

# Open Source

Evaluating Open Source in Government:

Methodological considerations in strategizing the use of open source in the Public Sector

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# Shot bio

## Family and education

- 2 kids and a wife (legal advisor – Ministry of Immigration)
- Master of Economics from the University of Aarhus.
- Ministry of Education (1996 – 1998) – Head of Section
- Ministry of Science (1998 – 2000) – Head of Section.
- Computer Science Corporation [CSC] (2000-2004) – Account Manager/Innovation Manager.
- Unisys (2004 - 2005) Director, Nordic, Business Development
- Unisys (2005 - ) Director, Continental Europe, Global Public Sector, Marketing & Communication
  
- He has the responsibility for innovating the way the Public Sector Practices act towards Public Sector clients and has the responsibility for helping clients to think innovative and evaluate new technology as well as being the prime spokesperson in the Nordics.

## Experience

- Specialist in Governments of the Nordic/Continental Europe with great insight in the challenges and solutions offered in this the most digitized areas in the World.
- Vice chair of the European IT-security agency, ENISA, working group on "Awareness Raising"
- Steering committee member "Netsafe Now"
- Planning member of The Danish Board of Technology IT-security expert group and expert group on RFID.
- Recently I have been appointed member of the IT-security panel, which guides the Danish Minister of Technology on IT-security issues.
- Key Note Speaker at IDC's eGovernment conference in Rome 2004
- Holds a position in the Danish Open Source Vendors Organisation ([www.osl.dk](http://www.osl.dk)) and has been expert member in the Danish evaluation of "Software at the Desktop" which examined guidelines for use of Open Source vs. traditional software, which I also has researched in.
- Will appear with a chapter in a book on Open Source with the title: "Evaluating Open Source in Government" late 2006.

# Agenda

- Unisys and OSS
- Public Sector and OSS
- How should PSI's choose between trad. software and OSS?
- Evaluation model.

## Unisys and OSS



## Unisys and Open Source ?



- Early days: Own operating systems on own hardware.
- → 2004 Public perception of an exclusive alliance with Microsoft
- 2005 Linux supported on ES7000 – Open source becomes one of our 5 key identified growth areas.
- 2006 Documentation and 3DVE artefacts on Open Source – ie. Open Source reflected in our holistic methodology
- 2000 A first “Study into the Use of OSS in public sector won (delivered 2001)
- 2002 A second study on the feasibility of “Pooling Open Source Software” between public administrations won.
- 2004 2 year content providing mission “Open Source Observatory” won (news, events, case studies, inventory)
- 2005 First 100% open source Web Portal and CMS
- 2006 Impact assessment study (what if... public administration distributes software under OSS licences?) won
- 2006 Waiting for EU decision in larger OSS bid: create a Web software repository for Public Sector (OSOR)

## Details on Unisys (EU) OSS activities (1)

<p>Study into the use of Open source Software in public sector (2000-2001)            For this first study, our practice created an “Open Source” think tank in 2000 already, demonstrating the Unisys long term interest for the open source movement.</p>	<p><a href="http://europa.eu.int/idabc/en/document/2623#study">http://europa.eu.int/idabc/en/document/2623#study</a></p>
<p>Pooling Open source Software            (This study done in 2002 develops a roadmap for public sector software sharing). At the time of publication, it was the most downloaded document from the EU Commission Web site.</p>	<p><a href="http://europa.eu.int/idabc/en/document/2623#feasibility">http://europa.eu.int/idabc/en/document/2623#feasibility</a></p>
<p>Open Source Licensing of software developed by The European Commission.            A legal study on the best licensing conditions, from the European Union point of view (as Licensor)</p>	<p><a href="http://europa.eu.int/idabc/en/document/3879/471">http://europa.eu.int/idabc/en/document/3879/471</a></p>
<p>The Open Source Observatory:            An inventory of existing software, news and case studies related to the use of Open Source Software (mainly by administrations) inside EU</p>	<p><a href="http://europa.eu.int/idabc/oso">http://europa.eu.int/idabc/oso</a>            The OSO web site content was managed by Unisys (2 years mission 2004-2005)</p>
<p>Guidelines for public sector when collaborating with Open source communities.            A 2004 expert report to help administrations (or large enterprises) to obtain support from the Open source / free software movement (in collaboration with MERIT)</p>	<p><a href="http://europa.eu.int/idabc/en/document/3879/471">http://europa.eu.int/idabc/en/document/3879/471</a></p>

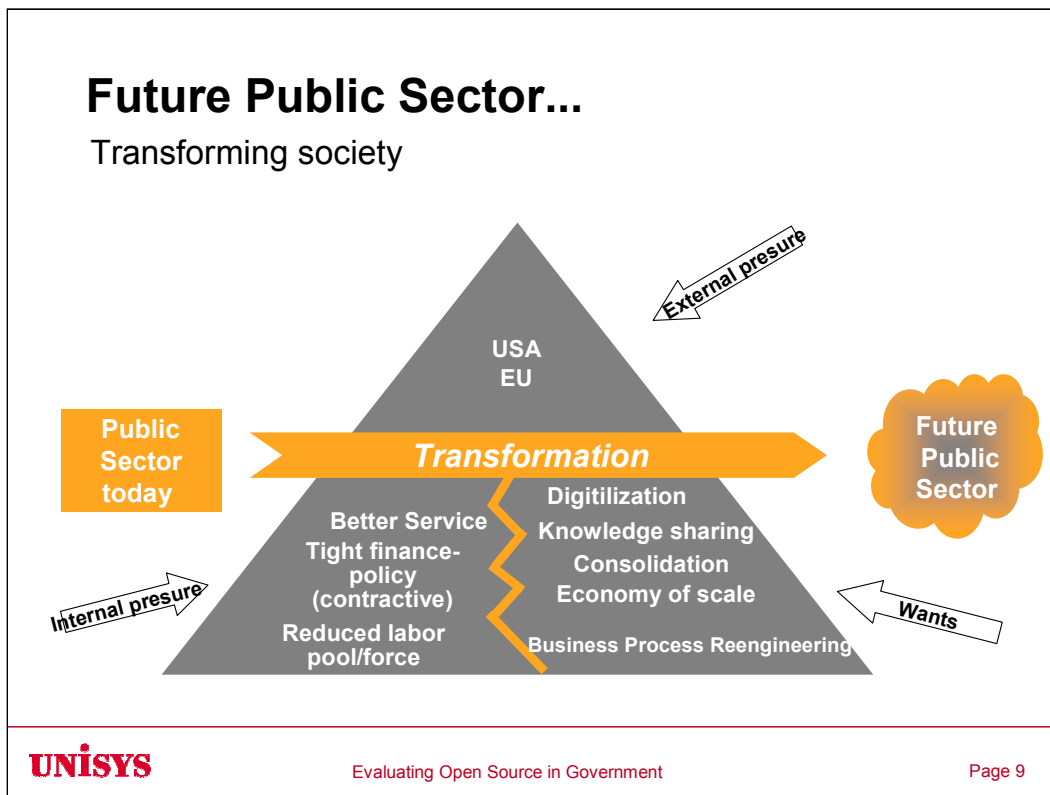
## Details on Unisys (EU) OSS activities (2)

<p>The new European Union Public License (EURL) – an open source license adapted to the EU legal framework Produced in 2005, this is the draft of the first OSS licence done for the European Union (should be adopted in 2006)</p>	<p><a href="http://europa.eu.int/idabc/en/document/2623/5585#eupl">http://europa.eu.int/idabc/en/document/2623/5585#eupl</a></p>
<p>Patents and Open Source software A 2005 expert report on the treats represented by patents (in collaboration with MERIT)</p>	<p><a href="http://europa.eu.int/idabc/en/document/3879/471">http://europa.eu.int/idabc/en/document/3879/471</a></p>
<p>European Biometrics Portal (EBP) This is a 100% open source development, illustrating the possibility to deliver an efficient low cost web portal coupled with a database and content management system.</p>	<p><a href="http://www.europeanbiometrics.info">http://www.europeanbiometrics.info</a> To see the open source architecture, open the "About EBP" page (and go to the technical characteristics at the bottom)</p>
<p>Study on the effect on the development of the Information society of European public bodies making their own software available as Open Source. With this 2006 study, the European commission will be informed on the impact of OSS on enterprises business model.</p>	<p><a href="http://www.publicsectoross.info">http://www.publicsectoross.info</a> This study is still "on going" and will be terminated in December 2006. The Web site uses the same technology as the EBP Event: Brussels, 28 November 2006</p>
<p>Unisys participates yearly as speaker and chairing sessions to European IDABC workshops dedicated on Open Source (2001, 2002, 2004, 2005, 2006)</p>	<p>Last event: 2006 OSS Workshop (Prague – CZ Republic) <a href="http://europa.eu.int/idabc/en/document/5399">http://europa.eu.int/idabc/en/document/5399</a></p>

## Public Sector and OSS







### Globalization:

To understand why open source could be interesting for Governments and PSI's, one needs to look at the globalization currently evolving. The waves of globalization have made people and governments in the industrialized world uneasy about future growth and employment – due to the fact that countries like India and China propose better “value for money”

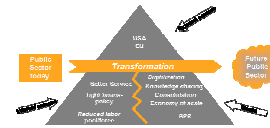
Under the industrialization, people was the workforce asset – not their knowledge. The knowledge was concentrated on the few. Then came the transformation to the knowledge society – the every day worker was the holder of the company knowledge; when people left the company they took the knowledge with them. These knowledge workers created domains - not communities – the company knowledge dispersed in individuals.

What we are claiming are that introducing digitalization of knowledge removes the need for the individual as such – instead of “I know what I know” it becomes “When I know, you know” as information always are stored and retrieved digitally.

### Creating a digitized service society:

Furthermore from the past 30 years of comprehensive computerization together with the current digitalization and automation, the service-oriented and information-based society – “the digital service” society – will emerge. This represents a historically distinctive and rapid transformation from industrialization through the knowledge-society towards the digital service society, which will have great future implications.

# What is underlining the transformation of PS business?



- **Represent the value utilization of the Internet.**
  - The Industry Society (yesterday) was characterized by the few owning both IP and production tools – humans utilized brawn more than brain.
  - The knowledge society (today) was/is characterized by the knowledge stored in individual – corporate capital left the company every day. That why focus has been on “Knowledge sharing” as a mean to collect corporate knowledge.
  - The digitized service society (tomorrow) is the combination of the knowledgeable worker and the Internet. Knowledge is not longer analog (tied to individual) but are shared digitally – enabling multiple value add simultaneously – via the Internet.
- So - in the future, the collaborative use of Internet technology that is behind OSS will impact every part of our society.
- **In fact: OSS is a new business model; people believes that with collaboration and knowledge sharing digitally will create a better society and enable a service model that create profits.**

# What is the Public Sector Open Source Business Drivers?

- Security For The Enterprise
- Choices Of Best Solutions
- Large Bases Of Trained IT Staff
- Low Barrier To Entry
- Reducing Dependence of Specific Vendors
- Time To Market, Quality And Reliability
- Impact On Local Economy
- Rapid Growth Of Public Sector Open Source Repositories
- Governments Are Strengthening The Open Source Ecosystem
- Internet

**These drivers and their impact on Public Sector Business Processes are to be analyzed in a forthcoming white paper from Unisys: "The Impact of Open Source on Public Sector Business Processes"**

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**We could call these trends but I choose to call them public sector business Drivers.**

## **Security For the Enterprise**

Open source projects inherently offer a higher degree of security for your investment. Security in terms of faster enhancement and defect resolution, levels of operational control over your investment that almost certainly can't be achieved by even the most responsive proprietary vendor. The combination of source code accessibility and the leverage associated with the large numbers users and developers, using and testing the software, are critical differentiators. Collaboration, peer review, and rapid feedback are enabled in global real time through the open source development model. Considered together, these factors provide for a secure enterprise that cannot be achieved with a proprietary vendor approach. Open Source is a consensus-based software lifecycle process. It's the peak of the democratic process.

## **Choices for best solutions**

Open source is typically closely aligned with Open Standards to enable interchangeability, thus providing an attractive degree of flexibility to end users trying to avoid vendor lock-in and be positioned to always choose the best solution. OpenOffice for instance uses the OASIS OpenDocument XML format as its default file format. **The OpenDocument format is a vendor and implementation independent file format, and thus guarantees freedom and independence.** The OpenDocument file format is also one of the file formats recommended by the European Commission.

Access to source code allows IT departments with the necessary expertise, the flexibility to enhance its applications and fix defects on shorter time scales. The ability to customize code to meet specific requirements is a key motivating factor and primary reason the Federal Government is rapidly adopting open source. Just last week I sat in on a presentation from a DISA architect who told us an entire battleship is going to be fully operated with Open Source software for that reason.

## **Large bases of trained IT Staff.**

Lost intellectual capital from retiring workers in service positions as well as retiring programmers and other IT staff can often be a major issue for government organizations, whose employee demographics typically show an older workforce. Open Source projects are noted for their broad community of developer resources from around the world. These large, trained user bases, provide government organizations an approach and vehicle for human capital management

## **Low barrier to entry**

Open source allows Public sector entities the opportunity to experiment with and deploy technology that meets their functional criteria where it may not have been feasible if developers had to go through normal budgetary processes with traditional software licensing costs. Although this can lead to governance problems, it reduces the strain on IT budgets that sometimes prevents new and necessary projects from progressing beyond the planning stage.

## **Reducing Dependence on Specific Vendors**

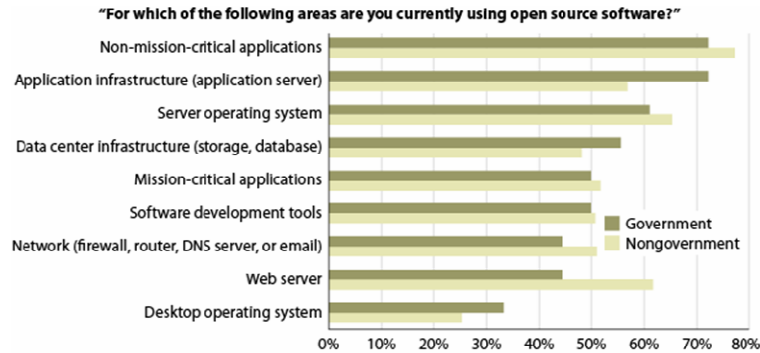
The growing interest in the use of open source across the entire software stack is a way of addressing how to reduce the public sector's dependence on specific vendors

# Governments leads on use of OSS



January 2006, Trends "Government IT Follows Software Trends, But Legacy Issues Continue To Slow Progress"

## Government Versus Nongovernment Open Source Usage



Base: 311 nongovernment IT decision-makers and 18 IT decision-makers at government agencies

Source: Forrester's Business Technographics® November 2005 North American And European Enterprise Software And Services Survey

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Important: This figure stresses why governments have to consider what kind of software to use – see the difference between "non-critical" and "critical".

Just some recent stats from Forrester on Open Source Usage at end of 2005.

Notice that Open Source software is highly utilized Server side in the public sector

50% of mission Critical Applications

Greater than 60% in Server Operating Systems,

70% Application Servers

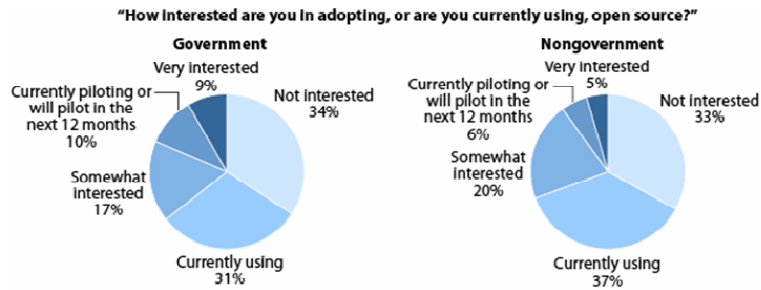
On the desktop Open Source usage is at 30+%. But this is going to change by the end of 2007 as Novell is furiously enhancing Linux for the desktop. It's amazing how good OpenOffice and Linux Desktop are today compared to 1 ½ years ago. Just wait till tomorrow.

# Government most ambitious on OSS



January 2006, Trends "Government IT Follows Software Trends, But Legacy Issues Continue To Slow Progress"

## Government Versus Nongovernment Open Source Adoption



Base: 852 nongovernment IT decision-makers and 59 IT decision-makers at government agencies (percentages may not total 100 because of rounding)  
Source: Forrester's Business Technographics® November 2005 North American And European Enterprise Software And Services Survey

Here are some additional forrester stats

How should PSI's choose  
between trad. software and  
OSS?

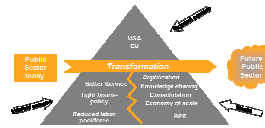
How to evaluate software?



## Evaluating Open Source in Government

- The following are based on an evaluation and benchmark approach that has been developed by:
  - Christian Wernberg-Tougaard, Unisys
  - Kristoffer Herning, Unisys
  - Patrice-Emanuel Schmitz, Unisys
  - Dr. John Gøtze, Ass. Professor – IT-university of Denmark
- The chapter is part of a book "Knowledge management and Open Source" to be published by Idea-Group publishing late 2006.
- Subtitle of the book chapter:  
Methodological considerations in strategizing the use of open source in the Public Sector

# Transformation drivers of PSI's.

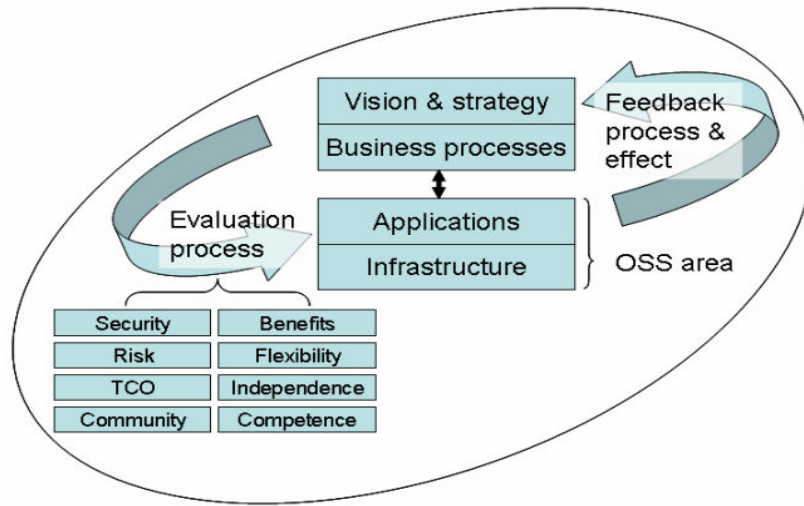


## New demands to Public Sector institutions

Traditional demands	New demands
Continuity	Flexibility
Bureaucratic correctness	Efficiency
Standard procedures	Adaptability
Adjust budget	Reduce costs
Push information	Make information available
"Protectionist" institutions	Transparent and open institutions
Accordance with regulation	User and customer satisfaction
We know what's good for you	Learn from the best
Contractually managed dependence on suppliers	Independence from single suppliers

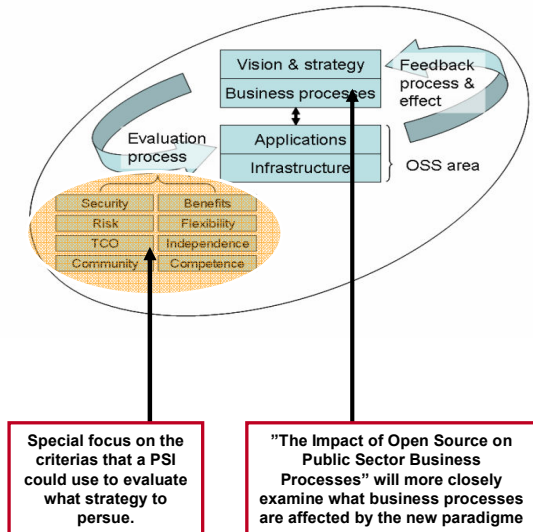


# Strategic dynamics in OSS



## Short about the holistic model

- Incorporates SOA architectural methodology as the underlining fundament.
- Especially the Zachmann-framework and the Unisys 3DVE are used.
- Normally OSS (or proprietary software) is thought only to impact applications- and infrastructure environment.
- In our methodology we try to be holistic – to capture the impact on all layers of an organisation of the choice of software.



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**Vision/Strategy:** As open source on certain parameters are introducing more flexibility, PSI leaders can utilize open source to efficiently drive and develop new eGovernment services – and test and validate small-scale pilot projects (POC – Proof of Concept) impacting both citizens and companies. This introduced agility could be seen as a way of realizing the digitized service society.

**Business Processes:** As the workforce are decreasing, PSI's are challenged on several frontiers: decreased staff, economic incentives for PSI employees to migrate to private sector, much more human services to assist the aging population. All of these calls for action – and increased digitalization combined with new processes will help overcome the challenges. Open Source might be one tool to reduce process complexity – driving more lean business process models of PSI's. Furthermore some of the C2G? and B2G? (as well as G4G) processes might be cross-fertilized and reusable due to the use of Open Source and open standards.

**Application/Infrastructure:** Most apparently application space will be impacted by OSS – not only as “fresh from the Internet” applications, but also as customized governmental applications. Several PSI portals and Content Management Systems are done by using OSS applications both on the frontend as well and backend. The Apache WebServer is market leading – and so will other OSS applications. Full eGovernment solutions derived on OSS software are already running[3] and more will come.

The real challenge is to envision the full value chain of offerings that demonstrate the impact the value derived from use of OSS solutions evaluated against use of traditional / proprietary software.

“Why is this the challenge?”, one might ask. The reason is that unless a clear view of all cost elements and the way that they interact, one will not efficiently be able to draw the right choice between OSS and proprietary software. And yes; just as proprietary software not necessarily is the right choice, neither might OSS be.

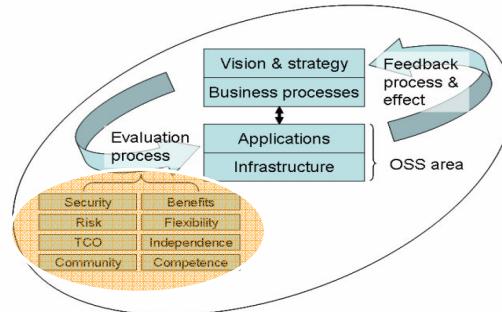
One of the key fundaments, when looking at Public Sector institutions, is the long tradition of independence that exists among PSI – this is fueled by the independence that a government must have to adequately service the people of the country. This independence also spills over to the way that the strategies of IT are developed and enforced. The Danish Government – which represents one of the most eGovernment-ready nations of the world – are utilizing a Government strategy of “best and cheapest”. *Best* meaning the right quality, maturity of processes, right functionality – all the qualitative parameters that are to be evaluated during a strategic development of solutions, while *cheapest* meaning the most efficient TCO contingent on *best*.

In this context Open Source becomes a viable alternative that needs to be evaluated as it might serve the objectives of Public Sector institutions – the need of independence, the need of best and cheapest.

But what is important to realize is, that the PSI must not be fooled by the sometime religious argumentation between Open Source lovers and ditto traditional software lovers. The right choice between Open Source and proprietary software is a science, not an emotion. Therefore model build has the intention of identifying and setting the scene for a methodology empowering PSI leaders to derive the right actions based on sound argumentation.

## The book chapter is focusing on a subset of possible evaluation criteria's.

- Flexibility and interoperability
- Security
- Independence and Anti Monopoly
- Legal issues
- Costs and benefits
- Support and development in the F/OSS Ecosystem
- Internal or external resource building



Security	Benefits
Risk	Flexibility
TCO	Independence
Community	Competence

## Flexibility and interoperability

- One of the major consequences of the ongoing digitalization of public services and functions is that PSIs are not only enabled by technology to run new procedures or offer new services, they are also intensely relying on and limited by technology.
  - *At a conference on IT-architecture recently held in Denmark, the CIO of the Danish tax authority told the audience how his greatest nightmare involves telling his management that an important political decision or priority can not be carried out because of insufficient IT-flexibility and interoperability between IT-systems.*
- Hardware, in most cases, can be easily purchased or scaled to match new performance needs. Dissimilarly, the applications and OS' carrying out the institutions' core business processes are often complex and are highly specialized reflecting the specific PSI's business needs.
- A consistent, open, standardized and adjustable architecture is obviously a prerequisite for obtaining necessary flexibility

# Security

Security	Benefits
Risk	Flexibility
TCO	Independence
Community	Competence

- According to Ghosh et al. (2002), another key issue in the ongoing debate on F/OSS versus traditional software is whether OS platforms and applications offer better performance in relation to security
- Wong (2004) describes how other elements that have helped to put IT-security high on the Public Sector agenda are the increasing risk of identity theft, cyber terrorism and other forms of IT-enabled crime. Public IT-systems play a key role in avoiding the wrong people gaining access to confidential or/and sensitive information.
- As a consequence, most new digital administration initiatives in the Public Sector will consider the level of security as a main evaluation criteria.
- According to Ghosh et al. (2002), the OSS front will claim that only open source code gives the entire user community the possibility of dynamically contributing to closing and concealing security gaps. This, according to Wong (2004), gives users the possibility of proactively enhancing the software's security level, hence eradicating the IT-criminals' first-mover advantage. The argument, explains Wong (2004), is that very few software houses, if any, can keep track of the rapid development in IT-crime. The numerous security breaches and successful attacks against software from the world's largest suppliers are presented as proof for this claim. The only way to ensure safe software is by inviting users to participate in identifying and closing the holes that will inevitably be identified and become subject to abuse by IT-criminals, no matter how well developed the software is.
- **There is no silverbullet about security – the best way is to identify the detailed evaluation criterias for IT-security – this can be done by hard consultancy work and tools like BEATO.**

# Independence and Anti Monopoly

Security	Benefits
Risk	Flexibility
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- Another criterion in choosing one software strategy over another is the level of independence that the chosen software is estimated to bring the PSI. According to Ghosh et al. (2002), most PSIs consider it very important to be able to make independent decisions which, at the given point in time, are expected to best support the opportunities and challenges in the PSIs environment. As mentioned earlier, this independence and the resulting flexibility is essential in order to support the overall strategy and vision of the PSI in a world where most of the core business processes have been digitalized.
- Relying on too few software providers and products is seen by many IT-managers in the Public Sector (as well as in the private sector) as limiting flexibility. Hence, the essential question for IT-managers is how to avoid dependence on a single supplier.
- Though examples like the ones mentioned above still exist, it would be reasonable to conclude that most software suppliers no longer rely on a single minded, protectionist strategy. In a parallel development, the isolationistic strategies of some software suppliers – especially regarding proprietary file formats – have been undermined by the emergence of a variety of brokers and converters with the capability of transforming for example one format or protocol into another.
- **To example: Lastest the Danish Parliament has voted an "Open Standard" decision to be implemented before 2008 (with exceptions)**

# Legal issues

Security	Benefits
Risk	Flexibility
TCO	Independence
Community	Competence

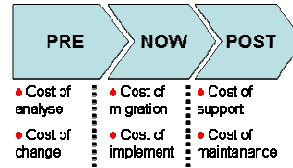
- Although the technology and the processes by which software is developed collaboratively are important, the real nature of F/OSS is not technical, nor organizational; it is legal. This legal essence is expressed by the license - a text summarizing all rights and obligations provided by the author of the software (the licensor) to the users (the licensees) under the copyright law.
- For historical reasons (because the movement was born there 20 years ago) nearly all relevant licenses are written under US law. Applied to European context, this raises a number of issues.
  - In general, the copyright framework is similar enough to answer positively to questions related to enforceability of US licenses. The Munich district Court enforced the GPL on 19 May 2004; however, a number of differences are making European legal services insecure about the responses provided by US licenses in all possible circumstances. Some examples include:
    - Copyright law and author rights are not applied in the same way; particularly concerning specific provisions related to "communication to the public" and moral rights (right to withdraw, to modify, to stay anonymous...)
    - The impact of the applicable contract law (often designated as the law of the USA) is difficult to appreciate by European judges, and is not fully compatible with mandatory European provisions concerning, for example, consumers information protection and the warranty and liability clauses
    - The determination of the competent jurisdiction is generally ignoring European context
    - US texts are only printed in English and their authors often refuse, for integrity reasons, to provide any official value to translations.
- Released by IDABC on 23 June 2005, the European Public License (EUPL) approach addresses the above issues, in order to facilitate open source licensing by local, national, and community authorities
- So – legal issues has to be clearly considered when estimating the resource allocation – and the organisational set-up to handel legal issues.

- [The GNU General Public License \(GPL\)](#)
- [The GNU Library or "Lesser" Public License \(LGPL\)](#)
- [The BSD license](#)
- [The MIT license](#)
- [The Artistic license](#)
- [The Mozilla Public License v. 1.0 \(MPL\)](#)
- [The Qt Public License \(QPL\)](#)
- [The IBM Public License](#)
- [The MITRE Collaborative Virtual Workspace License \(CV License\)](#)
- [The Ricoh Source Code Public License](#)
- [The Python license \(CNRI Python License\)](#)
- [The Python Software Foundation License](#)
- [The zlib/libpng license](#)
- [The Apache Software License](#)
- [The Voicida Software License v. 1.0](#)
- [The Sun Industry Standards Source License \(SISSL\)](#)
- [The Intel Open Source License](#)
- [The Mozilla Public License 1.1 \(MPL 1.1\)](#)
- [The Jabber Open Source License](#)
- [The Nokia Open Source License](#)
- [The Sleepycat License](#)
- [The Nethack General Public License](#)
- [The Common Public License](#)
- [The Apple Public Source License](#)
- [The X.Net License](#)
- [The Sun Public License](#)
- [The Eiffel Forum License](#)
- [The W3C License](#)
- [The Motosoto License](#)
- [The Open Group Test Suite License](#)
- [The Zope Public License](#)
- [The University of Illinois/NCSA Open Source License](#)

# Costs and benefits

Security	Benefits
Risk	Flexibility
TCO	Independence
Community	Competence

- In a study financed by the Danish Board of Technology (2001) the researchers concluded that the savings arising from utilizing F/OSS on the desktop within the Danish Public Sector could yield a yearly saving of €275 per desktop, resulting in total Public Sector savings of more than €123 million per year.
- But the real problem with calculations like this is that they looked only on direct license fees incurred (saved). Neither did they include indirect costs nor ecosystem effects.
- A later study showed that a typical it-project (regarding the Desktop) had a potential saving of 2-4% of the TCO by directly shifting from Microsoft Office to Open Office. But my comment in the media was - > "But how much could be saved on the rest 96-98% by improving business processes instead??" -> calculations has shown that a centralized IMS scheme could cut costs by 30%.
- The threat here is what I have called the "**Black hole**" – argument. By focusing on a single property (license costs) the big picture is lost ... that's why I suggested the PNP-model (generic).
- Governments should do business cases and impact analysis on the use of the software -> capitalising every cause-effect relationship.
- By joining the cost side with the values side (the benchmark evaluation model) one can get a full picture of the economical impact of choosing software.



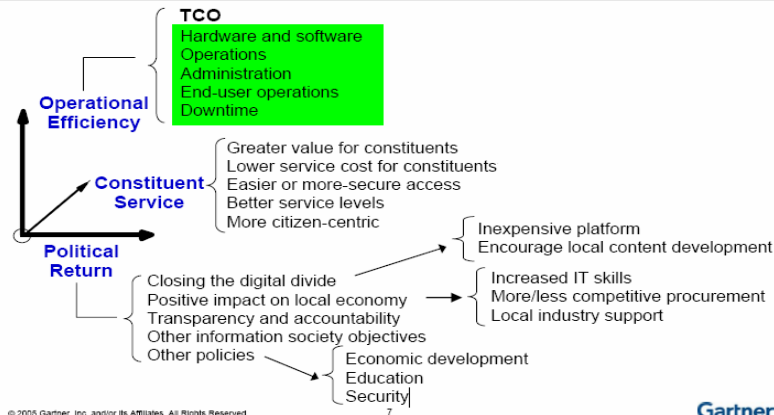
- The PNP-model captures the lifecycle approach – from pre to post. The "Pre" is capturing all the effort made before selecting and implementing SW (e.g. analysis of different possibilities). "Now" is the actual cost incurred by the SW-choice (e.g. migration). "Post" covers the costs that arise from further support and maintenance of SW (e.g. code maintenance). In the study we do not dive into the details of these costs.



# Which is consistent with Gartner's view

Security	Benefits
Risk	Flexibility
TCO	Independence
Community	Competence

## Moving From Total Cost to Total Value



Gartner

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To truly understand the opportunity, you have to understand the open source paradigm and the holistic impact it has on People, Process and IT Systems.

The goal of the open source movement is the maximization and protection of the privileges of the user, rather than the author

Rather than make people dependent on proprietary software, the Open Source paradigm opens the door for a public sector's constituents.

It's about the local community and not just about IT.

It's about Your Community And Your Constituents

For instance our federal government is no longer looking for lowest cost but best value.

Best value is measured:

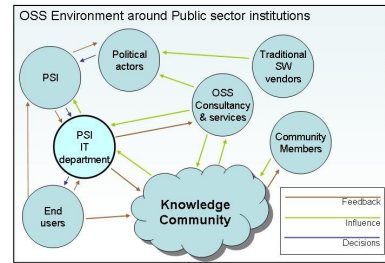
partially by TCO

Partially by constituent service levels

# Support and development in the F/OSS Ecosystem

Security	Benefits
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- The three generic roles - users, contributors and developers - are all essential to the community
- Holck et al (2004) proposes several ways in which PSIs and other organizations can participate in and contribute to an F/OSS project:
  - Source code – improvements and corrections in-house (competence building) which are offered to the developer community.
  - Documentation – both in-house and for the developer or user community.
  - Error reports - assisting in bug-finding and removal for the developer community.
  - Suggestions - for improvements to the developer community.
  - Technical infrastructure - supply and maintain for the community (or donate money to do this).
  - Participation - in management of the community F/OSS organization.
  - Response - to requests for help in user communities.
  - Participation and support - in local chapters of developer/user communities.

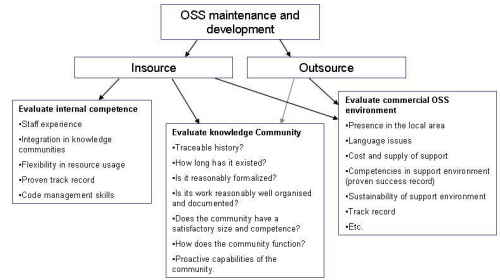


- Establishing an evaluation of the F/OSS ecosystem could involve asking the following questions:
  - Does the community have a traceable history?
    - How long has it existed?
    - Is it reasonably formalized?
    - Is its work reasonably well-organized and documented?
  - Does the community have a satisfactory size and competence?
  - How does the community function?
  - It is also relevant to try to estimate the proactive capabilities of the community.

# Internal or external resource building

Security	Benefits
Risk	Flexibility
TCO	Independence
Community	Competence

- This evaluation is rather basic and simply analyzes the level of F/OSS experience amongst the staff, its existing interaction with F/OSS communities (an optimal use of an F/OSS community requires some experience), whether in-sourcing the resources affects the flexibility of the IT-department's IT-usage; and finally the department's track record in maintaining and developing a dynamic IT-environment in support of the PSIs overall business goals.
- At the same time the knowledge community around the F/OSS solution(s) should be evaluated (as mentioned earlier). Finally, the supporting commercial actors should be evaluated. Most PSIs will not be capable of fulfilling all development and maintenance tasks despite choosing to in-source the function.
- Hence, concludes Hahn (2002), the commercial F/OSS environment's ability to support the IT-department when necessary should be evaluated.



- Another important consideration when deciding to in- or outsource involves the capability to perform what we call *code management*. A competent PSI might generate its own moderations to the code supporting specific business needs.
- Consequentially, code management becomes an important issue in the depicted distributed system. It requires a certain level of not only technical insight but also organizational competence to manage the stress field between own development, decentralized development in the community, new primary code roll outs, and other distributed inputs.

In F/OSS code management is distributed in a complex ecosystem as illustrated above. New functionality is often coded in sub-communities or by users or user groups. At the same time primary application code will be developed by the main community and bug fixes, patches, upgrades, etc. will be rolled out from time to time.

## Evaluation model



# Potential Evaluation Parameters

Vision and strategy	Business processes	Applications and information	Infrastructure
<b>TCO evaluation</b>			
<ul style="list-style-type: none"> <li>• Support costs</li> <li>• Implementation costs</li> <li>• Long term time consumption</li> <li>• Scalability</li> </ul>	<ul style="list-style-type: none"> <li>• Effect on business processes</li> <li>• Possibility of optimizing business processes</li> <li>• Learning costs</li> <li>• Process change costs</li> </ul>	<ul style="list-style-type: none"> <li>• Licenses</li> <li>• Updates and maintenance</li> <li>• Cost of security breaches</li> <li>• Migration costs</li> <li>• Scalability</li> </ul>	<ul style="list-style-type: none"> <li>• Costs from hardware requirements</li> <li>• Costs from future hardware requirements</li> </ul>
<b>Functional evaluation</b>			
<ul style="list-style-type: none"> <li>• Compliance with overall PSI strategy</li> <li>• Compliance with political priorities</li> <li>• Compliance with IT-dep.'s goals and targets</li> <li>• Openness</li> </ul>	<ul style="list-style-type: none"> <li>• Functional fit with existing business processes</li> <li>• Flexibility in supporting specific business processes</li> <li>• Support of workflows</li> <li>• Information infrastructure</li> <li>• Customizability</li> </ul>	<ul style="list-style-type: none"> <li>• General flexibility in application</li> <li>• Possibility of individualization</li> <li>• Security</li> <li>• Standards based</li> <li>• User friendliness</li> <li>• Information infrastructure</li> <li>• Reliability</li> </ul>	<ul style="list-style-type: none"> <li>• Standards based</li> <li>• Compliance with present hardware set-up</li> <li>• Impact on future hardware decisions</li> <li>• HW Performance</li> </ul>
<b>Additional evaluation</b>			
<ul style="list-style-type: none"> <li>• Independence from vendor</li> <li>• Knowledge sharing</li> <li>• Supporting org. evaluation</li> <li>• Legal evaluation</li> </ul>	<ul style="list-style-type: none"> <li>• Internal/external resources</li> <li>• Community evaluation</li> <li>• Legal evaluation</li> <li>• Code management capacity</li> </ul>	<ul style="list-style-type: none"> <li>• Future proof?</li> <li>• Market trends</li> <li>• Reputation</li> <li>• Code management capacity</li> <li>• Interoperability</li> </ul>	<ul style="list-style-type: none"> <li>• Compliance with hardware strategy</li> <li>• Interoperability</li> </ul>

Each of the elements within the "Potential Evaluation Parameters" can be examined closely in a workshop – the suggested process could be to do an assessment workshop identifying the most vital parameters that should be evaluated – and then have "drill-down" workshops which had the purpose of identifying the questions that should be asked to benchmark the different solutions/products. Then finally an scoring workshop could be conducted to make the count of the answers.

# Public Sector Business Process Transformation - Outline

## Software Evaluation and Procurement

- Software License Review
- Software Evaluation
- Software Negotiation During Procurement
- End Of Life Migration Planning
- Public Sector Funding Of An Open Source Project

## Software Development

- Defect Identification and tracking
- Product Enhancements and Defect Resolution processes
- Development Workflow, Organizational Staffing and Application Planning Processes

## Production Management

- Configuration Management
- Deployment Processes
- Escrow Processes
- Disaster Recovery Processes
- License Compliance Processes
- Training And Documentation
- Technical Support Processes

## Collaboration

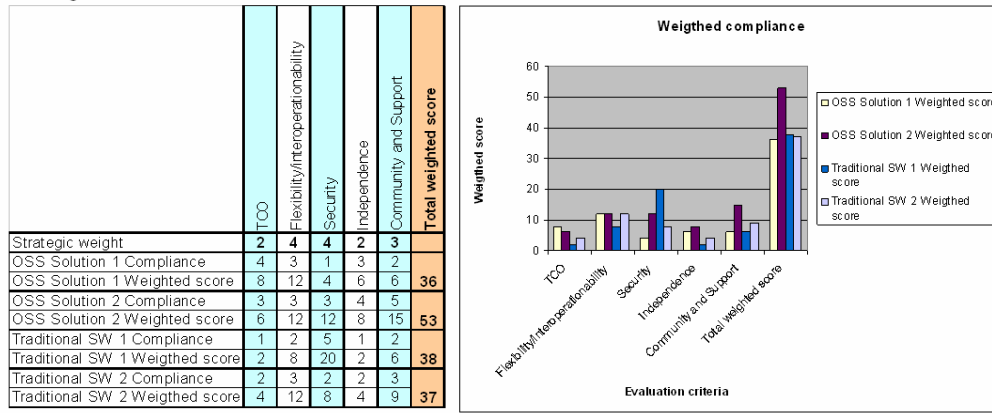
- Collaborative Processes
- Public Sector Management of Open Source Project

**This is the major Business Process that the forthcoming white paper on "The Impact of Open Source on Public Sector Business Processes" will discuss and evaluate strategies for.**

As you can see the impact to your IT business processes is pretty much across the board. But the impact is mostly positive! I do not plan on going into what the impact is on each process, but if you have questions or would like more information feel free to contact me or I can send you a white paper on the topic.

# Benchmark model

- A wighted scoring model (importance: 1-5 – complience 1-5)



The scoring model can be expanded by:

More criteria -> but a short amount of criterias should be used

Dividing the evaluation of sub criteria's into detailed evaluations creating an aggregating model.

Can be used to survey strategic use of OSS – different pilot institutions uses the same evaluation model to derive a consus evaluation/benchmarking of the OSS product in play.

# Our appendix 1 – how to get started?

- **Appendix 1 – how to get started with this type of evaluation process?**
- When applying the methodology described in the article a constructive way to initiate an analysis is by asking and investigating a series of questions. The questions should be investigated for the various software alternatives that are being analyzed.
- Trying to answer these questions in, for example, a workshop with participants from both IT and the business side will be an excellent way of launching a more formalized evaluation process. The reason is that the questions will force IT to explain the basic technical implications arising from choosing one application over another, while the business side is forced to be very concrete in formulating their business needs.
- This will help create a framework which can later in the process be intensively refined and detailed and in the end serve as listing graded evaluation parameters.
- Utilizing expert coaching and guidance on workshop (facilitation) will make the workshops more efficient and productive.
- Questions to ask in a workshop:
  - What are the known costs: licenses, implementation, hardware etc.
  - What are the support costs?
  - What are the implementation costs?
  - What is the estimated time consumption – implementing, training, analyzing?
  - Is the solution scalable?
  - To which extent does the solution support our business needs?
  - To which extent does the solution optimize our business processes?
  - Is the solution adjustable, customizable and flexible?
  - Is it user friendly and in accordance with our end-users' needs?
  - Is the solution in sync with our strategy of best and cheapest?
  - Is the solution open and standards based?
  - Can it communicate with the rest of our environment?
  - Does our organization hold the competencies needed for managing and further developing/adjusting the solution in the future?
  - Do we hold the necessary code management resources?
  - How does the solution affect the security level of our environment?
  - Does solution perform satisfactorily?
  - Does the solution seem to be future proof in terms of core technology: code language, protocols, API's etc.



Thanks !

