The use of private sector intermediaries may put more stress on agreements and contracts that specify the relationships between organizations in a public-private network (Pongsiri, 2003). New types of intermediaries provide infrastructure facilities for supporting the interactions between network members and even are aimed at orchestrating a network to ensure smooth service delivery. An example of a highly mediated channel structure can be found in the tourism domain, where tour operators combine basic services of many suppliers (hotels, restaurants, car rental agencies, airliners, etc.) into a new product, and where travel agents act as information brokers and offer booking facilities (Werthner & Klein, 1999).

This implies an inclusive sense of what an intermediary is. Implicit in some of the preceding parts is the sense of an intermediary as an aid to connect to a target group by an organization. This is our view of an intermediary in the channel structure. An intermediary is in this way positioned between the clients and the providers of services and is part of the channel(s) organizations operate.

An important function intermediaries can perform in a public(-private) service network is creating a one-stop-shop by integrating disparate activities performed by separate organizations to produce a whole that exceeds the sum of its parts. One of the core activities is aggregating information about the participants, the offerings and its users. In a public service network, each government agency acts as a service provider to citizens and businesses, and each focuses on their own activities (Janssen et al., 2006). However, many of those activities are just a part of a more general service required by a citizen or a business. Such a general service may involve multiple processes of multiple organizations in the public and private sector, each operating its own channels. The service-delivery process needs to be coordinated across organizational boundaries. The coordination of the interdependencies of the organizations involved is a task which is still often performed by the client. Coordination can be defined as “managing the dependencies between activities” (Malone & Crowston, 1994, p. 90). The dependencies that need to be managed are those between the activities of

organizations in a service network and the dependencies between the channels in a multi-channel environment. An intermediary can offer a one-stop-shop to clients by taking over the coordination of the various channels and services. Other roles of intermediaries include matching demand and supply, aggregating information, providing trust and the facilitation of a service network (Bailey & Bakos, 1997; Janssen & Sol, 2000). The added value intermediaries can offer should be taken into account in strategies for interacting with citizens and businesses.

3 Case study: vehicle administration

To research the innovative mindset of the use of re- and disintermediation strategies in public-private service networks, we researched the Dutch Vehicle Licensing agency (abbreviated as RDW in Dutch). This case was selected as a good example of re-configuring a business network by enabling intermediaries in the channel structure. The RDW is also seen as an international good practice (Undheim & Blakemore, 2007). The case study was based on document analyses and interviews with practitioners and an expert.

Increased political demands were the main driver for the RDW to reconfigure the channel structure. The RDW was to improve supervision of the vehicles on the roads in the Netherlands, monitor technical safety and enhance the collection of the required taxes and fines. These functions were previously performed by several organizations (i.e. the police, the tax agency for motorized vehicles, the Ministry of Finance and the RDW), each with its own registrations of vehicles. Those registrations were expensive and of low quality due to is fragmented nature.

Many public administrations would, facing these demands, set up an executive agency to perform all those tasks. The organization would require substantive control over the various links in the vehicle service network. Given the many actors, activities and dependencies among those, such coordination task is big. Disintermediation would be the typical strategy. Applied to the case at hand, the strategy would suggest that the RDW took matters into their own hand. Instead, they adopted an innovative mindset and chose to redesign the service network by the disintermediation of some channels, and subsequent re-intermediation of others. The key functions of the new channel structure were admitting vehicles and components to the Dutch market (based on technical regulations), certifying companies that supervise the technical state of vehicles, issuing documents related to vehicles and their owners, and managing and sharing information about vehicles (Undheim & Blakemore, 2007, p. 81).

Part of the redesigned network is the transfer of car ownership, which features both dis- and re-intermediation. The transfer of car ownership can be done in two ways; a car can be bought from a car dealer or from a private individual. For changing the ownership of a car, the records containing car registration numbers has to be linked with the civil registry. The RDW has the mandate to do this, but is allowed to authorize other parties to link these registries. The RDW authorized the Post Offices to perform this function. A car buyer and seller (private individual or a car dealer) would have to go to the Post Office to change the registration of ownership. The Post Office ensures that people have identified themselves and that the transaction is legal. The notification of change would take about a week and a substantial part of the fee was retained by the Post Office (Undheim & Blakemore, 2007). The typical strategy of disintermediation would suggest that the RDW cut out the Post Office and offer the service through channels of their own, for example a website and a call center. *Figure 2* illustrates this strategy.

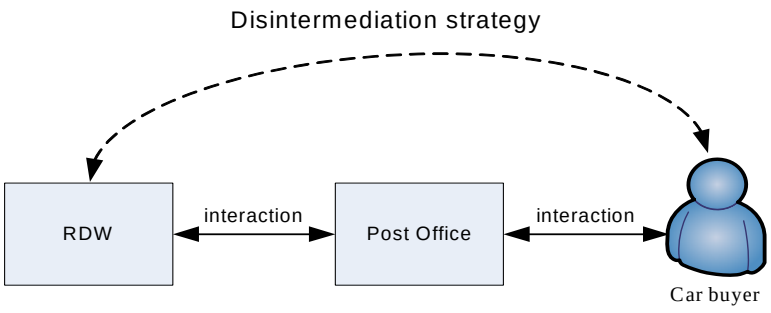


Figure 2: typical strategy - disintermediation

In part, this is what the RDW did in their MCM structure redesign. They set up a call center and a transactional website and cut out the Post Office. In addition, car dealers were authorized to link the registries as well, and thereby they were enabled to transfer car ownership for their clients directly. With the disintermediation of the Post Office for this process, car dealers were re-intermediated in the service channel to function between their customers and the government. Still, for transactions between private individuals, the Post Office retained its function as an intermediary. *Figure 3* shows this new intermediated channel structure.

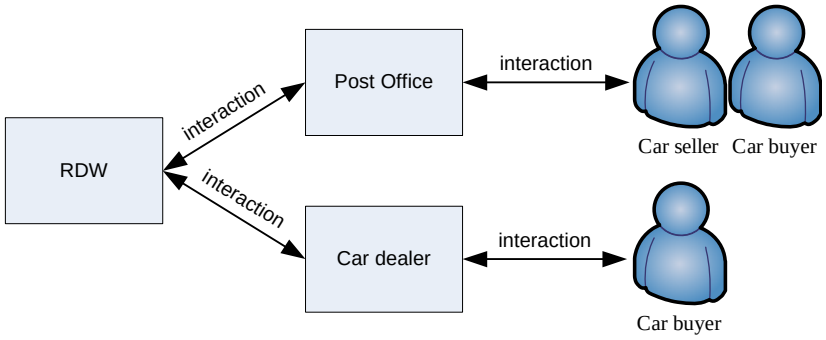


Figure 3: RDW solution - intermediated channel structure

Instead of just cutting out intermediaries, the RDW choose a MCM approach in which organizations that were an inherent part of the service delivery chain are re-intermediated in the channel structure (Zuurmond, 2003). Besides an online channel, telephone inquiries and direct communication to citizens are still supported. The Post Office and car dealers act as a front desk with widespread offices and a far more logical location in the process (of buying a car) than the RDW could have implemented itself. For car dealers, being part of the channel structure enables them to offer a more complete service to their customers. They can help their customers by taking care of the administrative part online, instead of having to accompany them to a Post Office.

To enable the network redesign, the RDW setup a facilitating IT infrastructure in the vehicle chain, accessible for all organizations involved, including private parties such as car dealers, Post Offices, and insurance companies as well. Garages were certified to control the technical state of vehicles, police started using the network to identify cars, the collection agency to collect fines, the Ministry to collect taxes and the RDW, in cooperation with insurers, to check whether vehicles are insured. This network redesign, with the aid of private sector intermediaries, greatly reduced administrative staff and paperwork (Zuurmond, 2003). The financial results are very promising, with costs remaining relatively low, and income exceeding costs in 2006 (Undheim & Blakemore, 2007). The information quality of the vehicle administration has been improved significantly. This indicates that disintermediation of some channels while re-intermediating others, can improve both the efficiency of the chain and the quality of the services by using private sector intermediaries as a first point of contact for citizens.

4 Discussion: private sector intermediaries as part of a government service strategy

This paper is aimed at looking into intermediation as part of an innovative channel structure for government service delivery. In the RDW case study we found strategies for the disintermediation of some channels but also for the subsequent re-intermediation. For car dealers, the Post Office no longer is an intermediary in the process of selling a car. Instead, they have themselves become intermediaries for customers buying a car.

The use of intermediaries, or the choice to pursue a strategy of disintermediation, needs to be part of a conscious service strategy of a broader MCM approach. The case study shows that the disintermediation of some links and the re-intermediation of others, can improve the quality of the service. The strategies can be complementary and might both be needed to advance eGovernment; disintermediation to get rid of some of the traditional channels, and re-intermediation can be helpful in cases where products are complex and other

parties add value as an intermediary. What is more, a well designed channel structure and the necessary facilities can also increase efficiency. In the case study, savings exceed costs and both the supervision of vehicles and the quality of information improved.

Intermediaries like the car dealers in the case study, can strengthen the service delivery channel. For a customer of the car dealer, this saves the extra step of filing administrative paperwork. Car dealers are a logical point of entry in service chain of buying a car, and by facilitating such intermediaries the level of service delivery is improved. For other transactions, the Post Office can offer added value because of their widespread network of service desks. If we hold the thought of the Post Office's function in the vehicle case, it is imaginable that Post Offices are used for other government-citizen interactions that require personal contact as well. The government can act as a network facilitator, enabling both public and private sector organizations to play their part in the service network. This requires a high quality facilitating infrastructure, but even more so a different mindset, with a focus on collaboration in a public-private service network. Although the solution adopted by the RDW might seem straightforward, it requires a radical reorientation to the concept of service delivery and networks. A culture of cooperation is needed, including both public and private partners. In a more far reaching scenario, this fundamentally alters the role of government without requiring major technological transformations. It is all about creating a different mindset and understanding that intermediaries can bring channels closer to the clients.

Service networks in which organizations explicitly design their collaboration are still at a formative stage, and it is hard to fully predict the roles and use of intermediaries. The roles of intermediaries will probably depend on multiple factors, like the present organizational structure, the political climate and available resources. In the Netherlands there seems to be a tendency to create uniform channels across many governmental agencies. Projects like a national authentication facility contribute to this. Enabling private organizations to become an active part of the service network might introduce risks like conflicts of interests, concerns on privacy, and equal and fair access and so on. These concerns cannot always be avoided and have to be dealt with. There should be mechanisms to ensure the overall quality of the entire service network, since a car dealer committing fraud might impact the trust in the RDW or even in the government as a whole. It is still unclear what the impact of private sector intermediaries is on the trust of citizens and business in government service delivery. In some cases, the use of an intermediary might actually lead to increased trust in a certain service or product. To provide an example from another domain, newspapers are often a trusted source of information for readers, thereby becoming a *trusted intermediary* (Ihlström & Palmer, 2002). In countries where private institutions like banks are trusted more then government, the use of such an organization as an intermediary in the channel structure, might increase trust in the service, and perhaps even in government service delivery as a whole.

5 Conclusions and future work

Disintermediation was traditionally viewed as a way of cutting costs and improving efficiency. As budgets are lowered this is a logical strategy for governments to pursue. However, governments are also aiming for demand-driven service provisioning. Re-intermediation could be a way to improve customer-orientation by introducing new channels, or channel structures, that match the citizens' needs better than traditional channel structures. This strategy is less obvious, as it includes channels beyond the borders of the government organization.

We found that disintermediation and re-intermediation are complimentary to each other and both can help to advance eGovernment. Disintermediation might be necessary to get rid of low-performing traditional channels, whereas re-intermediation might be especially useful for improving the service quality and to connect to clients' closest or most logical interaction point. Intermediaries can serve as a front desk, incorporate a government procedure in their product, or coordinate public service delivery processes, for example by bundling products and services like the aforementioned travel agencies. Rethinking the channel structure and introducing intermediaries can augment the other channels. The use of intermediaries is primarily a process of creating an innovative and collaborative mindset, in which trust is an essential ingredient. Therefore, we expect intermediaries to be of help in the next phase in improving government service delivery and suggest that government organizations consider the use of intermediaries in their channel structure to offer services closer to their constituents.

A lot is still unknown about the use, roles and responsibilities of intermediaries in government service delivery. For future research we argue for a careful analysis of the structure, functions and added value of intermediaries. Especially the role of private parties needs to be looked into, for example from the perspective of user resistance and the trusted role of intermediaries. Risks on the visibility of the government party, potential conflicts of interests, equal access, accountability, and other considerations in public-private cooperation should be examined further. The next step in our research is to compare the RDW's approach with other successful cases with innovative, intermediated, channel structures.

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Towards a sustainable e-Participation implementation model

This paper proposes a framework for an effective e-Participation model that can be suitable under certain socio-economic settings and applicable to any country. Most of such previous initiatives were experimental in nature and lacked in both public awareness and clearly defined expected outcomes.

A great majority of the existing frameworks are inadequate to address their universal applicability in countries with certain socio-economic and technological settings. Though there is so far no "one size fits all" strategy in implementing eGovernment, there are some essential common elements in the transformation. Therefore, this paper attempts to develop a singular sustainable model based on some theories and the lessons learned from existing e-Participation initiatives of developing and developed countries, so that the benefits of ICT can be maximized and greater participation be ensured.

The model is initially presumed to be sustainable since it is designed to fit under any socio-economic conditions of a country and can be initiated both by public (state) and private agencies. The study also reviews current research on e-Participation and assesses existing endeavours and challenges for the countries.



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Keywords
e-Democracy, e-Participation, participation, Digital divide, e-Governance, Civic engagement

> "Identifying the characteristics of the domain of 'citizens' in e-Participation is an important issue."

1 Introduction

In political science, participation is the fundamental principle of democracy. It means to take part in collaborative activities for achieving shared and common goals (Wikipedia, 2007) within a certain platform facilitated by a certain leadership. E-Participation, which is the new means of participation and sub-set of e-governance and e-democracies, is based on modern ICT supported platform to facilitate the participation in government and governance. Brown (2004) points out that the influence of modern science on the democracy symbolizes and promotes liberal democratic values such as transparency, scepticism, and collective problem-solving, strengthens wealth and security and henceforth helps to make politics and policy more rational and effective.

The new version of participation has been intended to develop to transform traditional bureaucratic systems to participatory, autocratic to democratic, and exclusive to inclusive, empowering, open, transparent and trustworthy. However, many studies reveal that the use of new technologies may not lead to greater participation in organizations. Rather, it leads to increased informal communication amongst all existing individuals rather than creating new members (Komito, 2005). Also, it has been evident that ICT tools can not support every participatory technique which may require significant modifications of the traditional structure (Tambouris et al., 2007).

The word sustainability refers to the continuation of producing expected outputs without creating any disharmony and imbalance in a system. Contemporary studies show that ICT-based government systems raise barriers and in many instances create digital inequalities between the 'tech-haves' and 'tech-haves not' (EAG, 2005), of which one group reaps the benefits of IT-enabled accessibility by helping each other (Horrigan, 2005) and one cannot. This phenomenon will not support sustainable e-Participation in which the systems that are expected to provide certain outputs may be disrupted because of some serious factors being ignored during the plan, design and implementation phases. Therefore, a sustainable model for e-Participation may guide the decision makers in state and private levels to implement the systems in certain place and in certain time. Accordingly, adding values and innovations in the various phases of the model will help the stakeholders to reap the benefits of e-Democracy on continuous basis.

2 Methodology

Because of versatility of the selected topic, this paper is based on qualitative research, which is descriptive in nature, that seeks to understand the contemporary epistemology of e-Participation and possible solutions. The main research questions of this paper are i) what are the present nature of e-Participation frameworks and corresponding tools? and, ii) can a sustainable model be framed up and be applicable to any settings? To get the answers to these questions and to have insights of the subject matter, an extensive web based literature review has been conducted. The websites of the highly ranked e-participatory countries have also been examined. The study also examines available benchmarking tools and concepts on e-Participations and afterwards proposes a sustainable e-Participation model for the policy makers in both public and private sectors.

3 Literature Review

E-Participation, which has been shared with e-Democracy (Andersen, 2006), and encompassed by both supply and demand side stakeholders (UNKB, 2007), has been defined by Macintosh (2004) as 'knowledge intensive process. This is an interactive, collaborative, incremental and dynamic process which requires meaningful messages to be extracted from large assemblages of data produced by multiple stakeholders over time. Good e-service design and good e-Participation is complementary to each other (Grönlund, 2006). One of the objectives of the application of ICT in e-Participation is to motivate and engage wider citizens through diverse modes of technical and communicative skills to ensure broader participation in the policy process, real-time qualitative and accessible information, transparent and accountable governance.

Civic engagement through ICT is a demand of time since the recent phenomena of public participation in civic affairs and especially in democratic elections exhibits a declining trend which may cause a serious crisis in democratic nations (OECD, 2001). Side by side, widespread adoption of ICT in the public governance pushes decision makers to adopt electronic applications in the various segments of the governance seriously.

As far as e-Participation is concerned, it has been evident from OECD countries that such participation is more active in the smaller units of government, particularly at the local community level (Ahmed, 2006; Whyte et. al., 2006; Norris, 2006). However, such scenario of developed countries should not be generalized in the developing countries, where the reverse is the reality and the issue of digital divide is very much evident.

E-Participation is sometimes synonymously used as grassroots digital democracy, which emphasizes the understanding of democracy as participatory bottom-up-process (Fuchs, 2006). Here, participatory is a self-managed system (Banathy, 1996) that empowers people towards the decision making process through the mobilization of resources and capacities (Fuchs, 2006). Self-managed concept indicates that e-Democracy doesn't have to be offered and organized by the State and its formal structure. Rather, this is a spontaneous activity by an organization or group of people for a specific need in a specific time which evolves through the transformation of informal structure. However, in both cases a coordinated leadership is required for making the participation more effective.

Arnstein (1969) in his analysis points out that participation starts crossing over from eight rungs on the ladder, which are: (1) Manipulation, (2) Therapy, (3) Information, (4) Consultation, (5) Placation, (6) Partnership, (7) delegated power and (8) citizen control. Here, the first two steps are categorized under 'non-participation or 'least citizen participation' ,which are not aimed to participate in a program but to educate the participants. Levels 3 and 4, which are collectively said as "tokenism", unimportantly allow citizens to hear and to be heard. The next higher level of tokenism, Placation, allows citizens to advise the decision makers who have continued right to decide. The last three steps of the ladder are the levels of 'citizen power' where the citizens actively and democratically exercise their power. As the ladder characterizes, to ensure effective participation, one can not jump to the upper level without crossing over the previous. It indicates that prior to high level of participation appropriate readiness is essential - otherwise this may result in partial or total failure.

Arnstein's (1969) insights on participation are viewed on urban planning. It provides an important contribution to conceptualize participation which can be related to e-Participation as well. Because of lack of ambitious policy initiatives, high level e-Participation in the decision making and planning process is not so easy and can not be done overnight (Andersen, 2006). Also, lack of research is in place to demonstrate the means of suitable technology to facilitate effective participation and identification of supply (public, private or combination of both initiatives) and demand side stakeholders under the various socio-economic settings of the countries. International Teledemocracy Centre of Napier University (2006) shows through analyzing a project carried out in central Scotland that web based tools enable and encourage more people to participate in local democracy. But on the contrary, another study (Islam et al., 2007) in Bangladesh reveals that web based dissemination channel is very much ineffective as the penetration rate of PC and internet is significantly low. In this case, where there is a little or no educational attainment combination of mobile phones, SMS, call centres and local resources could be more accessible and can help to narrow digital divide as well (WNDW, 2006). Therefore, for developing countries the term m-Democracy is more suitable than e-Democracy, where penetration rate of mobile phones is higher than the rate of internet access (Ahmed, 2006).

Identifying the characteristics of the domain of 'citizens' in e-Participation is an important issue. However, it is not so clear whether such participation is with only the general citizens of the country (though found in most cases) or in combination of other interested groups such as (1) Formal policies, (2) Civil Society and (3) Administration (Grönlund, 2006). It is assumed that the provision of physical, political, procedural and electronic architecture along with continual vigilance of rigorous data protection measures in e-Participation is a must (Acland, 2003), but there is not so many literature showing how to couple and shape them up in a single framework. This is a kind of barrier towards conceptualizing such participation. However, without understanding and identifying the nature of barriers we can not formulate an effective framework. Norris (2006), in his first nationwide survey of e-Democracy among U.S. local governments, identifies some barriers to e-Participation. These are: (1) lack of funding, (2) lack of technology staff, (3) upgrade technology, (4) citizen demand, (5) demand by elected officials, (6) security issues, (7) concern about digital divide, (8) privacy issues, (9) technology expertise, (10) concern about unrepresentative groups, (11) participation and (12) support by elected officials. Ahmed (2006) argues that civic interest towards e-Participation is declining because of intensive focus on 'e' accessibility issues rather than e-enabling existing social inclusion policies like health of e-health and education of e-education. Therefore, publicizing all aspects and inclusions of e-Participation should be given more emphasis by the supply side.

Above all, it is important to understand the determining factors for participation. The failure to understand the facts of participatory behaviours and expectations may lead to surprise among the actors of participation, which is very evident in the context of political participation (Ferejohn, 2005). However, as the participation evolves through the practice in a specific situation, therefore it is not possible to develop a strong methodological root. This is also cumbersome to have a coherent view of participation without a grounded experience (Rifkin & Kangere, 2002). On the other hand, grounded experience can not be realized without identifying the associated variables. Fowler et al. (2008) identify a good number of variables listed under the four categories which are more pertinent for political participation. These are: Demographic (e.g. gender , race, marital status, income, occupational prestige, and home ownership), Attitudinal and behavioural (e.g. interest in the campaign, access to political information, general political knowledge, strength of partisanship, feelings of civic duty, internal and external efficacy, personal skill acquisition, altruism, and patience), Social (e.g. interpersonal communication, social identification, group consciousness, socialization, political disagreement, and social capital) and Institutional (e.g. contact from political organizations, civic education , and barriers to registration). These numerous variations suggest that there should have certain implementation model on participation that can easily be customized and be replicable in a specific situation.

4 Benchmark Analysis to Understand e-Participation Readiness

Benchmarking studies help policy makers to compare the standing of their country in terms of others and assist them to adopt strategic decision-making on e-Democracy and e-Governance at large. This also provides civil society a accountability tool for the resources they have invested on (Heeks, 2006). Though currently available benchmarking reports are mainly concerned with e-public services, not e-Participation, however, these may give some clues on the standing of countries' readiness for e-Participation.

Among a number of ICT related indexes initiated by numbers of organizations, there have been only three benchmarking tools based on certain factors and indicators to evaluate yearly status of countries and set them under a certain rank order. Center for Public Policy (CPC) of Brown University assesses, according to its recently published report, 1,687 national government websites of the 198 nations around the world. CPC evaluated websites of each country, even the non-English sites, to have full sense of presence of various features dealing with information availability, service delivery, public access (CPP, 2007). In addition, the UN Global EGovernment Survey (DESA, 2007) publishes a yearly comparative ranking of the 191 member countries of the UN according to two primary indicators: i) the state of eGovernment readiness; and ii) the extent of e-Participation as constructed on quantitative composite index of eGovernment readiness based on website assessment; telecommunication infrastructure and human resource endowment. The countries are ranked through the survey according to a numerical classification corresponding to the five stages of presence: Emerging, Enhanced, Interactive, Transactional and Networked. Based on this survey, the United Nations eGovernment Readiness Knowledge Base (UNKB) has further developed a benchmarking tool with a feature which provides a comparative assessment of the monitoring progress of country level readiness during the period from 2003 to 2005 (UNKB, 2007). Waseda University eGovernment Ranking (2007) is the first Asian institute that develops a global eGovernment measurement tool which in its survey includes only 32 countries. On the contrary to depend mainly on websites as has been commonly seen in the previous efforts, the Waseda eGovernment Ranking uses comprehensive indicators and parameters which include network preparedness, required interface functioning applications, management optimization, homepage situation, and the introduction of Chief Information Officers (CIO) (Wasida, 2007). However, this survey lacks covering many countries of the world and therefore may not be rational to generalize the result that would indicate overall global trends. Economist Intelligence Unit (EIU) (2005) in co-operation with the IBM Institute for Business Value, develops indexes based on qualitative and quantitative factors. This index though is not directly concerned with eGovernment but plays a significant role in understanding e-readiness status of the 65 countries of the world. Accenture eGovernment Maturity report (2007) focuses on 22 countries of which mostly are drawn from developed countries. The report quantitatively and qualitatively investigates overall maturity of the countries in the contexts of service and customer service. The report of 2005 evaluates 177 government services across 12 major service sectors. These are agriculture; defense; eDemocracy; education; human services; immigration, justice and public safety; participation; postal; procurement; regulation; revenue; and transport (Accenture, 2007). However, since the methodology of this maturity report is mainly based on developed countries, therefore the results can not be generalized to rest of the world. Table 1 summarizes the major e-governance related indexes and their comparative status and corresponding results for 2005.

Table 1: Summary and comparison of available Ranking methods and Top 10 countries in year 2005

Rank	*Waseda University*	*Brown University*	*UN E-gov Readiness Index*	*UN E-Participation Index*	*EIU E-readiness index*
1	USA	Taiwan	USA	UK	Denmark
2	Canada	Singapore	Denmark	Singapore	USA
3	Singapore	USA	Sweden	USA	Sweden
4	Finland	Hong Kong	UK	Canada	Switzerland
5	Sweden	China	South Korea	South Korea	UK
6	Australia	Canada	Australia	New Zealand	Hong Kong, Finland
7	Japan	Germany	Singapore	Denmark	
8	Hong Kong	Australia	Canada	Mexico	Netherlands
9	Malaysia	Ireland	Finland	Australia	Norway
10	UK	Vatican	Norway	Netherlands	Australia
Indicators	Network preparedness, Interface functioning applications, Management optimization, Homepage situation, and the introduction of CIO	Websites dealing with Information availability, Service delivery, Public access	Quantitative indicators: Website assessment; Telecommunication infrastructure, Human resource endowment. E-Participation Index not included.	Qualitative indicators: Supply side assessment of E-information, E-consultation, E-decision making. Questionnaires having 0-4 scale each.	Connectivity, Business environment, Consumer and business adoption, Legal and policy environment, Social and cultural environment, Supporting E-services.
Country Coverage	32	198	191		65

Table 1 demonstrates that there is a less discrepancy in the list of top 10 countries although the indicators of indexes are not similar. Countries like USA, Canada, Singapore, Sweden, Australia, Hong Kong, UK and South Korea are almost common in all the ranking tools. The UN yearly eGovernment survey (DESA, 2007) evaluates quantitatively, and therefore this does not provide better information and services of a nation which needs normative or qualitative judgments on the issues of veracity, accessibility, or usability (Curtin, 2006).

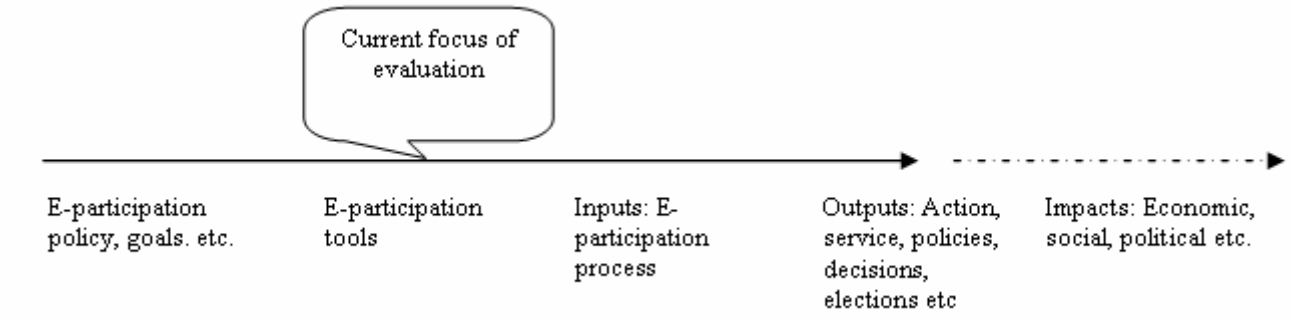


Figure 1: *Broadened spectrum of e-participation evaluation. Source: UN workshop on e-Participation and e-Government, Budapest, Hungary, July 2006*

In addition, the e-Participation Index of UN is not supplemented with a quantitative index and focuses only on the supply side e-Participation which should be broadened on the both sides starting from policy to impact analysis (Curtin, 2006) as given in figure 1. The above analysis suggests that the indexes and their corresponding indicators would contribute to important direction towards framing up a sustainable e-Participation model.

5 e-Participation Models and Implementation Process

The term e-Participation is quite new as a product of e-governance and e-Democracy programs, and therefore the availability of the universally accepted framework for such is very limited in numbers (Rifkin & Kangere, 2002). Ahmed (2003) argues that the concept e-Participation is still experimental in nature and the expected outputs are yet to be clearly defined. However, the following discussion tries to conceptualize some notable frameworks on the various aspects of participation.

OECD's (2001) framework on e-Participation is widely known and is constituted by i) Information, ii) Consultation and iii) Active participation. Macintosh (2004) on the basis of this dimension develops three levels of e-Participation: (1) e-enabling, (2) e-engaging and (3) e-empowering. Here in e-empowering, citizens do not only participate actively but extend support to such initiatives and subsequently emerge as important facilitators of providing bottom-up ideas in the political process. UN e-Participation framework (DESA, 2007) is based on the similar dimension with the names of i) e-information, ii) e-consultation and iii) e-decision making. The relationship of these thoughts is summarized in figure 2.

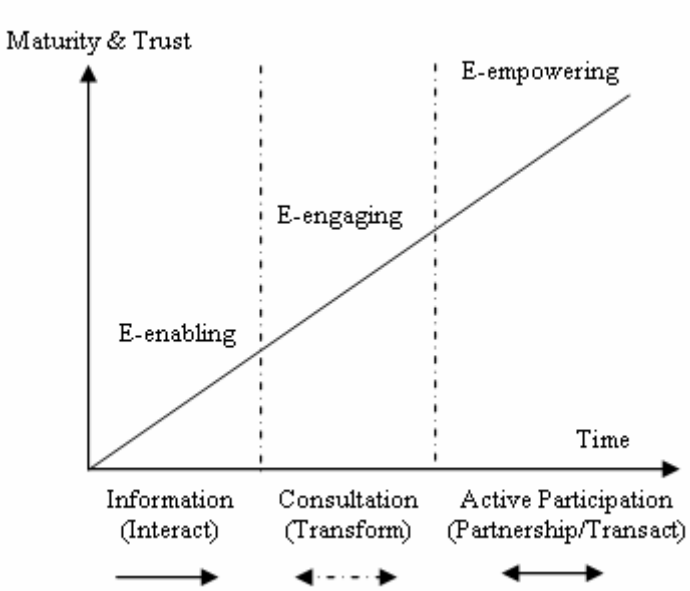


Figure 2: Integrated dimension of e-Participation

Here, 'Information' is the first level 'active but one-way' initiative that enables citizen to access the information passively. This can be done through static fact sheets and websites. 'Consultation' and 'Active participation' have a two-way relationship. In the Consultation level, the government sets the questions and manages the process and citizens are encouraged to engage in contributing their views on a particular issue through online public comment, chat rooms, focus groups, surveys and public meetings.

Under 'Active participation', citizens are empowered by actively and independently participating in the policy-making process of the government based on a partnership. This dimension only exhibits the level of e-Participation over time and possesses positive correlation between a certain level and maturity. However, it doesn't provide guidelines to the country to build e-Participation architecture irrespective to the level of standing over time. The understanding of such levels of participation is derived along with the overall eGovernment progress of a country.

Tambouris et al. (2007) propose (Figure 3) a "Five-stage top-down and bottom-up" framework which helps in scoping e-Participation that focuses on the stages, starting from the Democratic process (Top) of a country until Technology (Down). Here, the democratic layer, as from top-down, includes all the democratic process of a country and acts as a catalyst by facilitating communication between policy makers (G2C) and the public (G2C) and between themselves (C2C and G2G). Further more, participatory techniques are used in order to engage and involve all the democratic stakeholders and address the issue of carrying out participatory processes.

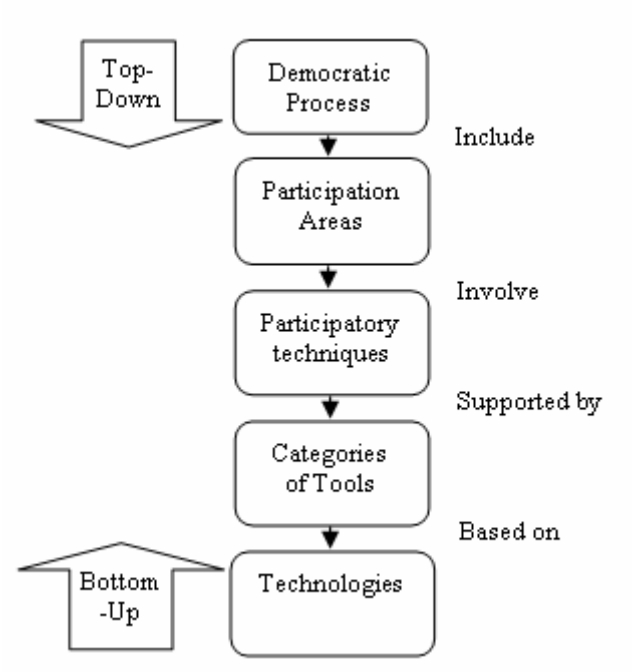


Figure 3: Five-stage top-down and bottom-up e-participation framework (Tambouris et al., 2007)

Appropriate ICT tools as in the next phase can be used to enhance and support particular e-Participation techniques upon a certain level of modification from the traditional sense of (offline) participation. In case of bottom-up approach, ICT tools can act proactively and lead to introduce new participatory techniques and subsequently broaden the participation (Tambouries et al., 2007). This observation is quite evident in a developing and democratic country like Bangladesh, where the use of new ICT tools like mobile phone in the grassroots level pushes up to introduce a new sense of participation. Islam et al. (2008) study on the agricultural market information services of Bangladesh shows that while the PC penetration is less than 3%, internet penetration is less than one-tenth of that. On the other hand, records on December 2007 indicate that there is one mobile phone per four persons, compared to one per seven persons in 2006 which is expected to be about one per three persons by 2009. Clearly, using the pattern of mobile phones in Bangladesh negates the positive correlation between poverty and digital access. The amazing growth in mobile telephony in Bangladesh offers numerous value added services. There, people conveniently exchange and cast their opinions on various issues mostly initiated by the private sector and particularly by the newspapers and private satellite TV channels.

The top-down approach is rationally applicable to the democratic developed countries where the role of ICT is just supportive. This also indicates that the effective use of this framework depends on the political structure of a country and may not be suitable for those without a democratic environment.

The Spidergram framework by Rifkin et al. (1988) helps to understand participation as a process and assess the changes and progress of programmes over time. Rifkin and her colleagues developed this framework for measuring community participation in health related programs and has been used in many countries so far. This tool describes changes in the process by plotting the situation along five critical factors in participation: needs assessment, leadership, organization, management and resource mobilization. All these factors in this tool are joined in the middle to give a holistic view of progress of the programme, but they do not tell how to implement the program.

Phang & Kankanhalli (2007) propose a framework (Table 2) of ICT exploitation for participation which is based on setting the four objectives. In addition, the framework shows that appropriate techniques and corresponding ICT tools are critical to achieve the objectives. However, this framework doesn't address the socio-economic, technical and others issues that are required prior to setting up any objectives. It also lacks explaining stakeholders and the nature of sequential stages, as seen in other initiatives. Moreover, the framework focuses more on web based tools that may not be easily and widely available in the developing countries.

Table 2: A framework of ICT exploitation for e-Participation proposed by Phang & Kankanhalli (2007)

E-Participation objectives ↓	Information Exchange (Interactive avenue)	Education & support building (Formal participants selection & engagement)	Decision making Supplements (Participation processes)	Input probing (Unbiased data collection mechanisms)
ICT tools that can support the participatory techniques appropriately	Web portal with Online discussion forum, Online chat	Electronic profiling, Online chat, Discussion forum with login feature, Teleconferencing, Videoconferencing, E-mail	Group support systems with process restrictiveness feature, Online pair-wise structured survey, Visualization tools	Online survey questionnaire, Web comment form, Data analysis tools

It is now apparent that most of the frameworks are on evolutionary in nature and do not provide a clear and complete roadmap to the policy makers of public and private organizations to proceed with adopting ICT based participation in their e-governance and e-Democracy implementation programs. Most of the frameworks are inadequate to address their universal applicability in countries having certain socio-economic and technological settings. Therefore, in consideration to the above multifaceted concepts and findings, this paper proposes the following (Figure 4) e-Participation model (or 7Ps model in brief). The model is initially presumed to be sustainable since it is designed to fit under any socio-economic conditions of a country and can be initiated both by public (state) and private agencies. The proposed model has seven phases, starting from the down to top, and can be explained, compared and related in any of the three segments of the framework stated in Figure 2. The explanations of each phases of this model are given in Figure 4.

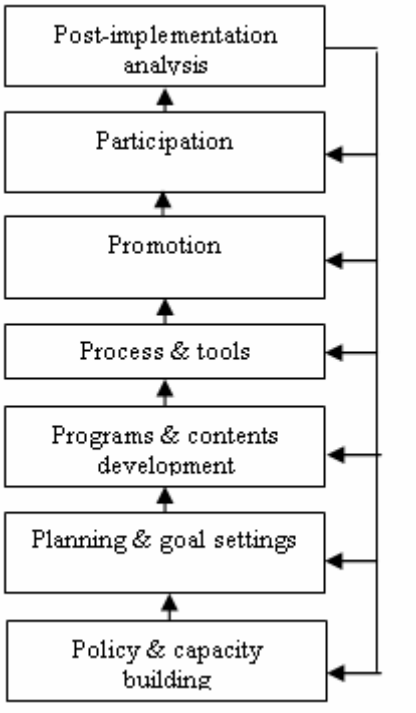


Figure 4: 7Ps Sustainable E-participation implementation model

Policy and capacity building:

This phase is the most fundamental base for initiating any project to be sustained for a long period. Without a concrete national planning and policy agenda and a strong but visionary leadership and political consciousness, nothing is achievable in a country. The national policy agenda should be addressed and reformed in accordance to the '5Ws' and '2Hs' (GoJ, 2005), that is: what, why, whom, when, where, how and how much under the considerations of the country's socio-economic and technological realities. This should particularly include the sources and allocation of funds both for short and long-term.

Development of techno-skills through vocational and formal education, building sustainable telecommunication infrastructure including hardware, software, websites, mobile phone based services and networking and making them available in both rural and urban community through various public and private agencies, institutional readiness in both supply and demand sides, formulating appropriate legislations and transparent applications, promoting ICT research initiatives and awareness and above all strengthening democratic processes and political conscious from the both directions of central and local government are must prior to adopting any e-initiative in a country.

Notably, this may lead to confusion as how a private agency or group of ordinary people can follow this phase, since they do not have direct control over the capacity building process. Here the role of such actors is reactive to a certain situation and can infuse bargaining power over the governmental decision making process. They may advocate for a policy and capacity building conducive for a certain participation process. However, in some instances, policy and capacity building may be viewed flexibly if there is a participatory initiative being carried out by a non-governmental organization or by a group of people within their boundary and scope of activities.

Planning and goal settings:

The '5Ws' and '2Hs' should also be addressed here but giving particular focus on selecting target audience and to ensure how to make effective participation in the decision making process. This phase also provokes that e-Participation programmes emerge from overall e-governance initiatives, and can not be launched in isolation.

Program and content development:

The development of a program and its corresponding contents must be designed in a way so that this can be considered appropriate to the focused group and accordingly be accessible through easily and widely available tools.

Process and tools:

This phase determines how the programs and contents should be used. Different tools may be used for achieving different goals through different mechanisms. This also suggests that not all goals are achievable through a single tool or channel and mechanisms. Here, the channels could be webs, mobile phones, digital televisions, call centres, kiosks, computers, PDAs and any future e-channel that would be easily and widely available to the targeted audience. Above all, the socio-technical barriers of the participants must be kept in mind while designing the process to access the tools and contents.

Promotion:

Many projects have failed because of inappropriate awareness on the supply and the demand sides. Therefore, steps should be taken to make both sides aware of the mission of the initiative and how the initiative will provide benefits to the stakeholders. Though such initiative is mainly electronic in nature, the awareness programs should be carried out in offline (e.g. newspaper, leaflets) and online (e.g. email, facebook etc.) contexts. It is important to note in this phase that the promotional campaign is more critical at the local community or rural level than to the upper or urban level.

Participation:

This is a final implementation level where participation takes place depending on the stage of evolution of adopting the e-Participation program. As discussed under Figure 2 this can generally be of one-way at the initial level, changing the direction of communication as it matures over time and practices. Here, association

of rewards in the participation process on the both sides is needed in order to keep the motivational level of the participants sustained. Furthermore, the involvement of dynamic moderators is critical to the success at this level.

Post-implementation analysis:

Functionality of a system can not be sustained without the presence of an effective feedback mechanism and impact analysis and subsequently incorporating the results in order to correct and upgrade the service. As the model exhibits, the feedback and corrective measure in each phase contribute to the overall quality of the systems. However, feedback originating from this level and entering the first phase of the model may not provide immediate corrective actions, since this structure is long term in nature. In addition, according to the proposed model, the more we proceed to the upper parts of the ladder, the less likely need to adopt corrective measures.

6 Conclusion

Toffler et al. (1995) in their famous book 'Creating a New Civilization: The Politics of the Third Wave' set out the transition of civilization from a First Wave (agrarian) society into a Second Wave (industrial) and currently into a knowledge-based Third Wave society. The new possibility of meaningful participation has appeared because of the emerging technologies and changes in the society (Redburn et al., 2003). The success of such society requires effective participation through decentralized modern communication networks like internet (Stiglitz, 2002). However, an effective participation requires an effective framework with concrete guidelines. In fact, this paper finds the lack of clear guidelines that direct and implement a participatory process effectively. The proposed model therefore is the brainchild of existing e-Participation concepts and practices. Since the concepts of such topic are quite new and the speed of innovation is endless, therefore this paper suggests for further empirical and qualitative researches. This will help to examine the interoperability and sustainability of the proposed model and lead to improvement if needed over time.

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A new approach to International Judicial Cooperation through secure ICT platforms

Cooperation between judicial systems is a key factor for sustainable development, one of the EU's major priorities. eGovernment plans and e-Justice initiatives supported by the European Commission and national governments create a very favourable background for the adoption of ICT standards in the area of cross-border judicial cooperation, both in Member States and in pre-Accession countries.

Intensification of illegal immigration, trafficking of drugs, weapons and human beings and the advent of terrorism have made necessary a stronger judicial collaboration between European countries. This cooperation includes mutual recognition of judicial decisions, collaboration in investigation phases and approximation of national penal legislations. During investigations, an exchange of information on criminal offences and administrative infringements takes place between judges and investigators belonging to different countries. This exchange is still mainly based on paper support.

This essay presents an overview of judicial cooperation in cross-border investigations and describes how computer supported cooperative work (CSCW), coped with security technologies, can improve magistrates' activities during cross-border investigations on criminal matters.



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Keywords

Judicial cooperation, investigations, e-Justice, e-services, security, magistrates, SCJW, JCP, Jweb, crime, workgroups, criminal records, CSCW

> "Electronic case management is demonstrating a dramatic reduction of required time in many daily operations through ICT support."

1 Introduction. An overview of the background in the European Union

Justice is a crucial variable of sustainable development, particularly in areas where development is lagging back the average growth of the European Union and where criminal organisations may find a favourable ground to flourish. Criminal activities are getting familiar with the Internet, becoming every day more and more borderless and global. For example, money coming from corruption may be transferred in different countries just with a few "clicks" on a personal computer. Investigations imply the delivery of several international judicial cooperation requests inside and outside the EU, following evidence flows and involving different organisation and departments. It is a complex process, still based on paper format even inside the same judicial organisation.

The European Commission is currently fostering e-Justice as part of the Lisbon Strategy[1] and eGovernment and supporting the enhancement of cross border judicial cooperation in both EU Member States and pre-accession countries. The establishment of Eurojust in 2002 and the strong support given by the Directorate-General for Justice, Freedom and Security and by the Council of Europe through several funding schemes are key factors in this process. The Network of Criminal Registers (NJR project, supported by DG JLS), which connects electronically the criminal registers of the EU Member States; the EPOC III project, with Eurojust as partner, and the PROSECO[2] project (Support to prosecutors' network in South Eastern Europe, funded by CARDS program) are some of the many relevant ongoing activities. DG-INFSO is financing initiatives in ICT for criminal justice, such as the JWeB[3] [6][9](IST program) and JUMAS[4] (ICT program) projects. Relevant statistics about the trial phase have been collected by the Council of Europe through CEPEJ.

Many relevant projects in complementary fields, such as the mutual recognition of electronic signatures[5] and electronic identity and legal document interoperability, are running with strong support of the European Commission.

National e-Justice plans are in progress as well. In Italy the SICP project[6] re-organises the Italian ICT judicial system on district basis, connecting together judicial registers and deploying ICT systems for trial management (SIDIP project[7], under deployment in South Italy in areas with high density of organised crime).

Judicial cooperation actually benefits from limited ICT support. Recent practices showed that ICT technologies can support investigating magistrates and all judicial actors providing them with **Secure Judicial Cooperation Workspace** (SCJW) integrated e-services, like information and document sharing, workflow sharing, videoconference, shared agendas, and granting at the same time the fundamental pre-requisites of non repudiation, confidentiality, data security and integrity. The paper gives an overview on these issues from the user point of view, through the analysis of the SecurE-Justice [11] and JWeB projects achievements. In the latter, cross-border judicial cooperation is supported by different ICT platforms called Judicial Collaboration Platforms (JCP) [6], based on groupware online tools which support collaboration and knowledge sharing among geographically distributed workforces, within and among judicial organizations. The Italian and the Montenegrin Ministries of Justice participate as partners.

2 Cross-border judicial cooperation during criminal investigations

The investigation phase includes all activities from the crime notification to the trial, including cross-border judicial cooperation. This may vary from simple to complex judicial actions; but it has complex procedures and requirements (e.g. information security and non repudiation). Each investigation may include multiple cross-border judicial cooperation requests, as the following general flow shows (figure 1):

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[1] i2010 initiative, www.europa.eu.int/information_society/eeurope/i2010/index_en.htm
[2] EuropeAid/125802/C/ACT/Multi, http://ec.europa.eu/europeaid/cgi/frame12.pl , 2007
[3] JWeB project, http://www.jweb-net.com/
[4] JUMAS project, http://www.milanoricerche.it/jumas/new/home.html
[5] Recognition of electronic signature http://ec.europa.eu/idabc/en/document/6485 and http://ec.europa.eu/information_society/eeurope/i2010/esignature/index_en.htm
[6] SICP project, http://www.albertomaritati.org/site_upload/files/sigi_schema.pdf
[7] SIDIP project, https://www.giustiziacampania.it/file/1053/File/mozzillosidipsalerno.ppt

1) In the requesting country, the magistrate starts preliminary checks to understand if her/his requests to another country are likely to produce the expected results. Liaison magistrate support and preliminary contacts with magistrates in the requested country are typical actions.

2) The "requesting" magistrate prepares and sends the judicial cooperation request (often referred to as "letter of rogatory") containing the list of specific petitions to the other country. Usually the flow in the requesting country is called "active rogatory", while the flow in the requested country is called "passive rogatory". In the EU member states there is a well-defined frame for judicial cooperation.[8] In case no agreement between the collaborating countries exists, the Ministries of Justice are connected through the Ministries of Foreign Affairs and the embassies.

3) The judicial cooperation request is evaluated, usually by a court of appeal, that, in case of positive evaluation, appoints the prosecutors' office in charge of the requested activities by the other country. This prosecutors' office appoints a magistrate. The requesting magistrate, directly or via the office delegated to international judicial cooperation, receives this information and judicial cooperation starts.

4) Judicial cooperation requests are fulfilled: **requests for documents, for evidences, interrogations (also via videoconference where possible), specific actions (interceptions, sequestration, an arrest, etc.), joint investigations, etc..** When the requests are fully complied with, the judicial cooperation ends.

These activities may involve complex actions in the requested country and several officers (magistrates, police, etc.) of different departments. The liaison magistrate can support requesting magistrates, helping them to understand how to address their counterpart and, once judicial cooperation has been granted, in understanding and overcoming possible obstacles. Where no judicial cooperation agreement exists, all information must flow through the Ministry of Foreign Affairs and the embassies.

While agreements for mutual judicial assistance are now in force in the EU member states, just a few instruments in the judicial systems are available to track the "rogatories", especially the "passive" ones, and the magistrate action often suffers from this lack.

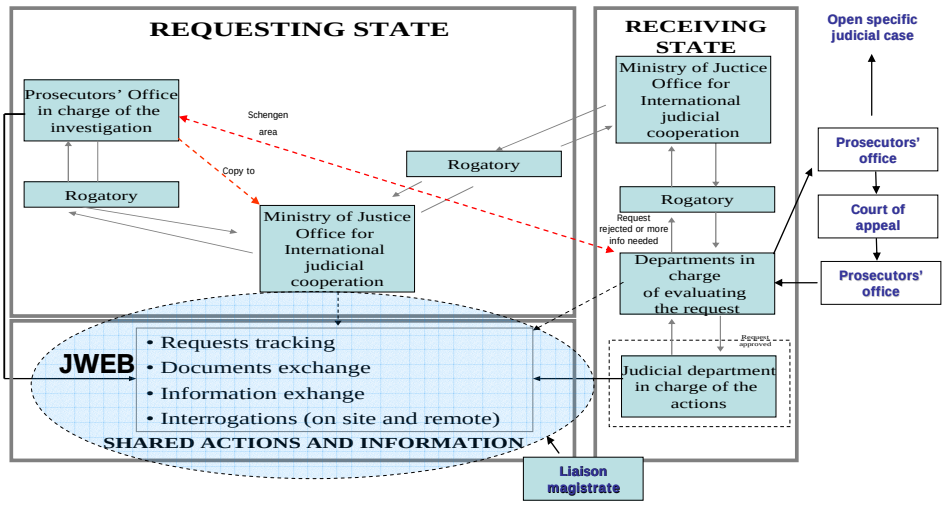


Figure 1. The cross-border judicial cooperation: a general workflow

Each national judicial system is independent from the others, both in legal and infrastructural terms. The judicial cooperation, from the ICT point of view, is carried out between two different infrastructures, the "requesting" ("active") and the "requested" ("passive") one, and includes activities such as judicial cooperation set-up, joint activities of the workgroups and secure exchange of not repudiable information between the two countries. These activities can be effectively supported by a secure collaborative workspace, as we are now going to describe.

[8] Judicial Cooperation, http://ec.europa.eu/justice_home/fsj/criminal/fsj_criminal_intro_en.htm

3 The cross-border Judicial Cooperation via secure ICT platforms

3.1 The services provided by a Judicial Collaboration Platform (JCP)

A workspace for judicial cooperation (figure 2) involves legal, organisational and technical issues, and requires a wide consensus in judicial organisations. It has to allow a straightforward user interface, easy data retrieval, and a seamless integration with procedures and systems already in place. All this, provided according to top-level security standards. In more detail, the main issues for judicial collaboration are:

- A Judicial Case is a secure private virtual workspace accessed by law enforcement and judicial authorities who need to collaborate in order to achieve common objectives and tasks.
- JCP services are on-line services, supplying various collaborative functionalities to the judicial authorities in a secure communication environment.
- User profile is a set of access rights assigned to a user. The access to a judicial case and to JCP services are based on predefined, as well as customised, role-based user profiles.
- Mutual assistance during investigations creates a shared part of the investigation folder.
- Each country will have its own infrastructure.

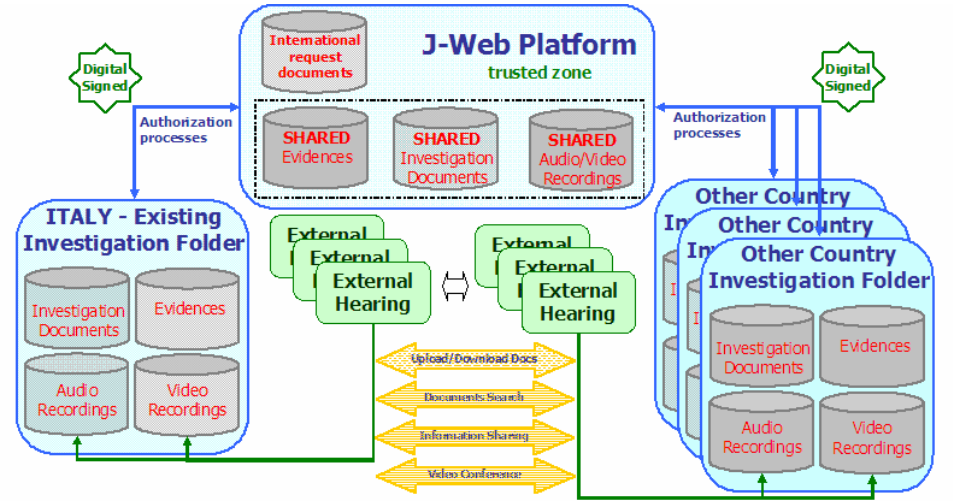


Figure 2. Logical Overview of the workspace for judicial cooperation.

The core system supporting judicial cooperation (figure 3) is the secure JCP [6]. It is part of a national ICT judicial infrastructure, connected to the national judicial network via secure and trusted interfaces. It connects the investigating team, the liaison magistrates and, in perspective, the embassies. Different JCPs in different countries may work together during judicial cooperation. The platform, organised on three layers (presentation, business, persistence), supports availability and data security supplying the following main services:

- **Profiling:** user details, user preferences, users roles.
- **Services supplied via Web:**
  - **Collaboration:** collaborative tools so that users can participate and discuss on the judicial cooperation cases.
  - **Workflow Management:** execution of judicial cooperation workflows, including the ones required to set-up judicial cooperation.

- **Audio/Video Management:** real time audio/video streaming of a multimedia file, videoconference support, with the possibility to create direct links with already equipped prisons and prosecutors offices and between the workgroups.
- **Knowledge Management:** documents uploading, indexing, search, exchange.

– **Security and non repudiation:** Biometric authentication, digital certificates, time stamping, digital signature, secure communication, cryptography, role based access control.

3.2 The Secure Judicial Cooperation Workspace and Judicial Cooperation Activities

The **Secure Judicial Cooperation Workspace** (SCJW) is a secure inter-connected environment related to a specific judicial case, in which all entitled judicial participants in dispersed locations can access and interact with each other just as inside a single entity. The environment is supported by secure electronic communications and groupware tools, which enable participants to overcome space and time differentials. From the physical point of view, the workspace is supported by the JCP.

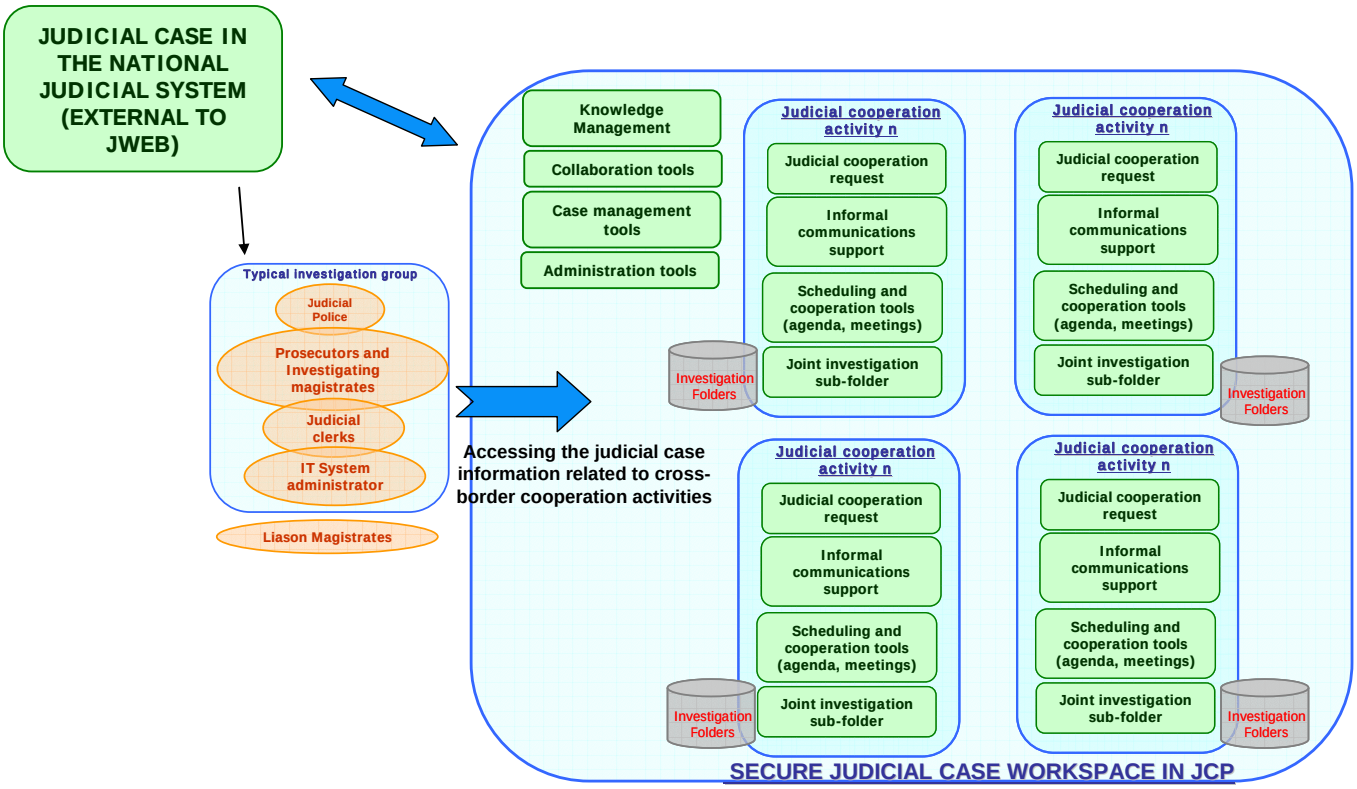


Figure 3. Secure Collaborative Judicial Workspace and Judicial Cooperation Activities.

The SCJW allows the actors to use shared communication and scheduling instruments (agenda, shared data, videoconference, digital signature, document exchange) in a secured environment.

A **Judicial Cooperation Activity** (JCA) is the implementation of a specific judicial cooperation request. It is a self consisting activity, opened inside the SCJW and supported by specific judicial workflows and by the collaboration tools. It fulfils the judicial actions in a single letter of rogatory.

Each SCJW, "owned" by the investigating magistrate in charge of the judicial case, is related to a single judicial case and may contain multiple JCAs, also running in parallel. Each JCA ends when rejected or when all requests contained in the letter of rogatory have been fulfilled and the information collected has been inserted into the target investigation folder, external to the JCP. At that moment the JCA may be archived. The SCJW ends when the investigation phase is concluded.

Each JCA has dedicated temporary repository for the ongoing activities. The permanent archive is outside the JCP, in the judicial ICT national system, where the investigation folders are stored. This is due to security, confidentiality and non repudiation constraints and to the limited lifetime of a JCA. The repository associated to the single JCA contains, from the users perspective:

- JCA judicial information

The documentation produced during the judicial cooperation will be stored in a configurable tree folder structure. Typical contents are:

1) "JCA judicial cooperation request". It contains information related to the judicial cooperation request, including further documents exchanged during the set-up activities.
2) "JCA decisions". It contains the outcomes of the formal process of judicial cooperation and any internal decision relevant to the specific JCA (for example letters of appointments of the magistrate(s), judicial acts authorising interceptions or domicile violation, etc.)
3) "JCA investigation evidences". It contains the documents to be sent/ received:
    a. *Audio/video recordings*, from audio/video conferences and phone interceptions
    b. *Images*. It contains pictures and photos.
    c. *Objects and documents*. It contains text documents and scanned documents.
    d. *Supporting documentation*, not necessarily to be inserted in the investigation folder.

3.3 Connecting and accessing JCPs in a secure way.

SCJW is implemented in a single JCP, while the single JCA is distributed on two JCP connected via secure communication channels, and implemented through a secure collaboration gateway, as showed in figure 4.

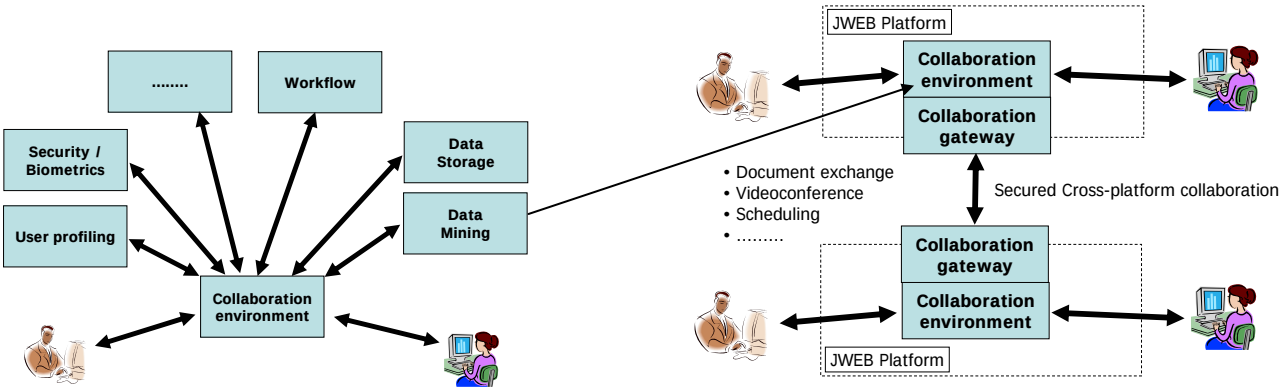


Figure 4. The JCP and different JCPs implementing the Judicial Cooperation Activities.

The concept is showed in figure 5, where two JCP platforms are connected via a set of secure Web Services.

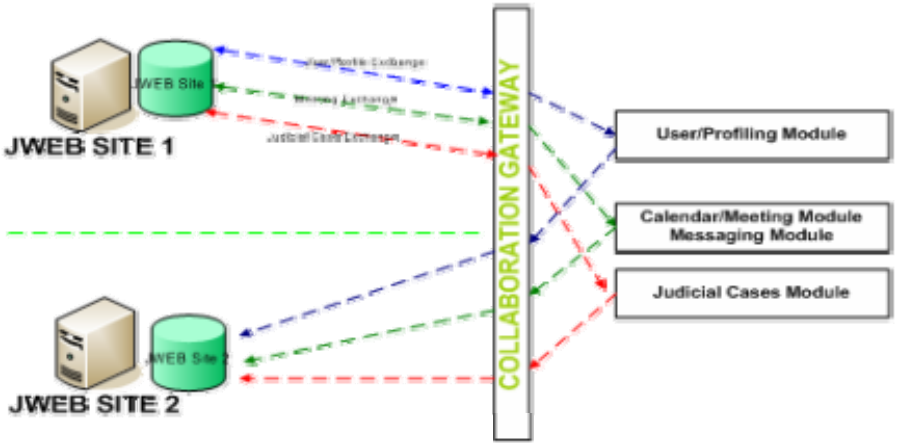


Figure 5. The collaboration gateway architecture

Two different level of security are implemented: the JCP is intrinsically secure and communication between JCPs are made secure, so as to create a trusted virtual space inside the JCP and between JCPs. Security is managed through the Security Module, designed to properly manage Connectivity Domains, to assure access rights to different entities, protecting information and segmenting IP network in secured domains. Any communication is hidden to third parties, protecting privacy, preventing unauthorised usage and assuring data integrity.

JCP access is protected by user authentication by means of his/her X.509v3[9] digital certificate issued by the Certification Authority, stored in his smart card and protected by biometry. Communication with the JCP and between JCPs are via the implementation of Internet Protocol Security (IPSec[10]), through secure channels, called VPN (Virtual Private Network) tunnels, which guarantee the confidentiality of any communication. Data flows may have different levels of encryption.

Only authenticated and pre-registered users and systems can access the JCP; no access is allowed without the credentials given by the PKI (Public Key Infrastructure).

The JCP includes an Access and Network Security System, integrated by the following components:

- Security Access Systems (Crypto-router). Crypto-routers prevent unauthorized intrusions, offers protection against external attacks and tunnelling capabilities and data encryption, providing both Network and Resources Authentication.
- S-VPN clients (Secure Virtual Private Network Client), through which the user can entry in the JCP VPN and so can be authenticated by the Security Access System.
- Access control of judicial actors to JCP functions via biometric authentication (fingerprint) Role-Based Access Control [10] (RBAC). In RBAC, access permissions re associated with roles, and users are made members of appropriate roles. This model simplifies access administration, management, and audit procedures. Examples of roles are “magistrate”, “judicial clerk”, “liaison magistrate”, “videoconference technician”, “ICT administrator”, each of them with specific access permission.

3.4 Documents, information exchange and interoperability in JCP

The JCP is intended mainly as a trustworthy web-based platform supporting a shared workspace (including capabilities for audio/video recordings via videoconference) and a secure exchange of documents and information. It has to support the nearly 300 most common documents and audio/video files formats, giving the possibility to use standard commercial and open source readers and players available on different

[9] International Telecommunication Union http://www.itu.int/ITU-T/asn1/database/itu-t/x/x509/
[10] IPSEC working group at IETF http://www.ietf.org/html.charters/ipsecme-charter.html

operating systems, with support for digital signatures. Documents are both working and legal archives directly connected to the JCA (judicial cooperation request, decisions by the counterpart, the requested evidences, usually scanned documents, textual or audio-video), exchanged between a restricted number of actors, as it usually happens during investigations. Many of them are scanned paper documents.

Key features in JCP are interoperability, the confidentiality of investigation documents and information in the JCAs and non-repudiation of documents, which sets new challenges and constraints regarding format and information retrieval. The search is restricted to authorised operators on the JCAs where they are entitled to have access. This is limited according to the role of the person seeking for information. Metadata and XML files generated by search engines may contain confidential information. This point is still open, and the usefulness of a fully semantic search engine in JCP is under discussion.

Relevant initiatives related to JCP interoperability are the European Metalex[11], the OJP Information Technology Initiatives[12] by the United States Department of Justice and the related National Information Exchange Model (NIEM), based on the Global Justice XML Data Model (GJXDM), and the Judicial Reference Architecture (JRA), based on OASIS SOA (Service Oriented Architecture) Reference model. Widespread adoption of XML and secure SOA architectures are crucial elements in deploying systems for judicial cooperation. Adoption of SOA is pushed by eGovernment initiatives. JCP collaboration environment benefits from the experiences of several eGovernment projects, including Terregov[13] project, and secure SOA and SOAP messaging constitute the technical basis of communication between systems.

4 Potential impact of ICT support to judicial cooperation

Judicial cooperation requests issued every year may vary from hundreds in small EU Member States to thousands in the more populated ones, both in terms of active and passive rogatories. Notwithstanding the relatively low number of criminal cases (a little percentage or less) where judicial cooperation is requested, out of the overall number of criminal cases (an average in the EU of about 4,800 criminal offences and 900 convicted persons each 100,000 inhabitants[14]), they are indispensable in most of the major investigations about organised crime, terrorist groups, illegal trafficking, relevant episodes of corruption and fraud, where significant resources of the judicial organisations are spent, with top investigating magistrates engaged, and where the support of the liaison magistrate of Eurojust may be fundamental.

Electronic case management is demonstrating a dramatic reduction of required time in many daily operations through ICT support: a recent paper about UYAP[15] system in Turkey showed how the time required by simple operations such as accession to criminal records or transfer of documents decreased from an average of two weeks to few minutes. Similar data are available in most of EU countries.

Videoconference in courtrooms[16] has been used in Italy and other countries for the last 10 years and a first manual on e-Justice videoconferencing in cross-border judicial activities is likely to be published by the Council of Europe in early 2009. Usage of videoconference in compliance with the “principle of fair trial”, for example for remote interrogations of witnesses, persons under protection and persons in prison, will allow a considerable savings of time also in judicial cooperation activities.

JCP e-services such as secure document transfer, videoconference, information sharing and traceability of judicial cooperation activities, in particular in passive rogatories, will progressively allow considerable savings, similar to the ones achieved with case management systems. These savings are still difficult to be precisely quantified against the actual figures, due to limited existing statistics. These e-services will make the link of the single investigation team with offices in charge of international cooperation, liaison magistrate and the

[11] http://www.metalex.eu/
[12] http://it.ojp.gov/index.jsp
[13] http://www.terregov.eupm.net/my_spip/index.php
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Ministry of Foreigner Affairs more effective. They will reduce the existing inefficiencies, mainly due to complex procedures not supported by straightforward communication channels, and shorten the duration of investigations and of criminal cases, one of the main objectives of e-Justice.

5 Conclusions

The SecurE-Justice and JWeB pilot actions demonstrate how international judicial cooperation may be supported by ICT platforms through the integration of state of the art ICT technologies, connecting and providing e-services first to organisations inside the same country and in perspective connecting together different Member States. All this in total respect with the requirements of security, non repudiation, confidentiality and strong authentication, as well as in full compliance with national judicial procedures and practices.

The economical effort required for infrastructure is quite sustainable, considering that in most EU Member States a very limited number of JCPs, even only one in the small states, may be sufficient to manage the yearly issued or received requests and that the communication environment is the web. Possible failures external to JCPs (such as denial of service attack to telecom operators and web providers) may always be mitigated using disaster recovery strategies.

The progressive adoption of mutual recognition of digital signature and the adoption of an EU-wide recognised standard format for legal document exchange, actually in progress and strongly pushed also by other fields such as e-commerce and e-procurement, will create the basis in the near future for the full exploitation of the JCP as a part of the European Judicial Space.

eGovernment plans and e-Justice initiatives supported by the European Commission and by the national governments create a very favourable background to the adoption of ICT support and standards in the area of cross-border judicial cooperation, both in the Member States and in the pre-Accession countries. CARDS and IPA funds represent today a relevant financial support to regional development in Western Balkans, including Justice as one of the key factors. This creates a strong EU support to JCP deployment, while projects such as JWeB and SICP demonstrated that electronic case management is now ready for a complete deployment.

A judicial secure collaboration environment will be the basis for future trans-national cooperation, and systems such as the JCP may lead to a considerable enhancement of cross-border judicial cooperation. While technologies are mature and ready to be used, their impact on the judicial organisations in cross-border cooperation is still under analysis. It is one of the main non technological challenges for deployment of solutions such as the one under development in the JWeB project. The analysis conducted so far in the JWeB project gives a reasonable confidence that required organisational changes will become fully evident through the pilot usage of the developed ICT solutions, hence contributing further to the Ministries of Justice work enhancement by allowing the full electronic management of activities in a delicate area such as the one of the international judicial cooperation.

Uptake of the pilot experience can be done progressively in the different judicial systems: starting at national level first, by integrating vertically, in a common workspace, the activities of each judicial workgroup (investigating magistrates, their assistants, the judicial clerks, the liaison magistrates, the embassies and the liaison magistrates), then extending horizontally the single JCP to cooperation between JCPs in different countries. This approach will help to solve a relevant number of problems posed by legacy systems in force and allow to build up the interconnection layer between different countries, taking into account the upcoming standards for cross-border information exchange, such as the ones of Metalex[17] initiative on an Open XML interchange format for legal and legislative resources and ESTRELLA[18] European Project. The JWeB experience is demonstrating that JCP can contribute to sort out one of the main problems related to security of judicial networks: how to provide services to investigation teams and systems located “outside the national judicial network” without affecting security. This is the case of the ICT platform developed in the EPOC III project led by EUROJUST. Trusted connections included in JCP will allow to close “the last mile” between

[17] http://www.metalex.eu/
[18] http://www.estrellaproject.org/

judicial actors without lowering the level of security of the network and connecting transparently the legacy judicial systems.

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