11 September 2008

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GENERAL REMARKS, DRAFT DOCUMENT AS BASIS FOR EIF 2.0

This opinion is related to a draft document for European Interoperability Framework (EIF), to be precise it is "Draft document as basis for EIF 2.0" [1].

This consultation is an effort to transparency in the European Union.

Just to remind readers about Transparency Initiative [2] and different issues to related to transparency in the European Union, readers should check Transparency Initiative website.

LEGAL STATUS OF THE OPINION

This opinion is an opinion of an individual citizen in the European Union.

This opinion does not represent any legal entity that is based inside or outside the European Union.

DISCLAMERS et. al

Annex 1 holds information of copyright, licence and disclaimer.

Best Regards,

Jukka Rannila
citizen of Finland

signed electronically

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1   Consultation on EIF v2.0, http://ec.europa.eu/idabc/en/document/7733
2   Transparency Initiative: http://ec.europa.eu/transparency/index_en.htm

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11 September 2008

Public / World wide web

Table of Contents

11 September 2008

Preface

First of can be said that construction an opinion to European Interoperability framework demands reading considerable amount documents. As can be seen from IDABC web pages [3] there are reports of many kinds of research and consultation documents. And in the spirit of transparency they are all publicly available.

It is possible to have an opinion based on anything. However I have tried to go through some fo those documents which IDABC has provided to public scrutiny to have an opinion based on facts previously presented.

However we can fist look back the history of computing. Nowadays we can speak history [4] of computing [5] since it is only matter of definition what was the starting point for computerisation in 1900 century.

We can have two central things which are relevant to this opinion: **document** and **database**. As it has been proved in the case of both document [6] (Haigh 2006a) and database [7] (Haigh 2006b) the actual situation is different from the original vision of visionaries.

It seems that every generation will experience at least one or two technological leap in information technology [8] and all buzz and fuzz around that technique. In many of these cases there have been be visions of "paperless office" and "all information of the world". However things evolve and some of the original vision might be reality. On the other hand it has to be noticed that it is not about technology itself changing since it is in many cases about the activities of the people changing.

So it can be said quite safely that in the case of eGovernment there have been visionaries and then it takes some time to realise these visions. And in European Union IDABC is one way of moving forward with these visions.

Amount of Documents

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3   http://ec.europa.eu/idabc/
4   http://www.tomandmaria.com/Tom/Vitae/resume.htm is an example a computing historian and we refer to two of his articles
5   There is always separation of pure technique and the real use of technique. However there is nowadays computer museums – at least in Finland. http://www.tietokonemuseo.saunalahti.fi/
6   In fact it is more about the concept of word processing and its development. But in can said that there is always always document in some meaning in the case of word processing. http://www.tomandmaria.com/Tom/Writing/Annals2006WP.pdf
7   http://www.tomandmaria.com/Tom/Writing/VeritableBucketOfFactsSIGMOD.pdf
8   Even though that term can always be questioned but that is not the point of this opinion.

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11 September 2008

Public / World wide web

When browsing IDABC web pages it can be said that there is a lot of documents.

Also it can be said that Draft document as basis for EIF 2.0 is a large document also.

When looking Reports and Studies section [9] the is links to documentation of different projects and consultations. Sometimes one can get an impression that the amount of documents is overwhelming. Also it can be asked that is the same thing said numerously in different documents.

It came to my mind that <u>is there is possibility to organise the IDABC to chronological order in order to understand what has happened in IDA and IDABC programmes</u>. I suppose that this chronological order of the documents could help understanding IDA and IDABC activities.

Limited View of This Opinion

This opinion will concentrate on some limited issues and is therefore quite limited.

The General Story of Interoperability According to the Author

As can be seen previously mentioned historical articles (Haigh 2006a, 2006b) there are many kind of disparities in IT solutions and it can safely be said that situation is the same nowadays

The story goes usually with the certain pattern. First there is an idea for some certain function that can be done more efficiently with technological measures, e.g. IT. Then there is different solutions for the same problem. Then it can be said that the situation is following with six (6) different solutions and it can be described in the following figure.

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9   http://ec.europa.eu/idabc/en/chapter/5585

11 September 2008

Public / World wide web

As can be seen there is no interoperability since every solution is independent. Then there is some customer feedback since different customers work together and and they have incompatible solutions. And then starts interoperability game. Someone can create interoperability with somebody but not with someone else. In principle it could be so that in the end there is some sort of interoperability with all solutions. This leads to following situation.
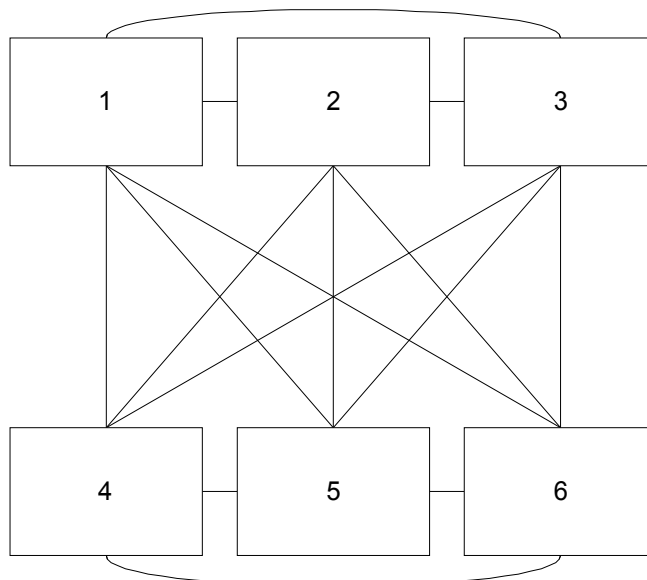
And as can be seen there is now interoperability with all solutions. However this leads quite confusing situations since there these versions in solutions and they change in different time, etc.

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11 September 2008

Public / World wide web

changes. And then there are alliances, commitments, etc. and this [10] can be called "standard war" or "format war". This phase can last certain time until there is clear winner. In some cases the winner is a commercial entity dictating the interoperability solution or it can be solution that nobody actually "own" since it is public property.

Then it is possible that in some point there is so much confusion during the interoperability solution competition phase that somebody has a grand idea. What if there is only one interoperability solution that is the same to all solutions and it is agreed together, huh?

When it all ends in some point we have the following situation.
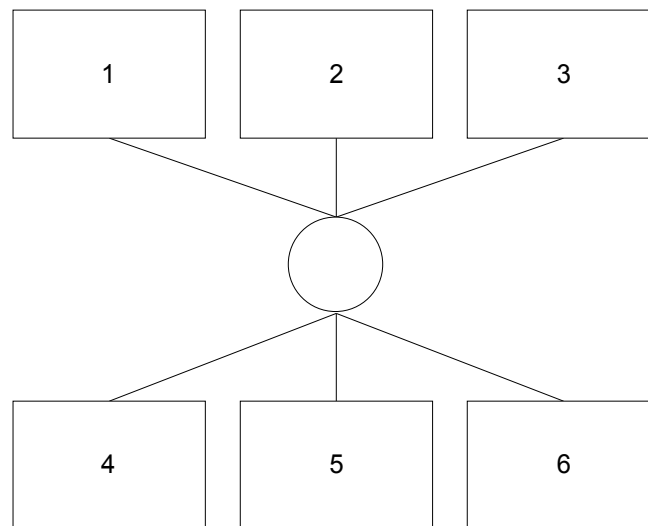
Will technically superior solution win? There is no guarantee that technically superior solution will win the interoperability race which can lead to great frustration among technically oriented people. In commercial terms there is competition and market situation which is not that straightforward all the time. There is always the technological illiterate people and we all are technologically illiterate since there is no person in the world that could handle all possible technologies. Therefore there is always disparities in the commercial side of technology.

In the case of IT there is so much happening all the time and there is lot of "standard wars" raging. There is so many [11] standard setting bodies that following of their activity is demanding task. For the IT solution this means that actually there is lot of interoperabilities to be added during the lifetime of IT solution. This can be described in the following figure.

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10 http://en.wikipedia.org/wiki/Format_war

11 The amount of standardisation bodies in the area IT is considerable, check http://www.consortiuminfo.org/links/

11 September 2008
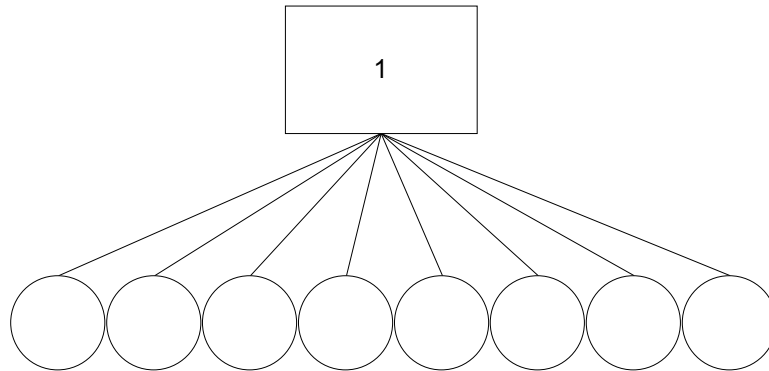
The previous story of interoperability is nothing new for those who have been working years with those issues.

But it can be said that interoperability can be solved with two ways: either receiving and sending **documents** or making questions **database**, i.e. queries. Then there is that bunch of acronyms which is for solving those problems.

When some of the corners are cut to make to story short then can stated that from interoperability solution it is possible to have different kind of interfaces to people using different solutions. This can be presented in the following figure.
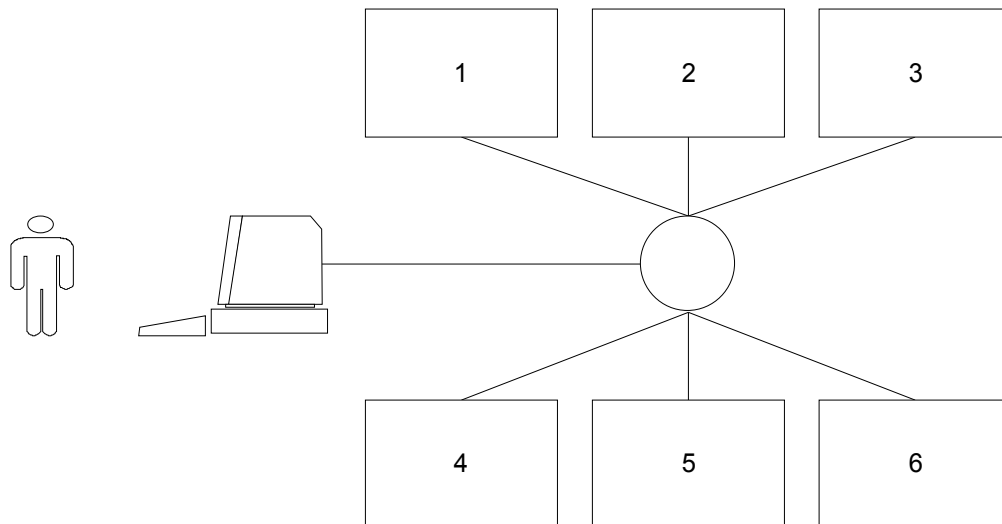
And there it is: a person using a computer that uses an interoperability solution and with this interoperability solution can many other IT solutions be used. Once again technical details and three-letter acronyms hide the simple idea behind. Simple.

And then it again case of either documents or databases. When a person, or citizen, is sending and

receiving something it can be said quite safely that it is either a document or a question to database (a query). And once again the persons can be classified to many levels: user, class A, class B, class C, administrator, main/super/ultimate administrator, etc. and different classes of users which have different rights to use the systems.

In short you can sum up information technology to into following points:
- document, database or combination of document and database
- add data
- retrieve data
- change data
- remove data
- communications protocols of sending data to remote place
- communications protocols of retrieving data from remote place
- users classified to different classes
- administrator of the systems(s).

There is tendency to hide this simplicity of information technology when there is discussion and quarrel about programming languages, communications protocols, data format protocols, ownership of programs, licences, etc. etc.

Problems of Understanding Information Technology Development Processes

Information technology is very tedious demanding lot of understanding different details.

The amount of people to go through tedious task of creating IT standards is quite limited. Computer is not an intelligent [12] in many ways but it can repeat the same functions without limits not getting tired. But to get that repetitive task to be done a computer needs enormous amount of highly detailed instructions. The amount of people capable of handling all details, understanding relations between details and keeping the whole entity working is quite limited.

However to create interoperable IT systems means going through that process of implementing painstakingly very-hard-to-extract details into IT solution and/or extracting details from who-did-this-very-sloppy-ambiguous-text requirements. This process can be be a huge source of frustration to people not-so-detail-oriented if attending that kind of process.

Since the great majority of the people is not-so-detail-oriented and work on overall visions this leads to schism between technique and vision. There are many stereotypes in both sides of these human types and there is not need to go that world of stereotypes and several comics [13]committed to

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12 There is a lot of research which try to create intelligent computers and/or computer systems. There is also problem of defining intelligence.

13 e.g. Dilbert, Bug Bash, Business Casual, http://www.dilbert.com/, http://www.bugbash.net/,

this issue.

It can be said that without technology itself many companies would not sell anything but also without sales there would not be need for developing technology itself.

As some people know the difficult relation between sales and production in some cases leads to open administrative disputes, i.e. turf war.

Keeping vision in context

Now the main question after this establishing visions in technically feasible way. This could be said be keeping vision in context [14] , in this case keeping the vision of pan-European eGoverment in technical, practical, legal, etc. context and finally realising some technically feasible solutions.

In technological terms many IT solutions are possible to build but the main problem is the capability of people to dig in to details. And in some point somebody has to make the final solution of technical detail. In the case of the European Union to make that final decision of some technical detail might take some time since there is lot of layers in administrations in the member states.

To get some standards (not mandatory) to technical regulations (mandatory) could mean streamlining the decision process. This could be done in two ways:

- opening up the decision process
- gathering the industrial opinion faster.

What this means? There is some examples, e.g. Arkesteijn et. al 2004, that feedback from hundreds of people can be gathered faster with the help of IT technology. This could be solved quite easily and once again it can be described with the help of the next figure.

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http://www.businesscasualcomic.com/

14 This leads to certain subtype of computing, i.e. requirements engineering. Extracting technical requirements from the visionaries is not so easy task. "Establishing vision in context" copied from Pohl (1997), ftp://sunsite.informatik.rwth-aachen.de/pub/CREWS/CREWS-96-02.pdf which by the way seems to be a result of EU-funded ESPRIT project.

11 September 2008

Public / World wide web

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┌──────────────┐        ┌──────────────┐        ┌──────────────┐
│  Technical   │───────▶│  Committee   │◀───────│    Other     │
│   problem    │        │   phase 1    │        │   feedback   │
└──────────────┘        └──────┬───────┘        └──────────────┘
                               │
                               ▼
                        ┌──────────────┐
                        │  Document    │
                        │   phase 1    │
                        └──────┬───────┘
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                        ┌──────────────┐        ┌──────────┐        ┌──────────────┐
                        │  IT experts  │◀───────│          │◀───────│   National    │
                        │   round 1    │        │          │        │  IT expert   │
                        └──────┬───────┘        └──────────┘        │ association(s)│
                               │                                    └──────────────┘
                               ▼
                        ┌──────────────┐
                        │  Committee   │
                        │   phase 2    │
                        └──────┬───────┘
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                               ▼
                        ┌──────────────┐
                        │  Document    │
                        │   phase 2    │
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                        │  IT experts  │◀───────│          │◀───────│   National    │
                        │   round 2    │        │          │        │  IT expert   │
                        └──────┬───────┘        └──────────┘        │ association(s)│
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                        │  Committee   │
                        │  DECISION    │
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                        │  Technical   │
                        │  Regulation  │
                        └──────────────┘
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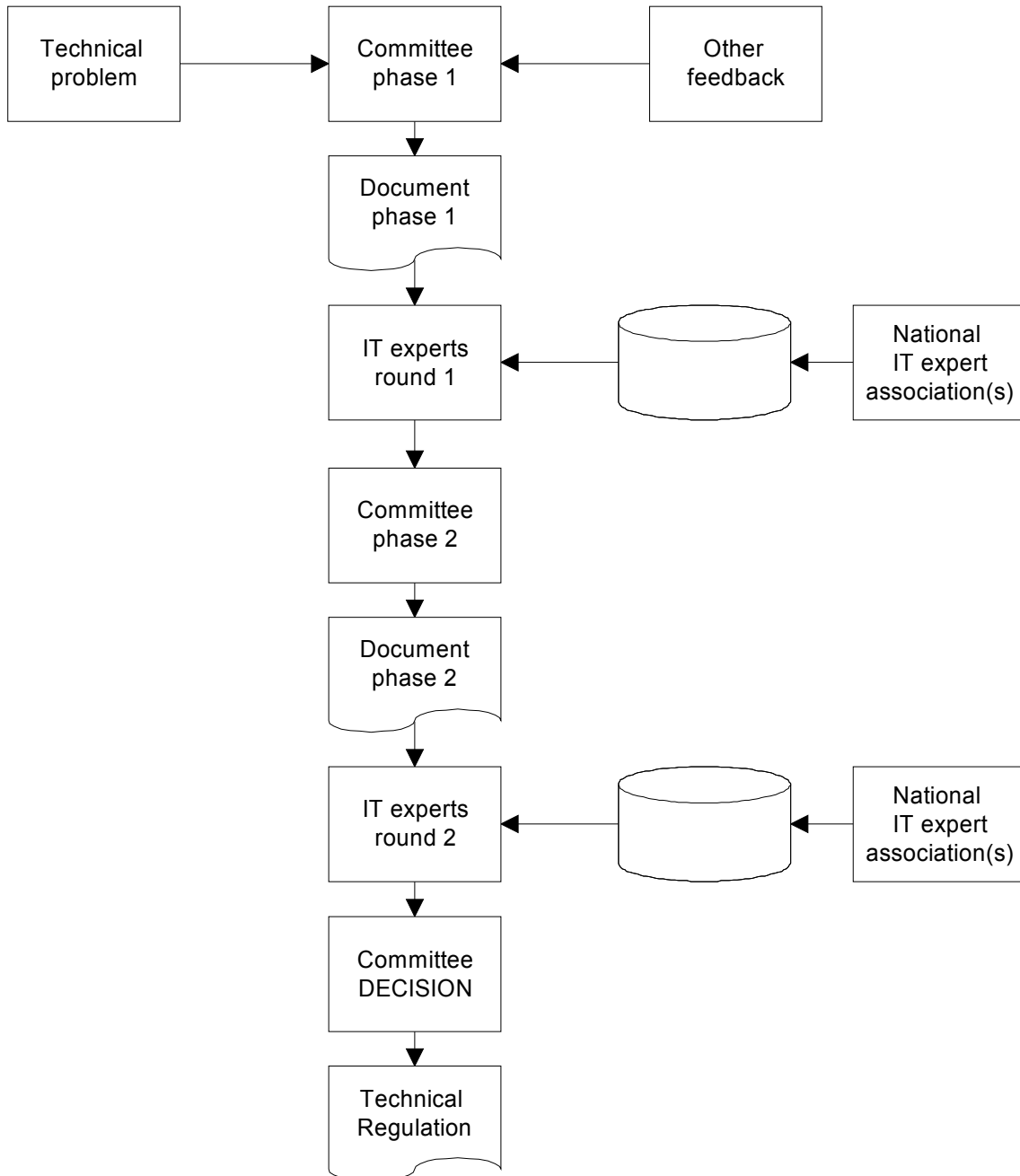
If we now presume that IDABC is a the committee in responsible for European Interoperability Framework it has to collect all kind of feedback and also try to follow technical problems and possible solutions. In this committee phase 1 IDABC could create initial proposal for something and create a **structured** questionnaire [15] to be distributed to the members of national IT expert

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15 This kind of procedure has been done at least once in the case of ACM. Association for Computing Machinery, ACM, http://www.acm.org/

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associations [16]. There is of course the problem of creating a database of respondents but this matter of technical solution and collecting [17] respondents contact details. Since this is about IT solutions it can be said that contact details are electronic contact details. However there is question of personal data protection and getting permissions to use contact details to IDABC questionnaires. We presume that these questions can be solved and we can move forward.

It can be said that not all IT experts will answer to these questionnaires. However we can presume that many IT experts are concerned about government IT procurement costs since they are taxpayers and there could be interest to answer to questions concerning government IT guidelines. In the current situation it can be said that government entities are in some cases guessing more than doing solutions based on technologically valid information.

The current situation where IDABC is asking opinions from certain companies is of course one solution. But it can be said that those opinions do not represent overall opinion of the IT sector in Europe. And it can be said that many IT organisations are small commercial entities without resources to hire people just to represent opinions in different forums.

However. Like it was previously presented the structured questionnaires with the help of national IT expert associations could alleviate the situation. Probably ICT standardisation will be acronym jungle also in the future. With regular structured questionnaires could the overall situation be evaluated in other way than in conventional committee work. It is quite normal that users and small enterprises are in many cases excluded when creating ICT standards.

Therefore at least searching the possibility for European-wide structured questionnaires with help of national IT expert associations should be at least researched. It is not hard task to consult boards of those associations and ask formal answer.

Keeping interoperability is a never-ending process

What has the previous committee procedure with IT experts to do with European Interoperability Framework

The hard reality is that keeping an IT solution interoperable it means continuous maintenance adding interoperable parts in different time frames.

However in IDABC Content Interoperability Strategy, Working paper (2005) is one thing to be noted.

> 2.5.4 Lessons to be learnt from NCS (Nato Codification System)

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16 For example The Finnish Information Processing Association, FIPA, (Tietotekniikan Liitto ry), http://www.ttlry.fi/in_english/

17 In the case of Finland in the phase of applying there is procedure of asking about the permission of using contact details to marketing and/or research use, in many cases this is procedure.

11 September 2008

> An effective and documented editing process:
>
> AC/135 has defined precisely the process (workflow) through which the NCS can be enriched on request of a representative of one of the Allied Forces. The process defines how requests for extensions are screened against the existing categories defines a balance between the necessary quality to avoid duplication and overlaps. The process control, which ensures that the taxonomy remains consistent, and the necessity to enable modification requests to take into account the evolving needs of the users. The process itself is carefully documented, and this documentation is public, enabling all actors including industrial providers, to understand how they can input editing requests.

As it can be seen it is not forcing and/or shouting orders loudly. It is about efficient decision-making process. Entities can propose, proposals are handled promptly, facts are checked, process is public and finally decision is made without hesitation. That simple is that.

Now in the real life is far from that. The actual process in many organisations is something like this: nobody does not what to propose, there is a fuzz, facts are not known, process is not public and decisions are finally vague recommendations leaving technically oriented entities with maintenance obligations to highly uncertain situation. That chaotic is that.

In the case of IT it can be said that it impossible to have a solution fully ready in one time despite the work which talented people have done. Therefore there has to be efficient decision-making process for IT issues. So it can be said that IDABC should create an efficient decision-making process for developing European Interoperability Framework with following principles:

- – there is free right to propose
- – there is clear and simple process to handle proposals
- – proposals are handled in reasonable time frame
- – process is public
- – decisions are understandable to average person.

If there is no way to ensure that European Interoperability Frameworks interoperability decisions are not binding to certain level it is quite useless to use time for creating vague recommendations. Therefore it should be clarified very clearly what IDABC should and could decide and what is left to member state responsibility. This principle is marked to the documents but the line should be more clear since like mentioned before in IT issues it is about digging in to deep details.

Efficient European Interoperability Decision Making Process (EEIDMS)

It is nice to create acronyms since everybody in the IT sector is using them.

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11 September 2008

Like I have proposed earlier there should be efficient European interoperability decision making process, and lets call it EEIDMS.

Without creating efficient European interoperability decision making process European Interoperability Framework (EIF) version 2 will be just a document without substance.

Like I have proposed earlier national IT experts organisations members should be used efficiently in the decision making process.

Adopting open standards or technical specifications

It is good to remind about what Marrakesh Agreement Establishing the World Trade Organization [18] (WTO [19]) and Annex 4(b) Agreement on Government Procurement [20] says about this.

> Article VI: Technical Specifications
>
> 1. Technical specifications laying down the characteristics of the products or services to be procured, such as quality, performance, safety and dimensions, symbols, terminology, packaging, marking and labelling, or the processes and methods for their production and requirements relating to conformity assessment procedures prescribed by procuring entities, shall not be prepared, adopted or applied with a view to, or with the effect of, creating unnecessary obstacles to international trade.
>
> 2. Technical specifications prescribed by procuring entities shall, where appropriate:
>
> > (a) be in terms of performance rather than design or descriptive characteristics; and
> > (b) be based on international standards, where such exist; otherwise, on national technical regulations(footnote 3), recognized national standards (footnote 4), or building codes.
> >
> > > (footnote original) 3 For the purpose of this Agreement, a technical regulation is a document which lays down characteristics of a product or a service or their related processes and production methods, including the applicable administrative provisions, with which compliance is mandatory. It may also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a product, service, process or production method.
> > >
> > > (footnote original) 4 For the purpose of this Agreement, a standard is a

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18 http://www.wto.org/english/docs_e/legal_e/04-wto_e.htm
19 http://www.wto.org/
20 http://www.wto.org/english/docs_e/legal_e/gpr-94_01_e.htm

document approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for products or services or related processes and production methods, with which compliance is not mandatory. It may also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a product, service, process or production method.

3. There shall be no requirement or reference to a particular trademark or trade name, patent, design or type, specific origin, producer or supplier, unless there is no sufficiently precise or intelligible way of describing the procurement requirements and provided that words such as "or equivalent" are included in the tender documentation.

4. Entities shall not seek or accept, in a manner which would have the effect of precluding competition, advice which may be used in the preparation of specifications for a specific procurement from a firm that may have a commercial interest in the procurement.

Therefore it is totally understandable that in the chapter 8 "Adopt Open Standards or Technical Specifications " there is explanation of difference between standard and technical specification.

When looking through chapter 8 (Draft document as basis for EIF 2.0) it can be concluded that there is a lot of good proposals to take advantages of open standards and open technical specifications.

<u>I only stress that difference between open standards and open specifications should be communicated in when dealing with European Interoperability Framework. A general IT expert does not know the legal difference between open standard and open technical specification.</u>

Efficient European Open Interoperability Standards and Technical Interoperability Specifications Selection Process (EEOISTSSP)

It is nice to create acronyms since everybody in the IT sector is using them.

In the case of selecting open interoperability standards and open interoperability specifications there should be also efficient decision making process, and lets call it EEOISTSSP (Efficient European Open Interoperability Standards and Technical Interoperability Specifications Selection Process).

<u>Without creating efficient European open interoperability standards and technical interoperability specifications selection process European Interoperability Framework (EIF) version 2 will be just a document without substance.</u>

Like I have proposed earlier national IT experts organisations members should be used efficiently in

11 September 2008

also in the selection process of interoperability standards and interoperability technical specifications.

Using Open Source Software and Developing Open Source Software

When looking through chapter 9 (Draft document as basis for EIF 2.0) it can be concluded that there is a lot of good proposals to take advantages of open source software and developing open source software.

Many of the recommendations in the chapter 9 can be supported.

Once again I stress the decision making process, in this case decision making related to open source software.

Without creating efficient European open source software selection process European Interoperability Framework (EIF) version 2 will be just a document without substance.

Like I have previously noted national IT expert organisations could be used also in this case.

Taking More Active and Coherent Stance Related to Open Source Development Processes

Prologue

I have been disturbed by the fact that public sector would just "use" some open source software. Taking account of special characteristics of the public sector it can not be the case.

Previously I mentioned about efficient open source software selection process.

I have been in some seminars and there has been nice presentations about open source software in general and also open source software in the public sector also.

I have been wondering that could this kind of model for public sector be possible:
- definition of the specific need to be solved with a computer-based solution
- national defence policy analysis of the possible computer-based solution
- requirement analysis of the possible computer-based solution
- analysis of the European need for the possible computer-based solution
- decision of the European-wide solution
- technical analysis for the possible computer-based solution using national IT

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expert organisations (like proposed earlier in the decision making processes)
–   analysis of the current open source solutions for the possible computer-based solution
–   project proposal with some of the possibilities: A) straightforward usage of certain open source software, B) modification of certain open source software, C) creating an organisation to create certain open source software
–   procurement and gathering responsible persons to the information technology project itself
–   the information technology project itself, option 1, 2 or 3 in the mentioned previous phase
–   pilot project(s) using the created open source software solution
–   further modification etc. to the created open source software
–   final project to install the created open source software to the desired usage
–   creating maintenance regime
–   maintenance
–   possibly a new modification program, i.e. going back to the first phase

What I mean with this phase division? Lets go through this step by step.

Definition of the specific need to be solved with a computer-based solution

This is of very crucial phase since there must be a real problem that can be solved using computer-based solutions.

It should be stressed that too often a computer-based solution is selected without thoroughly going through working environment in the proposed usage area. So one point is of course to really have a a real understanding about the real problem.

National defence policy analysis of the possible computer-based solution

I am not expert in this issue but in some cases there is need to have totally national solution for some defence policy related reasons.

Of course it can be said that member states of the EU can use defence policy needs as on excuse to not have European-wide solutions. In this case we suppose that there is not that kind of situation.

We suppose that in this case national departments of defence have no reasons to oppose proposed computer-based solution.

Requirement analysis of the possible computer-based solution

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11 September 2008

This can be done in many ways. I have not mentioned before the vast variety of different competing systems development ideologies.

We have to suppose that some person(s) make this analysis and they represent the analysis in some informal or formal way depending on their school of thought about system development.

The probable situation then leads that there has to be adequate time frame that responsible persons around the European Union can translate both the ordinary linguistic text and the foundational ideas of the presentation style in the requirement analysis.

In this case I suppose that requirement analysis is most cases highly detailed and very technical.

Analysis of the European need for the possible computer-based solution

Some ideas about computer-based solutions might not be totally European-wide.

Creating computer-based systems is very risky business. There are many reasons why IT projects fail and it has been an issue to many articles. Therefore there has to be very good reasons to have European-wide information systems in all cases, either open source or closed source.

This analysis of European-wide need for certain computer-based solution should be thorough enough.

Without creating efficient decision making process European Interoperability Framework (EIF) version 2 will be just a document without substance.

Decision of the European-wide solution

The decision must be a **decision**, not a wish, a thought, an inspiration, an analysis, a promise or some other vague term.

In many cases it sometimes hard to see if there is a decision or if there is not a decision about a computer-based system.

Technical analysis for the possible computer-based solution using national IT expert organisations (like proposed earlier in the decision making processes)

Once again I propose that national IT expert organisations could be used in this phase.

The hard reality is that IT solutions in European Union members states is a big mess.

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11 September 2008

It would be nice to say that creation of IT solutions in European Union members states has been a well structured process. If it had been a well structured and informed process why we have these totally hard-bolted legacy systems creating huge problems in every member state?

It would also be nice to say that somebody understands totally the IT field. In reality there is no single person that could totally understand all aspects of the IT field. Therefore there should be more open analysis when dealing with technical aspects for proposed computer-based solution.

Analysis of the current open source solutions for the possible computer-based solution

In reality it might be hard to separate technical analysis phase from this phase.

It would nice to say that there is always a suitable open source solution waiting for usage. That is not always the case. It would also be nice to say that open source development is structured, well-designed and rational. That is not always the case.

There is many different points to analyse when looking for ready-made open source solutions. After some thoughts I remembered something:
- amount of the source code of the specific open source software solution
- quality of the source code of the specific open source software solution
- amount of persons involved in the development of the specific open source software solution
- amount of services provided for the specific open source software solution

There is not a clear guideline for the amount of the source code. It depends of the solution and the application area of the solution.

There are many schools of thoughts in the software development area. The problem in general is that creation of software is not a natural science, it is designing and implementing. Some persons see programming as artistic impression and some persons see programming as factory work.

In the case of source code quality it must remembered that public sector solutions might be in use long after first real implementations in real usage environment. It is quite clear that critical public sector systems can not be based on unclear source code that is written by one person who has no interest to maintain source code any more.

Amount of persons is interesting question. I have the impression that open source software in most cases can be separated to different modules. Then different modules have a certain number of persons involved. In this way possibly tens, dozens, hundreds or thousands developers can be organised to common cause.

So there is not clear guideline for assessing right amount of persons involved.

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11 September 2008

In most cases software maintenance is the most labour intensive phase of software development. It can be said that maintaining software demands specific attitude since it is not always so pleasant job; one have to be always be prepared for the worst and one has continuously implement new safeguards for the found loopholes. We come to this in the next phase.

Project proposal with some of the possibilities: A) straightforward usage of certain open source software, B) modification of certain open source software, C) establishing an organisation to create certain open source software

A) straightforward usage of certain open source software
In some cases selection of open source software might be simple usage.

In this case maintaining software for public sector might mean being a sponsor for a specific open source development community. In many cases sponsoring a specific open source development community means paying reasonable fees for public sector.

It should be noted that open source software development is not absolutely free from monetary constraints.

To my mind especially in very generic applications it might be hard to say who is maintaining what because of the large amount of developers. In these case sponsoring is very good way of supporting maintenance of the software.

It should be also noted that public sector sponsoring is highly valued in many open source development communities. This is not because of the amount of the money but because of the good-will to the open source development community.

B) modification of certain open source software

There is one way to quickly empty a room of seasoned IT experts. Just say something like this: "these separate systems should be modified to be interoperable".

Creating interoperability between separate computer-based systems can be a doomsday project.

The hard reality is that sometimes there is no interoperability between some open source software solutions. Of course there are different alliances, associations, foundations, etc. but they always are combination of certain persons and legal entities.

There is no centre of command in open source software development communities. Sometimes people tend to think that open source development is commanded from some command bunker.

In the case of modification of open source project there has to be the same level of preparations as

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11 September 2008

in the commercial software procurement for public sector. The details of the preparation are of course different in some respect in the open source modification project.

In short this can mean 1) employing personnel, 2) public tender or 3) both.

C) establishing an organisation to create certain open source software

Public sector has always a possibility to establish some sort of legal entity. In the case of European-wide computer-based systems this can mean a large administrative exercise.

In some cases the wanted European-wide computer-based system really means that there has to be maintenance workforce provided by an European legal entity.

Despite maintenance workforce provided by an European legal entity the open source software development itself can be done with normal open source development practices. In practice this maintenance can mean only that some developer(s) has an email address that is related to an European legal entity.

In some cases there can be establishment of an European or usage of an European legal entity that creates an open source software from the beginning. In these cases there is open invitation to everybody but public sector provides much of the workforce and development ideas.

Procurement and gathering responsible persons to the information technology project itself

After deciding the legal framework for the modification and/or development and/or maintenance of the specific open source software there is need for committed workforce.

In some cases normal software development procurement, i.e. public tender might be the best way. There are certain mindset in the "normal" software development procurement.

> Commercial entities can have a mindset that they have to "own" the software.
> Public sector entities can have a mindset that they have to "buy" the software.
> Legal experts can have a mindset that they have to "negotiate" the procurement contract.

The difference with open source software procurement would mean something different.

> Commercial entities has to have a mindset to "excel" to the other open source software developers in the open source software development process.
> Commercial entities has to have a mindset to "give" to the open source software development community.
> Public sector entities have a mindset that they have to "invite" commercial entities into the specific open source software development community.
> Legal experts have a mindset that they have to "mediate" the open source software

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development process .

In practise it might be hard to understand for a commercial software company that they are a certain period involved in a software project, they would not own the software created in the project and then they throw the resulted software code into the wild.

In practise it might be hard to understand for a public sector representatives that they invite a commercial company to modify a piece of software and then they throw the resulted software code into the wild.

Like it was mentioned in previous phases public sector has to think the legal framework and/or practical organisation issues.

Pilot project(s) using the created open source software solution

It would be nice to say that open source software would be easier to use. This is not the case since there are and will be very complicated open source software solutions.

Like in the commercial closed source software there should be pilot projects to find the possible weaknesses in the solution and find possible defects.

In short this phase is quite similar to other software projects.

Further modification etc. to the created open source software

In some cases there can be difference between opinions between public sector representatives and other persons in the open source software development community.

There are some legal constraints, certain duties, etc. for public sector and sometimes these are not well understood in software development.

In some cases this means that these has to be some modifications to the mainstream open source software solution.

If these modifications are done there has to be guarantees that there is some sort of maintenance regime to maintain these modification. Public sector can not just trust good luck that somebody without naming this somebody in person will take care of this maintenance.

Final project to install the created open source software to the desired usage

Installing and ramping up a computer-based system can take months.

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Therefore there has to be enough workforce to really doing this phase.

Creating maintenance regime

Like it was mentioned before being a sponsor in some open source software development community can be enough in some cases.

In some cases there has to be really real persons in charge continuously.

In some open source software development community there is possibility to buy some working time for developers. This means that a hired developer will create modifications for a customer and the modified software code is later released to other developers. This can mean that there is person(s) responsible for procuring these modifications.

In some cases there can be hired workforce in public sector. In practice they are part of the open source software development community but they are maintaining some computer-based system(s) during normal development.

And then there is also possibility that there is procurement for commercial companies to do some software modifications that are later released to the other developers in the open source software development community.

It would be nice to think that there is no need to maintaining software. In practice maintenance of the software can be the most labour-intensive part in the life-cycle for a certain software solution.

If there is no maintenance regime for a certain software solution there will be a doomsday situation in some point of the solutions life-cycle.

Maintenance

This phase means that there is really practices that keep the maintenance workforce in work and changes in the workforce is handled reasonably.

In practice there has to be some systems that eliminate situation where there is no maintenance workforce.

Like said before there is several possibilities: 1) general support for a certain community 2) hiring own workforce 3) continuous public procurement for defined maintenance projects.

Possibly a new modification program, i.e. going back to the first phase

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11 September 2008

It is quite normal that after longer period of maintenance there is need for totally new solution for certain modules in the software.

In the case of open source software this situation is handled differently than in commercial software. In this document there is no detailed answer but in general this means having good relations to certain open source software development community. Without reasonable commitment to the community nobody will listen.

Epilogue

I have been disturbed by the fact that public sector would just "use" some open source software. Taking account of special characteristics of the public sector it can not be the case.

I have detailed in this chapter my ideas of procuring open source software to the public sector.

Some general notes of using national IT experts associations

Previously there has been many proposals of using national IT experts associations.

It should be noted that there should not be questionnaires every day and not even every month.

Therefore there should be coherent decision process for designing these questionnaires. As an example can be said that well-done questionnaires for general public are not made in one day.

I have supposed that many IT experts are concerned citizen that want public sector financial resources to be used as efficiently as possible. Therefore I suppose that there will be enough answers to the questionnaires in order to have some real advice to the public sector IT systems selection, development and procurement.

Remarks About Simplicity

This document did not adhere much about commercial public procurement. I have supposed that commercial public procurement is more known to other persons and they will provide some good ideas to advance and develop commercial public procurement.

It is still good to remind that generally speaking IT solutions have some main solutions: **document, database or in some cases a combination**.

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11 September 2008

In short you can sum up information technology to into following points:
- – document, database or combination of document and database
- – add data
- – retrieve data
- – change data
- – remove data
- – communications protocols of sending data to remote place
- – communications protocols of retrieving data from remote place
- – users classified to different classes
- – administrator of the systems(s).

I would as last words stress simplicity in the European Interoperability Framework version 2. Most probably the European Interoperability Framework version 2 will lead to other documents, for example:
- – well documented technical specifications and open standards
- – proposals European-wide public sector services
- – proposals for creating European-wide public sector information systems
- – etc.

In all cases there should be simplicity and clear language.

Final Remarks

Hopefully this opinion will give some ideas to development of the European Interoperability Framework version 2.

With kind regards,

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citizen of Finland

signed electronically

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11 September 2008

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21 Based on the Finnish three-party system there is phenomenon called extreme-centre in Finland.

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