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Dissemination of Good Practice in Using Open Source Software
(GPOSS)

OSOR Guidelines Public procurement and Open Source Software

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1. Introduction

European governments are increasingly considering the use of Open Source Software (also known as Free Software or Libre Software, or FLOSS¹) as a means of reducing costs, increasing transparency and sustainability. A number of debates have taken place on the costs and benefits of open source software, and much discussion and interest has been expressed from the perspective of information technologists.

Meanwhile, the European Commission has launched the Open Source Observatory and Repository, OSOR, with the intention of supporting open source software as the epitome of collaborative development of software in the European public sector.

In this context, with this guideline, the authors consider open source software not as a technical topic, but essentially as a matter of public procurement. The authors look at the process of public procurement, its principles and requirements; how public procurement works with software, across EU Member States; and how public procurement approaches open source. The authors explain how open source can be best addressed with public procurement, and provide guidelines for how to acquire open source software through the public procurement processes.

This is *not* a general purpose guide for procurement of software. This guideline is specifically designed in order to clearly and simply explain how public administrations can acquire open source.

Also, this guideline draws on the extensive legal analysis conducted by the Dutch government's OSOSS programme resulting in the publication of their

¹ Free Software and Open Source Software, which may be used interchangeably when referring to software, are defined by the Free Software Foundation and the Open Source Initiative. They refer to software that is available under terms that allow users to use the software for any purpose; to study the software source code; to modify the software; and to distribute the software and modifications. See www.fsf.org and www.opensource.org

Open Standards Manual and Open-Source Software in tenders: Open standards and open-source software and tendering rules in 2005. This was followed by a further practical guide published in 2007 by NOiV, the successor organisation to the OSOSS programme².

The Dutch guideline was prepared in a context of considerable policy debate around open source software. The Dutch parliament had passed a motion (in 2003) calling for the use of open source software and open standards in the public sector. A number of studies on the attitudes towards and use of open standards and open source software in the Dutch public sector were conducted. Finally, in 2007 the Dutch government adopted a formal policy mandating the use of open standards and a preference towards open source software. The Dutch guideline thus does not need to come with a justification for this policy, since that was already performed by previous studies; and it is rooted in the specific context of the Dutch policies towards open source and open standards.

At the European level, there are no such policies. This guideline is therefore meant to be applicable in any context within EU Member states, regardless of the existence of any policy. Indeed, the purpose of this guideline is to allow individual public administrations at the regional, national or local level to acquire open source software, even if there is no policy regarding open source. This guideline shows public administrations' procurement officers, policy makers and IT managers how to do this following European procurement rules alone, with no need for any specific open source policies.

One might ask: what is the justification for this guide? With the launch of the OSOR, it is natural for public administrations to want to try to use open source software, starting with the software that will be published on the OSOR. Many public administrations are

² There are other official publications that provide guidelines on the procurement of open source software, including France (the Ministry of the Budget), Italy (the Region of Toscana), Denmark and in the near future Finland. However, the Dutch guidelines are the oldest with the most detailed legal analysis and thus suited the structure and purpose of this document.

unclear how to go about this, and need advice and guidelines. One important function of the OSOR is to provide a space for the publication and sharing of advice and guidelines related to open source in the public sector. This guideline responds to the needs of OSOR users.

A further justification, though, is provided by the existence of widespread "poor practices" in public procurement that lead to non-transparent, anti-competitive discrimination in software procurement. This discrimination is in favour of proprietary software, and typically specific proprietary products and their vendors. The annex to this guideline, "Current situation in the European Union", provides evidence of such widespread practices from surveys and analysis of tender databases. (The annex also provides an overview of public sector IT and open source procurement in EU Member States.)

Such poor procurement practices occur, at least partly, because public administrations may not be aware of better practices; and because they may not be aware that it is possible to acquire open source software - or how to do so. There is a need for information, and the goal of this guideline is to meet that need.

The main part of this guideline, following this introduction, is intended for a broad readership. It is intended to provide practical guidance to policy makers, IT managers and procurement officials at the level of national, regional and local government. It is therefore intended to be readable and relatively short.

The main part of this guideline can be distributed, and read, without further details. However, further details are provided in the three Annexes:

- Annex A: "template" text that can be easily adapted for use in actual tenders that are intended to express a preference or requirement for open source software or open standards.
- Annex B: legal guideline, providing the legal basis behind the practical guidelines, intended for lawyers and procurement officials while still accessible to policy makers and IT managers.

- Annex C: current situation in the European Union, providing an overview of public sector IT and open source, and evidence on current procurement practices including a review of calls for tender.

2. OSOR guideline for open source procurement

This practical guideline shows how open source software can be acquired by public administrations. It also describes how to procure software compliant to open standards. It is meant to be read by IT managers, policy makers and procurement officers, but it does not include details of legal analysis, which are provided in an annex.

2.1 Public sector needs: transparency, sustainability, cost-effectiveness

The ministers expressed concern about dependence on single ICT service providers and producers, and called for more competition. Ministers [...] asked the Commission to stimulate the development of open-source alternatives [...] and open standards and “technology-neutral” regulation are vital.

- Brussels Ministerial Declaration, 29 November, 2001

Ministers encouraged their administrations to redefine systems and processes in order to coordinate better the actions of different levels of government, by using open standards.

- Como Ministerial Declaration, 7 July, 2003

Member States will promote awareness and the adoption of open standards in public administrations

- Manchester Ministerial Declaration, 24 November, 2005

Continuous attention shall be given to the definition and openness of technical standards and publicly available specifications

- Lisbon Ministerial Declaration, 19 September, 2007

“The award of contracts concluded in the Member States on behalf of the State [...] is subject to [the] principle of equal treatment, the principle of non-discrimination [...] and the principle of transparency. [It] is advisable to draw up provisions of Community coordination of national procedures for the award of such contracts which are based on these principles so as to ensure the effects of them and to guarantee the opening-up of public procurement to competition ”

- Recital 2, Directive 2004/18/EC

Public administrations using IT solutions have an obligation to support interoperability, transparency and flexibility, as well as economical use of public funds. When it comes to public procurement, the principles applied to the public sector require them to support (and certainly not to harm) competition through their procurement practices.

They are obliged to avoid explicitly harming competition in the market of private consumers. Thus, public administrations should not require citizens to purchase or use systems from specific vendors in order to access public services, as this is equivalent to granting such vendors a state-sanctioned monopoly.

They are also obliged to ensure the best costs to service ratio over the long term.

These principles are not only the basis for policy documents such as the European Interoperability Framework; they are also implied by the legal framework governing public procurement, notably Article 28 of the EC Treaty which prohibits any barriers to intra-Community trade, Directive 2004/18/EC³ on public supply contracts public service contracts, Article 28 of the EC Treaty, which prohibits any barriers to intra-Community trade, and Directive 98/34/EC⁴ on the provision of information in the field of technical standards and regulations⁵.

Open Standards

Good practice eGovernment services should provide access based on open standards, and in particular, never require citizens to purchase or use systems from specific vendors in order to access public services: this is

³Ref: Official Journal of the European Union

⁴Ref: Official Journal of the European Union

⁵These were specifically referred to by the EC ruling on public procurement of computers, where tenders specifying “Intel or equivalent” were found to be illegal. EC Press release IP/04/1210, October 13, 2004.

equivalent to granting such vendors a state-sanctioned monopoly.

Furthermore, for procurement of software in general, it is good practice for public authorities to implement software based on open standards, as defined by their economic effect of fostering a fully competitive market. Supporting standards alone without fostering a fully competitive market is harmful to competition and net welfare, and thus expensive by definition over the long term. While software based on open standards may not always be available, public administrations should encourage its development, and indicate their preference for open standards to vendors through preferential procurement of software based on open standards wherever it is available. Similarly, public administrations should use open standards wherever supported by the software they implement, in preference to any other technologies supported by such software.

The main advantage of open standards is the capacity to be interoperable with other software systems. Thus, a software application based on open standards is fully interoperable with any other application using the same standards, and it is possible for any other application to use the same standard. As a result, software buyers often try to achieve “vendor-independence”, which is to retain the ability to change software products or producers in future without loss of data or significant loss of functionality.

However, this goal can conflict with implicit or explicit criteria for software purchasing, in particular whether new software is compatible with previously purchased software. Buyers who use the latter criterion rather than a general requirement for open standards or vendor-independent interoperability in effect remain locked in to their previously purchased software. Thus, even if they see the benefits of open standards and believe in interoperability, buyers whose preference for new software is based instead on compatibility with previously installed software are not, in practice, supporting or benefiting from interoperability.

Open standards have been described above on the basis of their effects; the term has also been defined by the European Interoperability Framework v1.0 as follows:

The following are the minimal characteristics that a specification and its attendant documents must have in order to be considered an open standard:

- *The standard is adopted and will be maintained by a not-for-profit organisation, and its ongoing development occurs on the basis of an open decision-making procedure available to all interested parties (consensus or majority decision etc.).*
- *The standard has been published and the standard specification document is available either freely or at a nominal charge. It must be permissible to all to copy, distribute and use it for no fee or at a nominal fee.*
- *The intellectual property rights of (parts of) the standard is made irrevocably available on a royalty-free basis.*
- *There are no constraints on the re-use of the standard.*

There are a number of other definitions, and as the authors note later in this guideline, the precise definition of the term open standards is less important than a clear expression of the reason why open standards are desired in the first place. These reasons form part of the requirements for any procurement.

Open source software

Open source software, Free Software, or libre software, also called FLOSS, is software that a user can:

1. use for any purpose
2. study, by examining the source code
3. modify and improve
4. distribute, with or without modifications

This basic definition of FLOSS is equivalent to the *Four Freedoms* of the Free Software Foundation (FSF, which

officially defines "free software") and the *Open Source Definition* maintained by the Open Source Initiative (OSI).

Open source software is copyrighted by its authors, and is made available under copyright licences that provide the freedoms required by the above definition.

Most major free software or open source licences have gone through a formal process of approval by the Open Source Initiative, and are listed on the OSI website; these licences are OSI certified and authorised to use the "Open Source Initiative Approved License" mark. Of course, licences that meet the terms of the Open Source Definition but have not been formally processed by the OSI and thus not listed on their website are also open source licences. Note that the EUPL approved by the European Commission is also an open source licence which is valid in all the official languages of the European Union⁶.

Relevance to procurement principles and sustainability

Open standards and open source software are both relevant to the procurement principles outlined previously. Open source software in particular ensures supports sustainability of government ICT processes and systems through:

1. **transparency:** open source software is available along with its source code which can be studied and modified. This can ensure the security of the software as its processes can be examined in detail. It also allows appropriate stakeholders to understand and monitor the functioning of government processes that are implemented in software - for instance, voting systems.
2. **interoperability:** open standards ensure interoperability, the ability of systems from different vendors to function fully with each other without technical or legal obstacles. Open source software also supports interoperability as its

⁶See the licence and guidelines on using it at <http://osor.eu/eupl/>

processes can be studied and adapted to work with other systems.

3. **independence:** transparency and interoperability allow current and future vendors to work with, adapt and maintain the software, eliminating the dependence of purchasers on the vendors of the original version of the software.
4. **flexibility:** open source software allows systems to be adapted and extended as user needs evolve. It does this without requiring that the user go back to the original vendor - new suppliers can be selected on a competitive basis.

These four properties ensure the **sustainability** of open source software. Sustainability implies lower costs over the longer term, but more importantly, reduces the users' reliance on the original vendors of the software. This means that selection criteria that have traditionally been used to ensure the sustainability of software by ensuring the sustainability of the original vendors (e.g. capital, turnover or size requirements) may not be as important and can be reduced for the procurement of open source software. If, for instance, the original vendor goes bankrupt, users can lose all their investments in that vendor's proprietary software. If the software is open source, the user can find another vendor to support the software with no legal or technical obstacles.

2.1 Defining a policy

There is, at present, no EU-wide policy regarding the procurement of open source software. There are a number of guidelines and requirements related to procurement in general, some of which touch upon software. As mentioned previously, there are specific EU Directives that relate to procurement and to technical standards. The European Interoperability Framework (EIF) provides guidelines relating to open standards and interoperability between administrations; version 1.0 of this document is the current official publication and has

been referred to here, although the draft EIF version 2.0 is near finalisation after a period of public comments.

Most EU Member States do not have specific policies regarding open source software procurement. Some state general principles that software procurement should not discriminate between business models, open source being more associated with particular business models.

In the Netherlands, the September 2007 government action plan *Netherlands in Open Connection* expresses an explicit "preference for open-source software in the case of equal suitability ". This recognised that public procurement must not discriminate between individual vendors, which is anti-competitive. As can be seen in Annex C on the Current situation in the EU, in practice, much software procurement does discriminate between individual vendors, typically in favour of specific proprietary software companies.

Such discrimination between individual vendors goes against applicable rules and procurement principles. However, preference within a particular tender towards a specific *business model* is generally accepted and widespread in several areas - such as when a preference is expressed for leasing or buying capital equipment in a call for tender. Preference for a specific business model is reasonable if it better meets specific procurement needs. This is, of course, not a "preference" at all in the sense of the principles of non-discrimination and equal treatment, since any economic operator who is willing to meet the specific procurement needs may bid for such a tender. Thus, it is only a preference for meeting the specific, clearly defined and justifiable needs of the procuring agency.

This is the argument used by the March 2008 Dutch government guideline, *The acquisition of (open-source) software*, prepared in order to implement the Dutch procurement policy. The guideline, which the authors consider as an appropriate model for this OSOR guideline, explains how specific properties of open source software may be defined and justified as part of the functional requirements for public procurement. A

preference for open source, by a given public administration, for particular procurement actions, is thus not implemented by acquiring specific software applications or favouring particular vendors, but through the functional requirements and award criteria specified in calls for tenders. As with any other requirement in a tender, requirements that are met by open source software - such as the acquirer's right to study, modify and redistribute the software - must be justifiable.

The process of defining a policy is beyond the scope of this guideline. Instead, the authors assume that for whatever reason, whether as a cause of national policy as in the Netherlands, or due to the requirements of a specific local case of procurement, a decision has been made to acquire software with the open source characteristics as defined previously. This guideline explains how to implement that decision.

2.2 Determining acquisition needs

Public procurement is based on determining needs, identifying the IT architecture in which these must be implemented, translating these into requirements and evaluating available options through the procurement process.

Interestingly, the acquisition of open source software does not necessarily require the use of the public procurement process, as purchases of software and services do. This special case is also discussed below.

2.2.1 Defining IT architecture

Information Technology serves the structure, processes and goals of an organisation. An organisation has its own architecture of processes and systems, in order to efficiently implement its goals. An IT architecture translates these organisational constraints and preferences into set of interconnected IT systems that provides an environment for the smooth integration of specific IT solutions to specific organisational problems.

Public sector organisations have architectures that may differ in some respects from private organisations due to differences in their essential goals or principles. Saving costs is a principle that may be common to public and private organisations. Public organisations may differ in that they are obliged to save costs over the very long term - as they are using taxpayer funds and do not need to respond to short term business cycles. However, public organisations often have constraints in the form of budgets that are set for relatively short terms, and need to balance the short-term and long-term cost savings.

Similarly, private organisations may have different, sometimes more limited goals with regards to transparency, which is a particularly important principle for public organisations.

There is no EU-wide IT architecture for public organisations; Member States do have them, and the European Interoperability Framework provides a high-level structure for many aspects of an IT architecture.

Any IT solution should be designed to fit into the organisation's IT architecture. The specific needs of public organisations may allow open source software to fit into the IT architecture in especially interesting ways, as described below in the section on determining open source requirements.

2.2.2 Determining requirements

Best practice IT procurement is based on defining clear requirements and finding the best match to them. While procurement processes such as calls for tender do, in practice, often ignore this principle to simply specify particular products or even vendors, this is not good practice and may violate procurement rules. It also makes it more difficult to demonstrate a rationale for the acquisition choices as they are made.

Requirements can come in a number of forms, that are briefly described below. These are not in any way official categories but are only shown for illustrative purposes.

Functional

Functional requirements describe the purpose for which the IT solution is needed, and the functionality which it is expected to provide. Clear specification of functional requirements is essential in order to ensure that procurement follows the principles of transparency and independence, is pro-competitive and cost effective in the long term. An example of functional requirements would be a detailed description of the functionality that a system for maintaining property records is expected to have. Functional requirements should not be defined in merely IT terms, but take in to account the needs to be addressed. .

Technical

Technical requirements may also be important, if there are specific constraints or needs regarding the IT architecture and technologies with which the solution must fit. Note that compatibility with previously purchased IT solutions may seem like a very valid technical requirement, but can also be a way of perpetuating bad practices that result from previous purchasing decisions. Requirements for compatibility with open standards and no proprietary elements, i.e. full compatibility across multiple vendors and producers, may not limit future procurement choices. When compatibility with a previously purchased system requires compatibility with proprietary technologies, it can work against the notion of interoperability across vendors and producers. Such interoperability is essential for the sustainability and long-term cost-effectiveness of software. In essence, compatibility criteria, when tied to previously purchased proprietary solutions, lock the buyer into that solution indefinitely, making its vendor's one-time win in a single contract effectively a win for a much longer period of future procurements.

Under certain conditions and subject notably to Directive 2004/18/EC it may be acceptable for a previous procurement to lead to future procurement with a restricted choice of suppliers, even through a "negotiated" rather than "open" procedure. However, the effect of

previous procurement restricting the choice in future procurement should never last beyond the period foreseen in the original procurement. As may be seen in the example tenders in Annex C, Current situation in the European Union, such long-term lock-in considerations are often not made in the procurement process, resulting in many tenders calling for branded software from named vendors.

Indeed, the European Commission itself has reiterated that "*[under] the EU public procurement rules, contracting authorities may refer to a brand name to describe a product only when there are no other possible descriptions that are both sufficiently precise and intelligible to potential tenderers*"⁷⁸.

Business / service model

The requirements deriving from the current IT architecture and the needs of the organisation determine the best form in which an IT solution should be structured, and this includes how it should be paid and accounted for. As a result, certain business models and service models are a naturally better fit for a given set of requirements that are determined and defined by a public administration prior to procurement.

This is not, in fact, drastically different from other areas of procurement. A public authority may decide that it wishes to buy a car, or lease it; to commission the construction of a bridge for a fixed fee, or on a build-operate-transfer model.

All these choices involve a preference for some business models over others - simply because a defined set of requirements is better (or only) met by businesses adopting one business model rather than another. Businesses that use a business model that cannot meet the needs of the public administration will naturally lose out - leasing companies, say, if an agency's needs are best met by buying rather than lease cars. Favouring a particular

⁷ European Commission release reference IP/06/443 dated 4 April 2006; this is also a reference to Directive 2004/18/EC, Article 23.

⁸One result of this for example is that is not possible to refer to "Intel or equivalent" microprocessors when defining hardware requirements in public tenders.

business (a vendor), goes against the principles of equal treatment and non-discrimination. Defining procurement requirements based on particular needs is, however, fully in line with the principles of equal treatment and non-discrimination - even if those needs can only be met by certain business models.

Similarly, when it comes to IT, public authorities are free to choose solutions that suit their needs. Often, such choice - and discrimination - is made by default. For instance, a call for tenders for the purchase of software licences "discriminates" against businesses that do not offer software as a product paid for at the time of purchase through licensing. A call for tenders for software that can be modified, adapted and redistributed by the procuring agency (such software may well meet the open source definition) "discriminates" against businesses who only work on a model based on proprietary control and licensing that software for a specified number of users or computers. Of course, businesses may use many different models and are free to adapt their business models to better meet customers' needs.

Open standards

Open standards in the acquisition of IT may be preferred or required by policy considerations. As the previous section stated, there is no uniform policy on this across the EU. A possible exception is eGovernment services where several Ministerial Declarations, among other public statements, have called for the use of open standards to ensure that citizens have access to government without becoming customers of specific IT vendors.

With or without an explicit policy at a national level, open standards may also be preferred or required by policies specific to local areas or particular categories of procurement. Open standards may take the form of a functional requirement: e.g. it may be an essential function of a new web-based eGovernment service that all citizens have the ability to fully interact with it, without preference to specific software or hardware

vendors. Open standards may take the form of technical requirements: e.g. where specific open standards are being used and with which new acquisitions must work. Open standards may also take the form of requirements that affect business models: e.g. a public authority wishes to have the full freedom to use in perpetuity the data files it creates with new software applications, without being tied in perpetuity to the vendor of that software. Open standards may be essential to interoperability between products and systems from multiple producers and vendors, and are thus essential for an IT architecture that remains within the control of the customer. This is the reason for the emphasis on open standards in the European Interoperability Framework.

While open standards requirements can be defined within tenders in terms of these functional, technical or business needs, standards are complex, technical issues for which the underlying functionality may be hard to describe. In practice, it is easier in individual procurement actions to refer to standards by name, or refer to a list of standards that have been examined and found to meet the standards requirements. This is required by the Technical Standards and Regulations Directive 98/34/EC (amended by 98/48/EC) with respect to technical standards in general (which may or may not be open). Specifically for open standards, this is also the practice in the Netherlands, where the government maintains a list of open standards. However, when there is no policy in place, or no list of open standards available for a particular technical requirement, it may be advisable to provide some justification for the properties of the standard (such as its openness) in the functional requirements and award criteria. The use of functional specifications and "openness" award criteria allows individual public administrations to procure solutions based on open standards even when they are not able to refer to policies or specific open standards at the local, regional, national or European level.

Open source

As stated previously, there is no EU-wide policy on the procurement of open source software. There are several principles of the functioning of public authorities which may justify the requirement of open source software. The acquisition of open source software can be made on the basis of such justification; a general requirement in a call for tenders for software solutions to be "open source" is not advisable.

As with open standards, open source software can be justified in terms of functional, technical and business model requirements. The examples provided above for open standards can to some extent apply as well to open source. Further justifications specific to open source exist.

As a functional requirement, a public authority may wish to ensure the transparency of government processes. Many of these processes - e.g. for voting systems - are implemented in software, and the only way to ensure its transparency may be to require that the source code be visible for public inspection.

As a technical requirement, a public authority may wish to be able to modify the software (or have any third party of its choice modify it) in the future in order to work with other software, or be adapted to future needs.

As a business requirement, a public authority may wish to be able to distribute the software internally or to other businesses, individuals or agencies with which it interacts, with no additional cost based on the number of users. A public authority may even wish to be able to make adaptations to the software before doing so (or have any third party of its choice make such adaptations). Such requirements, if justified, are perfectly legitimate, and may be effectively requirements for open source software.

2.2.3 Examining costs and benefits

Public sector organisations need to keep the public interest in mind, and for procurement this means that public funds should be spent in as cost effective a way as possible. Liberated from the obligation of the short term

financial cycles of the private sector, public organisations are also obliged to maximise costs effectiveness over the very long term. However, with limited, short-term budget cycles, they need to find a good balance between limiting the initial investments and limiting the overall, long term cost.

Although this may be difficult, it is possible to evaluate spending over a long time horizon to ensure that taxpayers get the best value for their money. It is important to ensure that decisions that look good for the short term do not result in higher expenses and reduced choices over the long term.

Long-term costs

Open source software licences may be available free of charge. This does not mean that the use of open source software is free, of course. Several costs may be involved in the operation of software, including associated hardware, support and maintenance, training and other services. The *exit cost* is also an important consideration: the cost incurred in moving to another IT system.

Even if open source software licences are in fact free of charge (and therefore do not even need a call for tenders in order to be acquired, as they can simply be downloaded by a public sector organisation: see the next section), these other costs need to be estimated over the long term. A decision on the software system to be used needs to be made after evaluating all the long term costs associated with the use of that software system.

Similar considerations could be taken into account for the evaluation of proprietary software, which also has requirements for hardware, support, customisation, training and other services. With proprietary software, though, a long term evaluation of costs could include the frequency and necessity of purchasing upgrades.

In a normal procurement process, a pre-defined period is announced at the beginning of the procurement procedure. It is assumed that all costs related to the procured software that will be incurred during that period, such as upgrades, will be taken into account in

the evaluation of the bids. A basic assumption of normal public procurement is that at the end of the pre-defined period, the procuring public administration has no contractual obligations towards the original vendor.

When software based on proprietary standards and proprietary interfaces is procured, these assumptions of normal public procurement break down. Although no contractual obligations exist towards the original vendor beyond the pre-defined lifetime of the original procurement, the technical and financial cost of moving to a system from another vendor or producer, or even acquiring support from another independent vendor, may be very high.

Software is used to create documents, databanks and customised applications that, in the public sector, have a life-time that may be well beyond the originally announced life-time of the procurement procedure for the software. If the software originally purchased makes it difficult to use the documents, databanks and customised applications with similar software from other producers, then there is a high cost in terms of changing from the original software to another software - the *exit cost*. With proprietary software this also means there is a high cost in terms of changing from the original vendor to another vendor.

Thus, the assumption of normal procurement procedures, that all costs and obligations relating to a procurement are completed after the pre-defined period for which the procurement takes place, appears to fail when applied to software. Contractual obligations do not extend beyond the original procurement period for the software; but the need of the public administration to be able to continue to use its own data and applications means that *technical* obligations come into play, as well. Proprietary standards provide technical obligations that result, in effect, in contractual obligations - explaining why so many public administrations publish tenders for software refer to proprietary software simply by brand name. They do this because they find the *exit cost* too high, and may simply not quantify it.

Since an essential principle of public sector IT systems is sustainability and independence, the ability to change vendors and systems in the future is essential, and the cost of doing so should be included in the evaluation of the cost of the original software purchase. Hence the term *exit cost*, as these costs are essentially a result of the technical and business model choices of the original software vendor.

The initial selection of proprietary software, if it uses proprietary standards or implements standards in a way that is not exactly the same as software from other producers - can limit future software choices.

As an example, a one-time, presumably competitive acquisition of a proprietary system for web server administration can result in a requirement that all future additions to the web site must be made with the same proprietary system. This not only limits the future choice of the public administration that acquired the software in the first place; it forces citizens, businesses and other future contractors developing additions to the public website to become customers of the vendor of the original software acquired by the public administration. Such long-term costs of proprietary software are frequently not included in the evaluation process, but are essential for a sustainable, efficient use of public funds.

In brief, long term dependencies on a particular vendor - extending past the boundaries of individual procurement actions - are not good procurement practice and may even be against applicable rules. Any decision, such as a further procurement action, that re-inforces this dependency on a particular vendor, should be avoided, and will only increase the exit costs.

Note that the argument for the inclusion of exit costs in evaluation is essentially one for open standards, not necessarily open source software⁹. Since exit costs may be

⁹ If open source software is being used without open standards, it may implement interfaces and formats that - while not proprietary - are not widely used; it may limit interoperability with other software. However, open source software does not lock the user into the same vendor, and with the source code available, it is possible to have other software adapted to use the protocols implemented, at a cost. Moreover, open source software can often be

hard to quantify at the time of initial procurement, choosing software that works fully with open standards may be a way of avoiding the lock-in effect discussed above.

Long-term benefits (sustainability), additional services

Like costs, benefits should also be evaluated in the long term. Buying new software because it is compatible with previously purchased software may seem to save on migration and training costs. But when this software is proprietary, and is not fully based on protocols and standards that are fully and freely supported by other independent vendors, exit costs and associated costs may greatly increase over the long term. The agency's dependence on the proprietary vendor is increased. Thus the apparent short term benefit of compatibility is much reduced when considered over the long term.

Acquiring software that is fully open and sustainable by multiple independent vendors may seem to have less benefits initially, especially if such procurement requires a more detailed study of the market (e.g. for the acquisition of open source software by downloading, or for the identification of appropriate open standards in case of procurement that may be proprietary software). It may require more detailed procurement specifications, such as functional requirements. And the benefits of having independence and sustainability are not always apparent in the short term. In the long term, however, the ability to change to a new vendor independent of the initial vendor is key to the sustainability and independence of the public administration, and the benefit of such a choice when examined in the long term is thus greater.

Total Cost of Ownership (TCO) studies and evaluation

Total Costs of Ownership (TCO) is a term often cited in relation to software purchases. However, there are several different methodologies, and few include all the

upgraded at no cost at all - through free downloads - or by any vendors of the procuring agency's choice at a time of the agency's choice.

long-term costs involved in software purchases, such as the costs of required regular upgrades, or the exit cost of migrating to another software. It is therefore difficult to use TCO studies, or even compare them.

Furthermore, such studies rarely evaluate anything other than quantifiable costs; the benefits of flexibility, independence and transparency while essential to a public organisation, may be qualitative and hard to quantify. Thus, it is advisable to analyse costs and benefits for the needs of the public organisation concerned, over the long term, rather than relying on TCO studies.

2.2.4 Download or purchase?

Procurement rules, especially European Directive 2004/18/EC, govern when the acquisition of anything, including software, must be put through a public contract, i.e. a formal procurement process such as a call for tenders. As the legal analysis in the Dutch Government's guideline, *The acquisition of (open-source) software*, notes, the acquisition of open source software may not in itself require a call for tenders. This is in the specific situations when this software can be acquired free of charge, i.e. not only free of the licence fee, but also free of any compulsory fees such as for manuals, media or services.

Thus, downloading open source software from Internet repositories free of charge is a means of acquiring software that does not require a public contract. This is true even if the acquiring agency wishes to, in the future, separately acquire paid services or support. For such paid services, of course, a public contract process is required. Regulations *do not* require that the acquisition of software and related services be treated as a single acquisition (which would have to be put out to tender), if the software itself can be acquired free of charge.

Of course, a responsible public administration is not going to simply download software from the Internet with no evaluation of its suitability for organisational

needs. The choice of acquisition through download, possibly followed by tenders for services and support, is just one of the many choices that needs to be evaluated in the process of determining requirements.

The next two sections describe the two ways of acquiring open source software, once a decision has been made that open source requirements match the organisation's needs, and a choice has been made regarding the mode of acquisition for the software itself: downloading or procurement through a public contract. The difference between the two approaches in terms of the effort required by the acquiring agency can be summarised in the table below, which is adapted from the Dutch guideline.

Downloading software free of charge	Purchasing software
Large emphasis on market research	Large emphasis on specification
Knowledge to search for the appropriate software to acquire (download) is required by the agency	Bidders provide some of the knowledge, though preparing the tender specifications may also require considerable knowledge
Services must be tendered separately	Software and services can be included in the same tender

2.3 Downloading open source software

When the public administration has decided that open source requirements are particularly important for a specific software case, the process described in this section can be followed. This process would end in the agency downloading open source software itself, with no fee paid whatsoever. Separately, commercially provided services and support, if required, may be acquired by putting out calls for tender.

Note that this process can be abandoned at any point - for instance, if the software cannot be found easily, or evaluated, or once downloaded is found unsuitable for any reason. At that point, the other approach described in

the next section can be followed, of putting out a call for tender for open source software.

Furthermore, the authors recommend the method of downloading open source software *as part of the acquisition process*. i.e., it is not advisable as a matter of policy, for individuals within the organisation to download whatever they wish¹⁰. As part of the acquisition process, downloading software comes *after* all the steps described above, i.e. the determination of requirements, and is simply an alternative to the step of publishing a tender for the supply of software. It is not proposed here as an alternative to the process of managed, well justified and monitored software acquisition.

2.3.1 Sources of software

Open source software can be redistributed by anyone, so there are naturally many sources for downloaded most open source applications from the Internet. A number of issues need to be taken into account. Although these are not very different from issues that must be considered while selecting proprietary software, it bears reiterating them.

Community & language

While selecting proprietary software, it is useful to get to know about the vendor and support network around the software. Although the evaluation of tenders is based on the documents provided with bids, public administrations may already be aware of solutions available on the market thanks to interaction with vendors, reviewing press articles, trade magazines, analysts' reports etc. For open source software, the process of "getting to know" is similar, except that it can

¹⁰ This depends on the degree of centralised IT administration within the organisation. This guideline is not recommending that downloading software be used as a way to bypass the normal IT management of the organisation. Of course, if IT administration is quite decentralised, there may be no objection to individuals downloading what they choose in consultation with the IT administrators.

be more useful to interact with the community behind a particular open source software application, instead of a particular vendor. As open source software applications can be modified and re-distributed, each typically has a *community* behind it, of different individuals, companies and other institutions - perhaps even public administrations - providing modifications to the software, service and support.

There is often a community of users and developers that interact, and provide some level of mutual support free of charge. Indeed, one of the goals of the OSOR is to foster such a community for open source software of particular relevance to the European public sector - so, eventually, the OSOR will also host communities for various open source applications. Similar collaborative platforms for open source software in the European public sector already play this role in countries such as France, Italy, Spain, and Sweden among others.

Moreover, most major open source projects provide easy access to their communities, and local communities are often available in many countries.

Open source software is particularly suited to multi-lingual requirements, as the freedom to modify and redistribute the software makes it easy for people who speak a particular language to freely add support for it. It is useful to investigate the extent of support for local language versions of the software.

Finally, there are local support groups for many open source software applications, and it is useful to identify them.

Support & reliability

Open source software, like any software, varies in the level of support available and in the software's reliability. Unlike proprietary software, open source software communities can provide a fairly high level of support free of charge. This may not be a practical option for any but the smallest public administrations (or, at the other end, larger agencies with significant in-house IT skills). However, this does mean that the software can be

downloaded and tested, with the help if required of the supporting communities, before any decision is made on whether or not to deploy it (and perhaps acquire commercial support services).

For many open source software applications, having free support via the community is an order of magnitude quicker and more effective than support by a remote supplier. Also, the community can provide updates to software, making error corrections much quicker than is the case for most proprietary software applications. Indeed, commercial open source support providers are often also relying on this free community support, combined with their in-house expertise.

There are also a number of quality models, including semi-automated tools, that provide various metrics of the quality of the open source software and its supporting community (e.g. the speed of bug fixes, size and growth of community, etc)¹¹. Due to the open nature of the software and development process, such metrics can be much more objective in a verifiable way than similar quality metrics for proprietary software¹². However, the authors note that applying such models is a complex task, and public administrations rarely test proprietary software against quality models, so testing open source software against them may not be necessary either, even though it is perhaps easier to do.

Repositories

The software is actually downloaded from repositories of software, or via catalogues, such as freshmeat.net, sourceforge.org, opensource.info and osalt.com. Communities of practice can often be found in such repositories.

¹¹ A number of EU funded research projects are examining open source quality metrics, such as QUALOSS and SQO-OSS (www.qualoss.org; www.sqo-oss.eu)

¹² This does not refer to requirements for quality that can be included in the tender as, e.g., performance criteria, both for open source and proprietary software. This refers to quality metrics that can be publicly available for open source projects but are typically not known or verifiable for proprietary software, where there is a lower chance of public scrutiny of internal development processes such as bug fixing.

An essential aspect of the OSOR portal will be to provide a way of easily accessing and locating open source software for various public sector needs. OSOR will provide access to purpose-built software for the European public sector, as well as a limited amount of software hosted on other repositories. The availability of communities of peers - IT staff from the European public sector and the vendors that support them - will make OSOR an obvious source for the "acquisition through download" approach. It will also make the process of software evaluation simpler, as the opinions and experiences of several public sector IT managers can be shared.

Note that these tasks do not need to be performed within the public administration itself. They can be contracted out, as described below.

2.3.2 Identifying and selecting software

When a number of open source software applications appear to meet an organisation's needs, an evaluation and selection can be performed. This could, first, act as a filter for general reliability and quality as described above, including issues such as maturity, size of the community, availability of commercial support from various sources, etc. And finally, the selection of the software is based on its matching the previously defined functional requirements.

Functional requirements can be matched to the software documentation - website, software manual, etc. Open source software can simply be downloaded and tested - without deployment, or in pilot deployments - to examine the extent to which it meets functional requirements¹³.

Finally, an analysis may be performed of the costs of meeting the functional requirements with the open source software. The solution that is the most cost-

¹³ Of course, proprietary software can also be included in pilot deployments, although if this involves expenditure it may require a formal procurement procedures.

effective may be chosen - considering all the various criteria discussed above. If the solutions identified through this process are unsuitable, the procedure of acquisition through downloading can be abandoned, and replaced with a call for tenders for purchasing open source software as described in the next section.

Note that these tasks also do not need to be performed within the public administration itself, and can be contracted out, as described below.

2.3.3 Tenders for evaluation, support, customisation, services

Downloading software free of charge does not mean there will be no associated costs. While in some cases it may be possible for a public administration to provide all the support for a particular software application in-house, it will often make sense to contract this out. This will naturally require a call for tenders.

To begin with the process of identification, evaluation and selection of software to download does not have to be performed (entirely) in-house at the public administration. Depending on skills and resources available, it could be useful to have a public contract for some of these tasks. A condition in such calls for tenders should exclude the winning bidder from further contracts (such as for services, support) related to the software selected with their assistance, to prevent a conflict of interest and ensure their role as an honest evaluator of open source download choices. Of course, a new tender is not required for every case of software selection. This assistance for evaluation and selection could also be performed by a firm with a pre-existing contract for such on-going consultancy services, although such a firm should also be excluded from the provision of services related to the software they help to choose.

When a final selection has been made for the choice of software to be downloaded, with or without the assistance of a contractor, the software has to be installed, maintained, supported. Note that downloading software with no contractual arrangements is free of charge, but

also means that the software usually comes with no warranties. In fact, this is true also for much proprietary software, especially "off-the-shelf" software, where licences typically disclaim warranties. As with proprietary software, entering into a service or quality assurance contract of some sort is the main method for a public administration to share some of the responsibility for its use of open source software.

The software may be customised - the ability to be customised extensively is a key advantage of open source software, and customisation may be one reason open source was selected by the public administration in the first place. Although limited free support may be available from the open source community, including the OSOR community in the case of public sector software, a contractor will usually have to be selected. For all such additional services, open, competitive calls for tenders should be used to select suppliers.

A key property of open source software is that anyone can provide support or other services, depending on their skills. The market is thus fully competitive. No proprietary control or advantage rests with an "owner" or "sponsor", or their dealers and agents. In a call for tender placed for the purchase of specific proprietary software or related services - which works against a competitive market and may violate procurement rules - only the proprietor itself or dealers necessarily dependent on the proprietor can bid. In a call for tenders placed for the purchase of services related to a specific open source software system, any independent supplier can bid. The difference is like that between a tender for the supply of Peugeot cars or services for Peugeot cars (for which only firms dependent on Peugeot can bid), and a tender for fuel and tyre service for a car (for which anyone with no ties to a particular car company can bid).

Nevertheless, there may be a situation, because of the location, size of the market for a specific open source software application, or other reasons, where few suppliers of services exist. If so, and there is reason to believe that the competition for supply of such services is limited, the public administration can provide for a

tender process that awards contracts in multiple lots over time, allowing time for independent competing providers to develop. I.e., the public administration can issue separate calls for the evaluation of the software, customisation, installation, and periodic support contracts, accompanied or preferably preceded by appropriate publicity concerning its intended use of that software. This provides a better chance for potential providers to prepare to support the software.

However, if there is a doubt regarding the competitive potential for supply of services for a specific software, then it is better not to acquire that software through downloading; rather the supply of the software and related services should both be through calls for tender, as described in the next section.

2.4 Purchasing open source software

Is it possible to issue a call for tenders to purchase a specific open source software application? The simple, practical answer is yes. As shown in the annex to this guideline on the current situation in the EU, the practice of issuing calls for tenders for specific, named *proprietary* software applications is widespread, even though it is explicitly limited to the proprietors of such software and their agents. This may be out of line with applicable rules, but a tender for a specific open source application, for which anyone can bid, is less out of line. Note that a tender for only the supply a specific open source software product may be pointless as it can be downloaded free of charge, but the above argument also applies for tenders for the supply and installation, integration or support of a specific open source software product.

This guideline is about promoting good practices that clearly meet procurement rules and provide for a competitive and transparent procurement process. So the authors do *not* recommend issuing a call for tender for the supply and service of installation of a specific open source software. The authors do not even recommend issuing a call for tender for un-named software, with "open source" as one of the selection criteria.

As discussed in the previous section, the authors recommend best practice procurement based on the definition of *functional requirements* - which may include properties that are equivalent to the characteristics of open source software.

2.4.1 Defining requirements

Calls for tenders for open source software - like all calls for tenders - should be based on functional requirements, not on specific products or vendors. Properties of open standards or open source software may be part of these requirements - either as minimum requirements, or as properties that will be favoured.

Functional requirements

The authors recommend that the tender specify the function of the software in detail, to ensure transparency and objectivity in the procurement process. The purpose of the software to be acquired and its essential attributes should be described in a vendor-neutral manner. This is a general principle of public procurement; the authors focus here on the *additional* functional requirements relating to the open source nature of the software, and open standards.

It is important to distinguish between open standards and open source software. A call for tenders may require or prefer properties relating to either one or both of these. Standards are technical specifications. Open standards also have non-technical properties, relating to the how the standard is controlled and developed. Open source requirements are essentially non-technical, concerned with the licensing terms governing use of the software.

Open standards

Official European standards can be required as part of the technical specification in a call for tenders, as can national standards where no European standard exists. A call for tenders can also include technical specifications of a desired standard.

In practice, since the technical complexity of standards can be high, standards are referred to in tenders simply by name

Open standards can be required just as with standards in general, referring to the open standards by name, or by referring to an official list of open standards. However, if there is no definition of open standards that has been adopted as applicable to the procuring public administration, or any officially approved list of open standards that can be cited, the standard may have to be defined in terms of functional specifications. In this case, it may be required to explicitly allow bids using technologies that are "equivalent" in technical terms but do not have the desired properties of openness. Thus, these properties of openness could be included among the tender award criteria. This way, the openness of standards can be specified as a preference (through the weight given to it in the award criteria), or a requirement (by making it a minimum award criteria).

The openness of standards used can also be useful award criteria where no specific standards are specified in the technical requirements - e.g. because the call for tenders does not include detailed technical specifications and expects these to be proposed by bidders. In such cases, different bids using different technical standards may be provided, and obligatory or weighted award criteria regarding the openness of the proposed technologies can be used to evaluate the price/quality ratio.

Including open standards requirements or preferences in award criteria is straightforward: the properties of open standards could be described, together with a justification if required. Since the justification is part of the essential needs as determined by the public administration, a specific definition of the term open standards is, while useful, less important. For software applications, the needs of a public administration may typically require that:

- *the standard is implementable by all potential providers of equivalent technologies, ensuring sustainability and full competition with no advantages for some*

actors based on patent or copyright royalties or restricted availability of the technical specifications; in addition, the standard should not discriminate against open source software solutions¹⁴.

- *the development of the standard is open and transparent*, so that the public administration is not dependent on one party for the future of the standard, and may even influence its further development
- *no restriction on re-use*, so that the public administration can be certain that other public or private organisations can use the standard, and so that the use of the standard in open source solutions - which are often not compatible with re-use restrictions - is possible.

Note that these typical public administration needs can be met by standards that fulfil the open standards definition contained in the European Interoperability Framework and many other open standards definitions.

Open source

As mentioned at the start of this section, it is not good practice to simply state that software should be "open source". Rather, the properties of open source software should be described and justified.

Moreover, open source is not part of the technical nature of the software; it applies to the conditions with which the software is provided. Thus, the desired properties of open source could be included as part of the tender award criteria. This way, open source can be included as a preference (through the weight given to it in the award criteria), or a requirement (by making it a minimum award criteria).

Including open source requirements or preferences in award criteria is straightforward: the properties of open

¹⁴ The open source non-discrimination requirement is included in the draft version 2.0 of the European Interoperability Framework.

source could be described, together with a justification if required. The needs of a public administration may typically require that:

- *the ownership of the software is transferred to the public administration, with no restrictions on what the agency can do with the software; OR:*¹⁵
- *the software may be used for any purpose as the public administration does not want to be restricted in how it can use (or allow others to use) the software*
- *the public administration or a third party of its choice may study the source code as the public administration wants to be sure of the functioning of the software; alternatively, the public administration may require that any member of the public can study the source code, in order to promote transparency of government processes, or enable other parties to provide support and training associated with the software.*
- *the public administration or a third party of its choice may modify the software as the public administration does not wish to be dependent on the original vendor for bug-fixes, adaptations and other modifications*
- *the public administration can distribute the software, with source code and modifications, to anyone of its choice and provide recipients with the same abilities to use, study, modify and redistribute because the public administration needs to ensure that citizens and firms and other agencies that access its services using the software or variants of the software do not need to become customers of the original vendor in order to do so; for example, a national administration may wish to be able to pass on the software, without extra costs, to other*

¹⁵ Note that some of the requirements below may be met by proprietary software under specific licensing terms, but if all of these requirements are met, the software is by definition open source.

administrations at the local, regional, national or European levels.

When supported by an official policy at the European, national or local level, such award criteria may not need explicit justification in each tender. Even otherwise, such criteria need only to be *justifiable* - i.e. if questions are raised - rather than justified in each tender. But there is no harm providing explicit justification and references, and it is always a good practice to (briefly) explain why certain criteria are present. For instance, the explanation for the Dutch government's preference for open source software is "promotion of a level playing field in the software market and promotion of innovation and the economy".

2.4.1 Other requirements

In addition to technical, functional requirements and the non-technical properties of open source and open standards, calls for tender typically have other criteria for awards and determining the eligibility of bidders.

While most of these criteria do not affect the procurement of open source software, one additional criterion is relevant here.

One property of open source software that distinguishes it from proprietary software is that it can be provided on an equal basis by small, innovative companies, limited only by their skills and abilities rather than their dependence on the software proprietor. However, small companies may have difficulties meeting stringent eligibility criteria with regard to financial sustainability.

Selection criteria for financial sustainability (minimum turnover, capital) should be in proportion to the scope of the tender¹⁶. The main justification for financial sustainability criteria for software is to ensure that the supplier will be able to provide support as long as the software is being used.

¹⁶ Directive 2004/18/EC, Article 44(2).

With open source, the availability of the source code assures interoperability, and there is no dependence on the original supplier. If the original supplier goes out of business, the software can still be maintained by others; if others are not maintaining the software, the public administration can hire a third party maintainer. This increased sustainability of open source is justification for lowering the financial sustainability requirements, or lowering their weight in the selection process for tenders for open source software.

2.4.2 Tender selection

Bids responding to the call for tenders must be evaluated and the best offer chosen. The best offer can either be determined simply by the lowest price, or the best value for money, where the ratio of the price to the value as determined by the weighted award criteria is evaluated.

In case of a preferential policy regarding open source - such as with the Dutch government's "preference for open-source software in the case of equal suitability" , if bids have the same price (in case of a lowest price tender) or the same value-for-money, the open source bid is selected.

This policy does not really affect the tender process described in this section, as the likelihood of exactly the same evaluation of two bids is probably not high. Moreover, the inclusion of open source requirements as part of the tender award criteria is independent of any policy regarding open source in procurement; it requires no preferential policies and works within any procurement procedures.

2.5 Conclusion

This guideline has explained why it may be useful for public administrations to acquire open source software, and more importantly, how they can do so within the current procurement rules, once a decision is made.

This guideline has shown how open source software can even be downloaded free of charge without a call for tenders, and provided criteria that can be included in tenders to ensure good practice procurement of software.

An annex to this guideline provides an overview of the IT market in Europe especially as it concerns open source software and public procurement, and document the extent of poor practices in public procurement of software today. Today's software procurement is far from a "level playing field", and widespread preferences in public tenders for specific, named, proprietary software and their vendors is one justification of why this guideline is needed.

A further annex provides an overview of the legal issues involved in public procurement of software and shows how the procedures outlined in this guideline comply with legal requirements. Finally, an annex with "ready-to-use" text for tenders aims to simplify the process of translating the suggestions contained in this guideline into actual calls for tenders.

This guideline is about procurement of software, but the authors note that one of the properties of open source is that it promotes collaboration and participation, rather than just consumption through public procurement. The OSOR provides a platform for collaboration among public administrations in Europe: from finding out about open source; selecting, evaluating and downloading software; getting support from peers and suppliers; and even developing and releasing software. The authors encourage you to participate in the OSOR community to make the most of open source software.

A. Model template texts for tenders

This short annex provides some templates for text that can be used while preparing tenders for the procurement of open source software and software based on open standards. This annex should be read as a source of possible implementation of the recommendations provided in section 2.4 of the main guideline, "Purchasing open source software".

Naturally, the texts here may require some adaptation for inclusion in tenders, depending on the precise policies and requirements applicable to each public administration and each tender. The texts are provided following a checkbox approach, allowing the reader to combine texts as appropriate.

A.1 Functional / Technical specifications

Unfortunately, it is not possible to provide ready-to-use texts for functional specifications - the core component of any tender. The authors can only emphasise here how important it is to further good practices and apply the principles of procurement by using clear and precise functional specifications, rather than brand names or product names, although open standards could be cited by name.

A.2 Open source requirements

Following functional specifications for the software, the authors recommend that open source requirements be placed in the award criteria, and not in the functional specifications.

Open source award criteria

The following text could be included as an award criterion.

The ownership of the supplied software, including all associated intellectual property rights, is to be transferred to the contracting agency with no restrictions on what the contracting agency may do with it; OR, the software is to be supplied to the contracting agency under the following terms and conditions:

- 1. the software may be used by the agency for any purpose the agency sees fit*
- 2. the contractor will provide the complete source code and documentation for the software so that the software can be studied by the contracting agency or any third party or parties of its choice*
- 3. the software may be modified by the contracting agency or any third party or parties of its choice*
- 4. the contracting agency may distribute the software, with source code and modifications, to any party of its choice, under terms and conditions allowing such parties the same freedoms retained by the contracting agency, as described above, to use, study, modify and redistribute the software.*

If the supplied software is required to be open source

The open source award criterion should be specified as an obligatory criterion that must be met.

If other criteria exist and a weighting/scoring system is being used, the open source criterion should be an obligatory criterion and the other criteria can be evaluated according to their weights.

If the supplied software is preferred but not required to be open source

A weighting/scoring system should be used. The weight for the above open source criterion should be set to the level of preference for open source deemed appropriate for the tender, depending on the justifications and requirements. For example, suppose the weight for the open source criterion is set at 20%, and that the winner

selection formula is the total quality score divided by the total price. In that case, if two competing bids, one for proprietary software and one for open source software, exactly match in terms of quality and other award criteria, the open source bid will be selected unless the proprietary bid has a price that is 20% lower. In this case, the public administration believes the value of the open source properties of the software are worth a 20% premium in the immediate price of the tender (e.g. due to presumed long-term cost advantages that are not included in the tender price).

A.1 Open standards requirements

Along with functional specifications for the software, the standards must be described in the technical specifications of the tender. Each standard must be defined by reference (or name), if it is an official standard that is permissible to cite this way, or a widely known specifications that are not formal standards in the legal sense, but can be described by name: TCP/IP, HTML, XML, SMTP, etc.

It should already be known at the point of preparing the tender whether or not any given named standards meet the openness requirements of that tender. Thus, standards that do not meet such requirements can simply not be listed in the technical specifications.

If the technical interfaces, formats or protocols cannot be named, they must be defined in the technical specifications. Each standard thus defined must be clearly identified in the technical specifications, for example, each defined (unnamed) standard can be numbered, using text such as:

"This specification is referred to in this call for tenders as Open Standard #1"

Open standards award criteria

Standards which are named in the functional specifications have presumably been screened for their openness attributes prior to the tender procedure. This

may have been done at the European, national, regional or local level, or by the procuring agency itself. Thus, if only named standards are being used, there is no need for award criteria specifying the openness of standards, as the named standards have been assumed to meet any procurement requirements.

If interfaces, protocols or formats are defined in functional terms in the technical specifications, as described above, award criteria may be required in order to ensure the openness of any implementation. Award criteria may also be required if the technical specifications of the tender does not detail all the standards that may be included in a procured solution. For example, the call for tenders may require bidders to propose the standards they intend to use, and evaluate each bid on the basis of the openness of the technologies proposed. In this case, the openness could be specified in award criteria.

There is no universally accepted definition of open standards; this guide has used the definition of the European Interoperability Framework version 1.0¹⁷. However, a definition of open standards is not required in order to actually have tenders preferring or requiring open standards, if each tender actually includes justifiable award criteria for the openness of standards.

Here the authors provide text consistent with the EIF v1.0 definition of open standards. Thus, the following texts could be included as an award criterion.

If the technical specification functionally defines unnamed but numbered protocols, interfaces or formats

The following text could be included as part of the award criterion for openness of standards:

The supplied solution must implement the technologies referred to in the Technical Specifications as Open Standards #1 [#2, #3 etc]. Each of these technologies, as

¹⁷ This guide is currently a draft version; the final version may use the definition of open standards included in version 2.0 of the European Interoperability Framework, which is currently also a draft.

implemented in the supplied solution, must have the following properties:

If the technical specifications do not include standards, but allow the bidder to propose various technologies and standards in their proposal

The following text could be included as part of the award criterion for openness of standards:

The supplied solution may implement a number of standards, interfaces, protocols or formats, each of which, as implemented in the supplied software, must have the following properties:

Openness properties for standards

For either case above, the text is followed by the openness properties for open standards:

- 1. it is implementable by all potential providers of equivalent technologies*
- 2. its past and future development is open and transparent*
- 3. there is no restriction on its re-use*

Note that if it is not seen as essential or justified to be consistent with the EIF v1.0 definition of open standards, it is possible to use some of these properties alone, or to separate them into individual award criteria rather than combining them into a single one. That way, bids that meet some of the properties of open standards will still get some weighted score, even if they do not meet all the properties.

If the supplied software is required to use open standards

The open standards award criterion should be specified as an obligatory criterion that must be met.

If other criteria exist and a weighting/scoring system is being used, the open standards criterion should be an obligatory criterion and the other criteria can be evaluated according to their weights.

If the supplied software is preferred but not required to be implementing open standards

A weighting/scoring system should be used. The weight for the above open standards criterion should be set to the level of preference for open standards deemed appropriate for the tender, depending on the justifications and requirements.

Weighting and scoring can also be used if not all the properties of open standards as translated into award criteria are seen as equally important or essential. For instance, if it is seen as *essential* that the standards is equally implementable by all potential providers of equivalent technologies, and that there is no constraint on re-use, but the transparency of development while preferred is not essential, the openness attributes could be separately listed with #1 and #3 being obligatory and #2 being weighted.

B. Guideline to legal issues

This annex is intended to clarify, for legal and procurement officers in public administrations, some legal issues relating to the acquisition of open source software:

- Are current software procurement practices in line with applicable rules?
- How do the procurement procedures recommended in the guideline fit with applicable rules ?
- What other specific legal issues should be taken into account while acquiring open source software?

Note that this annex does not aim to provide detailed legal advice on the liability and risks of public administrations *developing* or *distributing* open source software. It focuses on the legal issues related to software *acquisition*.

Legal framework for procurement: Directive 2004/18/EC

The legal basis for procurement in the EU is Directive 2004/18/EC (See Official Journal of the European Union, L 134, 30.4.2004, p.114). This states that procurement should be based on principles, in particular the principle of equal treatment, non-discrimination, and transparency, and that procedures should guarantee the opening-up of public procurement to competition¹⁸.

These principles and their application are elaborated further in the Directive. Their relevance and application to software procurement is detailed in the next sections. In brief, these principles require that tender specifications and award criteria be transparent so that, in general, any potential tenderer can understand them; and that the specifications and criteria do not discriminate against any economic operator. This guideline shows how certain

¹⁸ Directive 2004/18/EC, Recital 2

common procurement practices may not be following these principles, as they appear to favour specific proprietary products and their vendors. This guideline shows how procurement of OSS can be achieved through transparent, non-discriminatory functional specifications and award criteria, allowing all economic operators to meet the justifiable needs of public administrations.

B.1 Current tendering practices: in line with applicable rules?

As the examples and survey evidence in the annex to this guideline, *"Current situation in the European Union"*, shows, the following activities occur with surprisingly high frequency in public procurement of software:

- calls for tender for specific, named companies and products, while claiming to use the "open" tendering procedures
- calls for tender for named products, as above, using "negotiated" procedures with weak justification (the named company "owns the Intellectual Property Rights" for the required software)
- calls for tender that do not require software from specific companies, but require compatibility with previously purchased proprietary systems (with proprietary software or proprietary standards)

None of these forms of procurement can be recommended as good practices. It is clear that they are harmful for a competitive use of public funds, and provide public funding for specific favoured vendors. The reasons to avoid such procurement practices are the same in software and related services as for the procurement of pencils or cars.

Directive 2004/18/EC states that *"Technical specifications shall afford equal access for tenderers and not have the effect of creating unjustified obstacles to the opening up of public procurement to competition."*¹⁹ The types of procurement

¹⁹ Directive 2004/18/EC, Article 23 (2)

shown above clearly create obstacles to the opening up of public procurement to competition; indeed, they exclude competition. Such closing down of public procurement to competition, in particular through reference to specific products or sources, is allowed by the Directive only if it is "justified", on *"an exceptional basis, where a sufficiently precise and intelligible description of the subject-matter of the contract [in functional terms or with reference to European standards] is not possible"*²⁰.

Most of the current procurement "bad practices" the authors identify are for software (e.g. office productivity software; Internet tools; database systems) that is clearly possible to define in functional terms. Perhaps one of the "functional" requirements is often "compatibility with software X from vendor Y", but that is not a legitimate functional requirement according to the Directive²¹. Instead, good practice for software procurement suggests that such compatibility requirements might refer solely to compatibility based on open standards.

Meanwhile, the authors note that in the closely related area of computer *hardware*, the European Commission stated in relation to tenders from a number of countries for "Intel-compatible" computers that: *"Reference to a specific brand would, in the Commission's view, constitute a violation of Directive 93/36/EEC on public supply contracts²², while merely specifying a clock rate – which is insufficient for assessing the performance of a computer – would be contrary to Article 28 of the EC Treaty, which prohibits any barriers to intra-Community trade"*. The European Commission further noted that *"authorities in those countries describe the technical characteristics of the computers they wish to acquire in a discriminatory fashion"*.

Current eProcurement practices

²⁰ Directive 2004/18/EC, Article 23 (8)

²¹ Directive 2004/18/EC, Article 23 (8) allows for the reference to brands only if it is not possible to describe the subject matter in terms of standards or functionality. Software can usually be described in terms of functionality or standards rather than a brand name.

²² amended and consolidated by Directive 2004/18/EC

The annex on the current situation in the EU identifies cases of tenders that require bidders to use proprietary software from named vendors in order to access eProcurement services to send an electronic bid, or to receive tender documents in electronic form.

Directive 2004/18/EC Recital 12 states that "*Contracting authorities may make use of electronic purchasing techniques, providing such use complies with the rules drawn up under this Directive and the principles of equal treatment, non-discrimination and transparency.*" Article 42(4) also specifies that "*tools to be used for communicating by electronic means, as well as their technical characteristics, must be non-discriminatory, generally available and interoperable with the information and communication technology products in general use.*" While some proprietary products, certainly Microsoft Windows and Microsoft Office, may indeed be interpreted as a technology product "in general use", requiring bidders to use products from specified vendors is certainly discriminatory, and does not provide for equal treatment. Of course, this issue concerns eProcurement in general, and is not directly related to the procurement of software.

Good practice procurement of software

Good practice procurement of software should, like hardware, include descriptions of technical characteristics that do not favour specific vendors. i.e., software should be described through the use of *functional specifications* as described in the main text of this guideline.

This guideline is not a general guide for good practice procurement of software, but for good practice procurement of open source software. Nevertheless, the authors would like to note that tenders that use functional specifications, instead of the use of proprietary brand names, would provide for more competition in procurement.

Moreover, procurement rules provide for the use of *variants*²³, allowing for bidders to propose multiple

²³ Directive 2004/18/EC, Article 24

solutions for the same tender. Tenders allowing the provision of variants would allow bidders to suggest, for example, solutions with an open source software or proprietary software alternatives.

Variants may even include different pricing models²⁴, with the price for the open source variant being based on service charges rather than licence fees. Using functional specifications and allowing variants would ensure that the public administration ensures a more transparent and competitive process of procurement, whether the end result is the selection of open source or proprietary software.

B.2 Procurement of OSS: in line with applicable rules?

The primary regulation governing procurement (including of software) in the EU is Directive 2004/18/EC. The Directive takes due account of the World Trade Organisation's Government Procurement Agreement. It is implemented by conforming national rules in each Member State.

Good procurement practice is to define software requirements in functional terms, with performance requirements and functional requirements as provided for by Directive 2004/18/EC. Such procurement would not discriminate in favour of specific companies.

There is a prohibition in procurement that results in advantages or disadvantages for named businesses. However, there is no prohibition in procurement following any criteria that match an agency's requirements, even if such requirements result in disadvantages for businesses implementing certain business models.

Since one of the aims of public procurement rules is to *"guarantee the opening-up of public procurement to competition"* favouring a specific business model that

²⁴ A variant may not be rejected on the sole grounds that it will *"lead to either a service contract rather than a public supply contract or a supply contract rather than a public service contract"*, Directive 2004/18/EC, Article 24

reduces competition may be problematic. But the open source business model supports competition, by allowing an unlimited number of independent vendors the equal opportunity to support, adapt and control the same software.

Thus, it is possible, if necessary to meet the agency's requirements, to favour the open source business model in procurement - by downloading software and putting out tenders for services, say, or by specifying open source compatible terms in the award criteria - as long as it is justified by the procurement principles such as transparency and opening up to competition.

The sections below discuss the legal issues specific to each form of acquisition of open source software.

B.2.1 Acquiring open source software without tenders

Public procurement of goods or services must normally be through a public contract process, typically through a call for tenders. The acquisition of software, however, is often done by downloading this software from websites on the Internet. This is particularly the case for open source software. An obvious question is whether public administrations are in line with procurement rules if they too acquire (open source) software simply by downloading it from the Internet.

The legislation covering public procurement is very specific. Directive 2004/18/EC concerns itself with the award of "*public contracts*". In particular, Article 28, which defines procurement procedure, states that "[*contracting authorities*] shall award these public contracts by applying the open or restricted procedure"²⁵.

The procurement procedures are applicable only to the award of public contracts. Directive 2004/18/EC Article 1(2)(a) defines the term "public contracts" as "*contracts for pecuniary interest concluded in writing between one or more economic operators and one or more contracting authorities.*" When software is downloaded from the Internet, it may

²⁵ Additionally, certain other procedures are allowed for particular circumstances.

certainly involve contracts and fees, and therefore involve a "public contract". When software is made available free of charge for download on a publicly accessible website, there may be no fees involved - this applies to open source software, but also proprietary software when it is freely downloaded, such as Adobe Acrobat Reader or Microsoft Internet Explorer.

Not a contract?

When software requires agreement to specific terms prior to its download, e.g. through the use of a "click-wrap" licence agreement which you must accept in order to download, there is a contract being concluded, even if no fee is paid. When no such explicit agreement is required, as in the case of open source software, there is an argument in legal literature that no contract is concluded. In some jurisdictions (e.g. the US) it is fairly clear that an open source licence provides a permissive grant under copyright law, and contract law may not be involved at all. However, in Europe, the situation is less clear-cut²⁶, as any agreement implicit or explicit frequently invokes contract law. Nevertheless, in one of the rare European cases considering an open source licence, in 2004 the District Court in Munich ruled that while the open source licence (GPL) *was* a contract, the enforcement of the licence was simply through remedies for copyright infringement²⁷.

Not being a contract may not, thus, necessarily be a way to exempt free-of-charge downloads of open source software from procurement regulation. Instead, the authors focus on whether the software download implies a contract for *pecuniary interest*.

Pecuniary interest?

²⁶ See e.g. Thole, E.P.M., Seinen, W., Open-source software licences: a civil-law analysis, in *Computing and Law* 2004/34.

²⁷ The court ruled that it was not necessary to decide whether or not a valid contract had been concluded between the licensor and licensee; if the licensee claimed the contract was invalid and had not been agreed to, then the licensee had no licence for the software and was simply infringing the licensor's copyright. See LG München, Az. 21 O 6123/04. English translation available online at: http://www.jbb.de/judgment_dc_munich_gpl.pdf

The legal framework clearly excludes the download of open source software from the definition of "public supply contracts", which involve the "*purchase, lease, rental or hire purchase, with or without option to buy, of products.*" However, European case law suggests that the absence of payment for a good or service may not automatically mean that its acquisition does not involve a public contract²⁸. In the case of downloading open source, it needs to be seen whether any other form of compensation is being provided to the software licensor²⁹ in return for the acquisition of the software. The definition of open source prevents an open source licence from requiring compensation, so if the software is indeed open source, no such compensation can exist.

There may be one exception, in the case of a licence³⁰ that requires that the Licensor receive an automatic licence to any changes made to the software by the public administration. This could be seen as compensation. However, this special case applies only when the public administration intends to make changes to the software, and does not affect most open source licences, such as the popular GPL³¹, which require that modifications be made available to anyone under the same licence, but not that modifications be made available to the *Licensor*.

If the software is open source it is most likely that there will be locations where free-of-charge downloads are available. However, if a fee is required for the download of the software, then the acquisition of that software is clearly subject to the regulations concerning "public contracts".

Tenders for services

As described in the guideline, most acquisition of software by download is likely to be followed by the

²⁸ For example OJ C 2007/C 56/07 Case C-220/05 (OJ C 193, 6.8.2005) , Auroux/Roanne.

²⁹ Any contract implicit in downloading software , in the form of acceptance of the licence, is concluded between the public administration performing the download and the copyright holder(s) of the software who is/are the licensor(s).

³⁰ Such as the Reciprocal Public License, see <http://www.opensource.org/licenses/rpl1.5.txt>

³¹ GNU General Public License, see <http://www.gnu.org/copyleft/gpl.html>

procurement of services of some sort, such as software configuration, custom adaptation or development, integration with other software, maintenance and support. The guideline also suggests that the service of evaluating the download options is something that could be contracted out if necessary, prior to the download.

Any such services, being paid for, are clearly subject to the procurement rules as they are "public contracts" as defined by Directive 2004/18/EC.

For the acquisition of proprietary software, a public administration puts out a tender for a public supply and service contract; or separate contracts for public supply (of the software licences) and services (for support, integration etc). In the scenario of downloading open source software, there is no longer a contract for public supply. Could this be seen as a violation of the prohibition against "subdividing" procurement in order to bypass the procurement regulation?

Directive 2004/18/EC Article 9 (3) states that *"No works project or proposed purchase of a certain quantity of supplies and/or services may be subdivided to prevent its coming within the scope of this Directive."* Does "subdivided" in this sense cover the splitting of an acquisition of open source software into a free-of-charge download plus a paid service contract? In fact, the subdivision ban is within Section I (*Thresholds*) and relates to Article 7 which states that the Directive applies (usually) to public contracts above the value of Euro 133 000. Article 9 specifies how the value of a public contract is to be calculated in order to measure if this is above the thresholds and thus within the scope of the Directive. It prohibits the subdivision of a public contract that would fall within the scope of the Directive due to its value being above the threshold into multiple public contracts some of which are below the threshold and thus outside the scope of the Directive. By definition these multiple public contracts must have some value, as they are "contracts for pecuniary interest".

However, even if the software download was included as part of a public contract for services, it could not add to the value of the contract, if the software itself is to be

acquired free of charge. The acquisition of software through free-of-charge downloading is without value - not a "contract for pecuniary interest" - and is not a public contract at all in the meaning of Directive 2004/18/EC. Thus, it does not come within the subdivision ban.

The authors reiterate that the software download must be truly free of charge, with "no strings attached", in order to fall outside the definition of a public contract. E.g., if the download is *conditional* on a particular entity receiving a contract for services, the download is clearly not free of charge, and is thus a public contract, and indeed cannot be subdivided from the public contract for services. The value of the software and of the services must be calculated and if they are together above the threshold they must be procured in line with the Directive's regulations. (If the software and services together are below the Directive's thresholds, they may still come under national regulations for procurement.)

In general, however, the download of open source software is available somewhere without such strings attached - indeed, this is a consequence of the open source definition³².

The subdivision rule may also be relevant if the conditional link between the download and services is not imposed on the source of the software, but is a requirement of the acquiring public administration itself. For instance, if the agency can only use software if it is modified after download, then it may need to combine the contract for the software and the service for modifications.

Finally, the authors note that many services for downloaded software may be performed by on-going framework contracts, and therefore may not need new

³² The open source definition does not require that software be distributed free of charge. However, since it requires that all distributors of software can further distribute it free of charge, the economic consequence is that most open source software is available for free of charge download on a publicly available website on the Internet. For exceptional open source software applications for which the public administration is not able to find a source for free of charge downloads, the scenario described here clearly does not apply. A tender will be required to acquire such software applications.

contracts that are put out to tender. This could apply both to pre-download services such as searching for and evaluating software to download, as well as post-download services such as customisation, installation, maintenance and support.

Supplementary services and competition

A call for tender may be published for services for support of any named product that has been previously acquired. Clearly, this favours firms that provide services for that product. This is not, in itself, against procurement principles. When this happens following the acquisition of proprietary software, as in some of the "bad practice" examples in the annex on the current situation in the EU, this may have an anti-competitive effect. This is because many services relating to or depending on proprietary software previously acquired by the public administration will require that the service provider has a relationship of dependence on the proprietor of that software.

With open source software, there are no software proprietors so service providers are not dependent on them. There can be any number of service providers for a given open source software application, and all of them have equal access to the software. Open source software is pro-competitive. Thus, a call for tender for services for support of a previously acquired open source product will not normally lead to anti-competitive effects.

Nevertheless, in specific cases, there may be a situation of limited competition for the supply of services for an open source software application, since open source is defined only by its software licence, not by a real situation of competition. For instance, a vendor may decide to release proprietary software as open source on a public website, in order to supply it to the government. If the software is immediately acquired by the public administration through the download scenario, it may be that the original vendor, or its dealers or representatives, are the only service providers.

In such a situation, a call for tenders for services could have an effect that, while not against procurement principles, is as anti-competitive in effect as a call for tenders for services of previously acquired proprietary software, at least in the short term.

If there is any doubt as to the ability of multiple, competing firms to provide services for a given software, the download method of acquisition is best avoided, and software together with services should be procured by tender.

Regulations and practical procedures

While there appears to be no legal obstacle to downloading open source software from the Internet without a public contract process, this does not mean that uncontrolled downloading is a good idea.

The downloading of software, as described in this guide, is a part of the formal process of IT acquisition in a public administration. It should take place as an acquisition option, but within the framework of the rest of the formal process. i.e., downloading software should occur within the framework of IT decision making, following a determination of requirements and a proper consideration of all options - software, business models, etc - so that it represents the most appropriate solution for the public administration's needs.

B.2.2 Tenders specifying open source software or open standards

As noted in the beginning of this section, while it may be practically possible to publish a call for tenders requiring the supply of "open source software", as this is no worse and perhaps less anti-competitive than the common practice of tenders requiring the supply of specific proprietary software products, this is not recommended.

Good practice requires, as the guideline recommends, that a proper determination of the public administration's requirements is made, and translated into functional specifications for the software to be acquired. In theory,

there are two parts of the tender where the choice of open source software could be expressed: the technical specifications, and the award criteria.

Technical specifications

Technical specifications are governed by Article 23 of Directive 2004/18/EC. This states that specifications must be clearly described in the tender, and that they must refer to a defined set of European, national or international standards³³. Alternatively, specifications may be defined in terms of "*sufficiently precise*" performance or functional requirements³⁴.

It is clearly important to precisely define functional requirements in technical specifications, for any tender. However, requirements for open source software do not quite fit in here.

Requirements for open standards do fit, to the extent that the open standards are recognised under the terms of the applicable regulations or have been defined in terms of functional requirements within the technical specifications. But the "openness" criteria of open standards do not fit within the technical specifications. If the standards are named and pre-defined, it will already be known at the time of preparing the bid if they meet openness criteria, and thus the criteria need not be listed in the tender at all. If the standards are not named in the functional specifications but are defined in the tender's technical specifications, openness criteria are non-technical and do not fit here. Similarly, if no standards have been listed or defined in functional terms, but may simply be proposed by the bidders in their own

³³ Directive 2004/18/EC, Article 23(3)(a): technical specifications must be formulated by reference "*in order of preference, to national standards transposing European standards, European technical approvals, common technical specifications, international standards, other technical reference systems established by the European standardisation bodies or — when these do not exist — to national standards, national technical approvals or national technical specifications relating to the design, calculation and execution of the works and use of the products*". For software, the standards as defined by Directive 98/34/EC would apply.

³⁴ Directive 2004/18/EC, Article 23(3)(b)

proposals, any openness criteria, being non-technical do not fit here.

When interfaces, protocols or formats have been functionally defined in technical specifications, or bidders have been allowed to propose standards, interfaces, protocols or formats of their choice, a bidder could provide a solution using proprietary standards.

Technical specifications clearly refer to the function of the product to be supplied, i.e. the functioning of the software. The "open" properties of both open source software and open standards are essentially non-technical in nature. They refer to development processes and terms and conditions of use (i.e. licensing).

The authors recommend, therefore, that "Openness" for software as well as, when applicable, for standards, be addressed as part of the award criteria.

Award criteria

Once technical specifications are met, a tender must be selected on the basis of award criteria. The selection must be on the basis either of *"the lowest price"* or *"the most economically advantageous from the point of view of the contracting authority"*³⁵. Where quality and not price alone is the deciding factor, it is the second method that is used. This method should be used in order to implement "openness" criteria, whether for open source software or open standards.

The only constraint on the criteria allowed in addition to price, in order to determine the economically advantageous tender, is that the criteria are *"linked to the subject-matter of the public contract in question."* Several examples of such criteria are provided in the Directive: *"quality, price, technical merit,... functional characteristics, running costs, cost-effectiveness, after-sales service and technical assistance, delivery date"*³⁶. "Openness" properties, such as licensing terms of the software, like other terms of use, clearly fit in here. These criteria are obviously related

³⁵ Directive 2004/18/EC, Article 53.

³⁶ Directive 2004/18/EC, Article 53(1)(a).

to the subject-matter of the tender, as well as to the evaluation of economic advantageousness from the point of view of the contracting public administration. Of course, the criteria needs to be justifiable - and this guideline indicates numerous justifications for various properties of open source software and open standards. Moreover, the authors note that regulations specifically allow award criteria to contain "*social requirements*"³⁷ in addition to economic and qualitative requirements, allowing for further justifications for the criteria, such as making available government services to all citizens without requiring them to become customers of specific vendors.

In order to ensure transparency, it is not sufficient to state that "open source software" is an award criterion. Award criteria must be detailed with "*the necessary transparency to enable all tenderers to be reasonably informed of the criteria and arrangements which will be applied to identify the most economically advantageous tender*"³⁸.

As detailed in the guideline, award criteria could therefore include (some or all of) the attributes of open source software, ideally with explanations providing justification:

- *the ownership of the software is transferred to the public administration* **OR:**
- *the software may be used for any purpose*
- *the public administration or a third party of its choice may study the source code*
- *the public administration or a third party of its choice may modify the software*
- *the public administration can distribute the software, with source code and modifications, to anyone of its choice and provide recipients with the same abilities to use, study, modify and redistribute*

³⁷ Directive 2004/18/EC, Recital 46

³⁸ Directive 2004/18/EC, Recital 46. This principle is also supported by case law, such as [ECJ](#), 29 April 2004, C-496/99 (Succhi di Frutta).

Award criteria must have weightings, so that it is transparent to bidders how the most economically advantageous tender will be evaluated³⁹. Moreover, a minimum threshold score can be set for each criterion or a group of criteria, allowing the exclusion of bids that fall below that score in terms of weightings for individual criteria. Thus, it is possible for public administrations to express either a preference for open source software, or a requirement for open source software, by including as award criteria properties of open source software and adjusting the weights and minimum thresholds.

A requirement for open source software can be expressed simply by making the open source criteria obligatory.

A preference for open source software (or some of its attributes) could be expressed by making some or all of its criteria weighted. For instance, all the open source criteria could together be given a weight of 20%. If the formula used for evaluating the tender is the total weighted score divided by the total price, this would value a bid using open source software 20% more than an equivalent, equally priced bid using proprietary software.

Whether open source software is required by the tender or only preferred (through a high weighting for the open source award criteria) is up to each public administration for each tender. It depends on the justification, and while European or national or regional policies can be cited as justification for preferring or requiring open source software, this guide has shown how such justification can be provided even when no policy exists, simply at the level of each tender.

Open standards can also be preferred or required through the inclusion of award criteria, when the standard is not included by reference in the technical specification, but only by its functional description, or when bidders are allowed to make their own proposals for standards, formats, interfaces, or protocols⁴⁰. There is

³⁹ Where not possible, e.g. due to complexity, a ranking of criteria is permitted in place of weightings. See Directive 2004/18/EC Art 53(2).

⁴⁰ Inclusion of the open standards *by functional definition alone* in the technical specifications would not prevent a bidder from offering a solution with a closed but technically "equivalent"

no universally accepted definition of open standards; this guide has used the definition of the European Interoperability Framework version 1.0. However, a definition of open standards, while required in order to define a policy, is not required in order to actually have tenders preferring or requiring open standards - the approach of this guideline.

This is because, as with open source, it is not sufficient to state that an "open standard" is required. Award criteria must be clearly and transparently defined. Therefore, the authors recommend that the desired attributes of an open standard - as justified by the requirements of the public administration, for each specific tender - be included as award criteria. Award criteria corresponding to the EIF v1.0 definition of open standards are detailed below⁴¹:

- *the standard(s) used in the software is implementable by all potential providers of equivalent technologies*
- *the development of the standard(s) used in the software is open and transparent*
- *no restriction on re-use of the standard(s)*

By modifying the criteria or adjusting weights and minimum thresholds, the public administration can determine the level of preference - or requirement - of open standards for each tender. When a policy exists (such as the Dutch policy mandating open standards), that is a simple justification of minimum thresholds and the above award criteria. When no such policy exists, the criteria for preferring or requiring open standards can be included at the level of each public administration, as justified by each tender.

Other criteria

Tenders for public contracts often require the bidders to demonstrate their financial and technical or professional

standard, and such a bid could not be excluded on the grounds of not being open (see Article 23(4) and 23(5) of the Directive) unless the "openness" is defined in terms of award criteria.

⁴¹ The main text of the guideline includes justifications drawn also from the draft v2.0 of the EIF. Future versions of this guideline may be modified for consistency with EIF v2.0 after it is published in final form.

capacity. Regulations allow the setting of minimum levels for these capacities⁴² - i.e. minimum size, turnover, capital assets etc. Such minimum levels can be set, following the proportionality principle, separately for each tender. Naturally, if the tender is for a very large amount, it may be reasonable to set a higher minimum financial capacity.

As described in the guideline, the main reason for a minimum financial capacity requirement for a supplier of software, in addition to determining the ability of the supplier to meet the immediate requirements of the tender, is to ensure that the supplier will be able to provide support for the duration of the software's lifetime. Proprietary software may become unsupported - and unusable - if the proprietary software vendor goes bankrupt, or has insufficient financial resources to continue to support old software⁴³.

However, open source software can be supported by any firm with the necessary skills, not just the original supplier to a public administration. Indeed, the supplier to the public administration may have no relation whatsoever to the actual creators or maintainers of the open source software. Thus, open source software can be easily sustainable beyond the lifetime of the original supplier. This provides a justification to significantly lower minimum financial capacity requirements in tenders for software supply when the software is required to be open source.

⁴² Directive 2004/18/EC, Article 44(2).

⁴³ Of course, even very large proprietary firms periodically decide that they will not support older software, even if customers are quite happy to continue to use it. So high financial capacity requirements are no guarantee of an increased software lifetime.

C. Current situation in the European Union

This annex describes the current situation in the EU as it relates to the procurement of open source software.

The first section starts with an overview of the IT infrastructure in the public sector across Europe, and an overview of open source software across Europe. This is followed by a country-by-country summary of public sector IT, and a comparison with the Netherlands (as the Dutch open source guide has been used as a basis for this European guide).

The second section provides a discussion of good and bad practices in software procurement, including evidence from surveys of implicit choices made during procurement of software that may be anti-competitive. A survey of published calls for tender is provided as evidence of the extent of what the authors term bad practices, i.e. tenders that may be anti-competitive and discriminate *against* open source software (and *for* specific vendors), thus not meeting the spirit of procurement regulation. A final section considers the evidence and possible justifications for the procurement of open source software, the subject of this guideline.

C.1 Public sector IT and open source across Europe

C.1.1 Europe-wide overview of public sector IT and open source

IT infrastructures in Europe are monitored very well because the advancement of these infrastructures is one of the major goals of the European Commission and the Member States (MS). For this purpose, the i2010 programme was set up by the MS and the Commission. The i2010 benchmarking reports and especially the recently published i2010 Mid-term review⁴⁴ (further

⁴⁴ Commission of the European Communities (2008a): COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS -

referred to as EC 2008) provide a comprehensive up-to-date account of the current “state of the art” in each MS. For the facts on IT infrastructure, this report refers to the data and categories as provided by the i2010 Mid-term review. For the overview on open source and open standards - usage as well as policies - the authors refer to our own previous studies as well as some additional market research, and provide citations where applicable.

The main interest of this annex is to illustrate the role of open source software within European public sector IT infrastructures and especially in relation to procurement. Only a few EU Member States have explicit open source software policies and many initiatives are driven by more or less informal local groups or individual regional or local governments, which makes it hard to collate comprehensive and detailed information on this aspect. The authors include here quantitative data and information from our own studies, in particular the FLOSSPOLs study of open source and open standards use in governments across Europe, as well as the “Study on the effect on the development of the information society of European public bodies making their own software available as open source”⁴⁵. External sources were also consulted for more qualitative indicators and summaries of policies, in particular Aslett (2008)⁴⁶ and especially the “Government Open Source Policies” report of the Center for Strategic and International Studies (CSIS 2007)⁴⁷, which provides a comprehensive account of worldwide open source software policies that have been in place since 2001, are still running, or are proposed for the future. Though the CSIS report seems to underestimate recent developments, these two sources provide, to our knowledge, the most comprehensive

Preparing Europe’s digital future; i2010 Mid-Term Review. Brussels. Available online at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52008DC0199:EN:NOT>

⁴⁵ Ghosh, R. R. Glott, K. Gerloff, P.-E Schmitz, K. Aisola, A. Boujraf (2007): Study on the effect on the development of the information society of European public bodies making their own software available as open source. *European Commission DG INFSO*, Brussels.

⁴⁶ Aslett, M. (2008): Open source tour of Europe. Links to the country reports are made in the respective sections of the text.

⁴⁷ CSIS (2007): Government Open Source Policies – August 2007. Available online at: http://www.csis.org/media/csis/pubs/070820_open_source_policies.pdf.

overview of open source software policies and initiatives that is available at the moment.

In the following text the authors provide first a general overview of the state of public sector IT infrastructures and open source software usage patterns in the European Community. In the next section the authors provide an overview of these subjects for each EU Member State.

IT infrastructure in the European public sector

Considering the state of IT infrastructures and IT usage in Europe in general (including the private sector and private households), Europe belongs to the world leaders in the development of the digital economy.⁴⁸ The i2010 Mid-term Review highlights that the European broadband market has more subscribers than any other economic region and that half of European citizens use the Internet on a regular basis. It also emphasises that some Member States top the world in broadband take-up, mobile penetration and data traffic. Challenges are however seen:

- significant gaps between Member States
- Europe's under-investing as compared to other industrialised regions
- growing competition from China and India

Since this report deals with the subject of IT infrastructures of the public sector in the EU and its

⁴⁸This is the conclusion of the i2010 Mid-term Review. See Commission of the European Communities (2008a): COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS - Preparing Europe's digital future; i2010 Mid-Term Review. Brussels. Available online at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52008DC0199:EN:NOT>

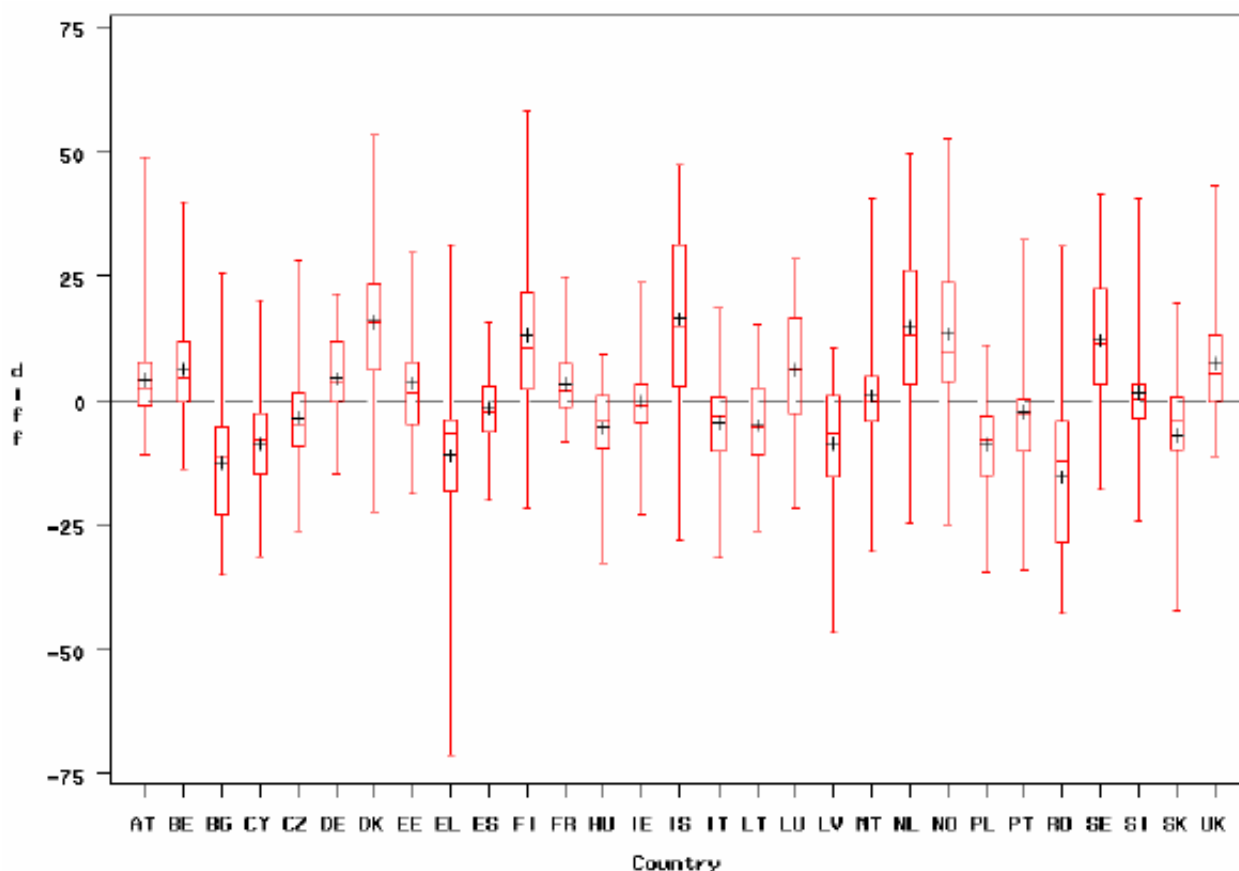
Member States, the following sections focus on the first bullet point.

The ICT country profiles of the i2010 Mid-term Review⁴⁹ show a remarkable degree of stability of differences in IT infrastructure between EU Member States. According to the report, the pattern of information society development has remained largely unchanged over the past five years. This pattern is characterised by more advanced IT infrastructures in the Nordic countries and the Netherlands, while many Eastern and Central European countries and the Mediterranean lag behind. This is the conclusion of the i2010 Mid-term Review. Overall (covering all 52 benchmarking indicators of i2010), three different groups of countries have been identified in the report:

- *The most advanced* are Denmark, Finland, Iceland, Netherlands, Norway and Sweden; whereby Austria, Belgium, Germany, France, Luxembourg and the UK are in this group
- *The least developed* are Bulgaria, Cyprus, Greece, Poland and Romania; Slovakia, Hungary, Italy, and Latvia are in this group
- *Fairly advanced* countries (the remaining) show an average profile that clusters around the EU average (see Figure 1)

⁴⁹See European Commission (2008b):COMMISSION STAFF WORKING DOCUMENT; Accompanying document to the COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS - Preparing Europe's digital future; i2010 Mid-Term Review; Volume 3: ICT Country Profiles. Brussels. Available online at:
http://ec.europa.eu/information_society/eeurope/i2010/docs/annual_report/2008/sec_2008_470_Vol_3.pdf

Figure 1: Country profiles of overall IT infrastructures in EU Member States⁵⁰



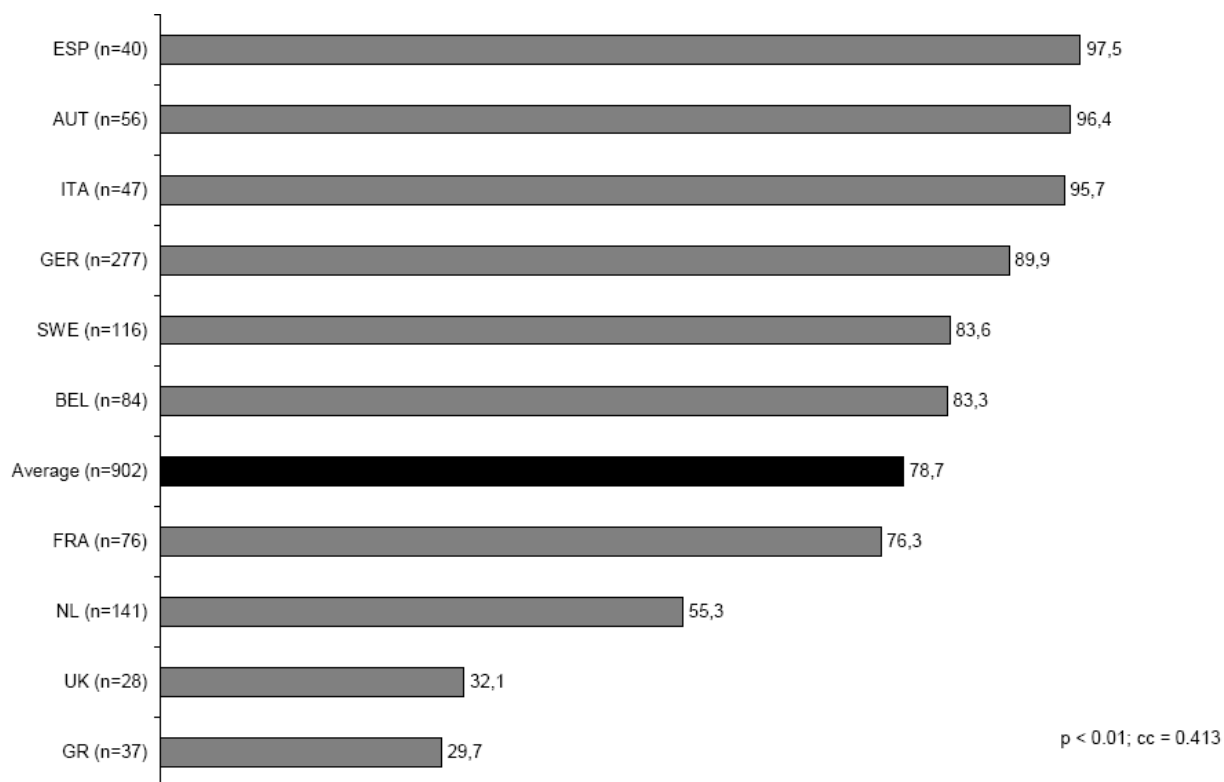
Moving to open source software, the FLOSSPOLS Survey on open source software usage in European Local Governments revealed that, in 2005, on average 79% of these institutions used open source software (at least to some degree).⁵¹ Some countries, especially, Spain, Austria, Italy, and Germany, turned out to be heavy users

⁵⁰Figure 1 provides a summary of the distribution of all 52 i2010 benchmarking indicators in the form of a boxplot. “Each indicator has been recalculated as the (absolute) difference, positive or negative, relative to the EU average for that indicator. These are then ranked in order and the top and bottom of the range (known as outliers) are shown as lines and the central section of the range shown as a box. For example, the box for Austria extends from -1.1% to +7.6% which means that half the indicators are within this range. The negative outliers are between -1.1% and -11.1% i.e. no indicator for Austria is more than 11.1 percentage points below the EU average. The positive outliers are between +7.6% and +48.6% of the EU average. The average for all indicators in Austria is +3.4 percentage points above the EU27 mean and the median value is +2.4.” Quoted from Volume 3 of the i2010 Mid-term Review.

⁵¹A more recent survey, undertaken by Kable in 2007, showed very similar results. See <http://www.kablenet.com/kd.nsf/Frontpage/B6A23D8412409EC0802572CE005552DD?OpenDocument>

of open source software in the public sector, whereas the usage of open source software in the public sector appeared comparably low in the Netherlands⁵², UK and Greece (see Figure 2).

Figure 2: Usage of open source software in the Public Sector of ten European Countries



Source: MERIT 2005 (FLOSSPOLs LocGov Survey)

These differences relate to distinct national patterns and practices in the usage and administration of software by IT managers of local governments. The surveyed countries differ significantly with regard to whether an increase of the share of open source software would be useful: local governments in Spain, Italy, and Greece, but

⁵² Note that the explanation for the apparently lower usage among Dutch respondents to the survey is most likely the lower self-selection bias among Dutch respondents, as the survey was conducted with support of the Dutch government resulting in a much higher than average level of representation across the sample. Thus, it is quite likely that Dutch usage was not in fact low, and actual usage in other countries was in all likelihood lower than identified in the survey.

also many respondents from France and the Netherlands showed a high demand for increasing usage of open source software in their organisations. Given the fact that open source software is usually not the standard software in European local governments, such strong demand could be a result of starting from a low base, as most of the organisations that do use open source - even in countries where many organisations use it - do not use it extensively. In these cases, positive experiences with open source software result in an interest in deploying it on a larger scale.

The FLOSSPOLs study found indication that the professional background of IT managers in the public sector has an impact on attitudes towards open source software. IT managers who are experienced in programming show an increased value being placed on access to source code.

Interoperability is, in general, a driving force for open source software, but played a different role in EU MS. It was especially important in the Netherlands, Sweden, France, and Italy. In contrast to these countries, open source software demand was strongly affected in Greece, Spain, the UK, and Austria by the need for compatibility with previously purchased software⁵³. These differences were however not strong enough to explain the observed differences in the usage of open source software. Apparently, other factors play a role to explain these differences, such as license expiration dates, contract arrangements with vendors or (programming) skills of the IT administrators.

Size effects of the local governments and the related IT departments, which result in different patterns of the organisation of work, are the most important factor in this regard. The size of the organisation, as measured by the persons employed in the IT department and the

⁵³ The FLOSSPOLs survey differentiated between interoperability and compatibility as follows: Interoperability means that software to be purchased should be compatible with other software of different vendors and product families; compatibility means that software to be purchased should be compatible with the software that was previously acquired and used by the respondent.

number of PCs and laptops administered by the IT department, appears positively correlated to open source software use. However, superimposed on this size effect is the effect of the PC-per-administrator ratio, which varies considerably between the different countries. Together these two factors have a two-sided effect on the use of open source software: In large organisations, high PC-per-administrator ratios are slightly against and low PC-per-administrator ratios slightly in favour of open source software use; but in small organisations it is just the other way round – low PC-per-administrator ratios works against and high PC-per-administrator ratios to the benefit of open source software.⁵⁴ Overall, PC-per-administrator ratios are much higher among open source software users than among non-users, and are also much higher among those who would like to increase open source software use, indicating that open source software use may allow a lower administrative workload per PC (i.e., open source software use may allow the same number of administrators to look after significantly more PCs).

Finally, the FLOSSPOLs local governments' survey revealed a number of fundamental differences in the use of open source software between countries that can be summarised in terms of 'adoption profiles'. The basic assumption thereby is that sample-based adoption-profiles still reflect to some degree underlying differences in work organisation, regulation, contractual issues, professional profiles, and other constraints that determine the use of open source software in European local governments.

1. The first adoption profile in our sample is characterised by a large share of open source software use in local governments, although tempered by an extremely large share of unaware open source software users.⁵⁵ Though ease of

⁵⁴The cause of this ambiguity must however remain open to some degree, as the FLOSSPOLs survey was not intended and designed to examine details of software implementation policies and work organisation in local governments.

⁵⁵From today's point of view it appears very unlikely that a considerable share of "unaware" open source software users can be found in the European public sector. The ongoing debate

customisation and combinability are highly valued, fear of a lack of technical support and the (related) first mover problem play an important role as perceived disadvantages of open source software as does the fear of cost and time efforts related to training. This ambivalent attitude towards open source software goes in line with low demand for an increase of open source software and interoperable software. This profile, which can be called "uninformed⁵⁶ and reluctant use", seems likely to appear in small organisations.

2. The second adoption profile is characterised by an average share of open source software users and a comparatively high share of unaware users. Advantages of open source software are noticed more than disadvantages, but the demand for an increase of open source software and for interoperable software is about the average. This type of open source software usage in local governments can be called "interested but reserved use". It seems to be typical for quite large organisations.
3. The third adoption profile is characterised by an average share of open source software users and a very small share of unaware open source software users. Advantages of open source software are valued higher than disadvantages, of which cost of training, in particular, is not seen as important. The demand for an increase of open source

and the continuous spread and diversification of open source software products together with the manifold eGovernment strategies set out by national governments and the European Commission, including dissemination of news and case studies through the OSOR and its predecessor the Open Source Observatory, must have had quite an impact on the attention of IT managers in the public sector. However, it must be assumed that there are still differences between IT managers and between government organisations with regard to the degree of knowledge of open source software. These differences might still have an impact on adoption patterns of open source software, though this impact might be subtler.

⁵⁶The term "uninformed" refers only to unaware open source software users and does not imply that all users of this type are uninformed about open source software. All the labels that will be used in this section serve only the aim to pinpoint unique aspects of each type of open source software adoption. Other attributes, which may also apply to a type but do not help to distinguish it from other types, must be disregarded to a certain degree.

software use as well as for interoperable software is high. This type of open source software adoption, which appears to be typical for medium-sized (i.e. average) organisations, can be called "informed"⁵⁷ open source software demand".

4. The fourth adoption profile was typified by very low shares of open source software users and very low shares of unaware users, too. Advantages as well as disadvantages of open source software are not highly remarked upon. Nevertheless, there is a very high demand for an increase of open source software use. In contrast, the demand for interoperable software remains very low. This kind of attitude towards the usage of open source software appears to be determined by negative experiences with proprietary software more than by practical experience of open source software. Therefore, this type can be called "uninformed alternative seeking" because this adoption seems typical of users looking for an alternative to the software they have.
5. The fifth adoption profile is characterised by very large shares of open source software users and very low shares of unaware open source software users. Ease of customisation is valued highly. The disadvantages of open source software play no significant role in this case. The demand for an increase of open source software is very high and the demand for interoperable software is also clearly above average. This type seems to be correlated to IT managers who are skilled in programming and wish to adjust their IT systems to the specific needs of their organisation, which usually is medium-sized. This type can be called "software customisation".
6. The sixth adoption profile is characterised by somewhat low shares of open source software users and very low shares of unaware users. The

⁵⁷The term "informed" refers only to the fact that the share of unaware users is very low and does not imply that other types of usage are generally based on a lack of information.

attitudes towards pros and cons of open source software do not provide a distinctive picture in comparison with the other types described here, but demand for an increase of open source software and for interoperable software is very high. This type, which again seems to be found among medium sized organisations, can be called "informed interoperability demand".

7. The seventh adoption profile is determined by a very large share of open source software users, whereby the share of unaware users is below average. While ease of customisation is not much valued, combinability with proprietary software is valued very highly. Fear of a lack of technical support for open source software and of being a first adopter, as well as fear of training costs are significant. Despite these fears there is however a very strong demand for an increased use of open source software, whereas the demand for interoperable software is low. This type can be called "risk-taking open source software adoption" because despite perceiving risks associated with open source software these organisations use it extensively and still want to increase its use. This type appears also to be typical for small organisations.
8. The eighth adoption profile is characterised by average shares of open source software users as well as of unaware open source software users. Respondents from local governments that fall into this profile did not identify very much with advantages of open source software, whereas they supported statements on disadvantages of open source software, especially fear of training costs. Consequently the demand for an increase of open source software use is low. In contrast to this, the demand for interoperable software is very high. This type seems to be determined by the negative aspects that are sometimes associated with open source software, therefore it can be called "fearful

reluctance". The respondents of this type typically belonged to very large organisations.

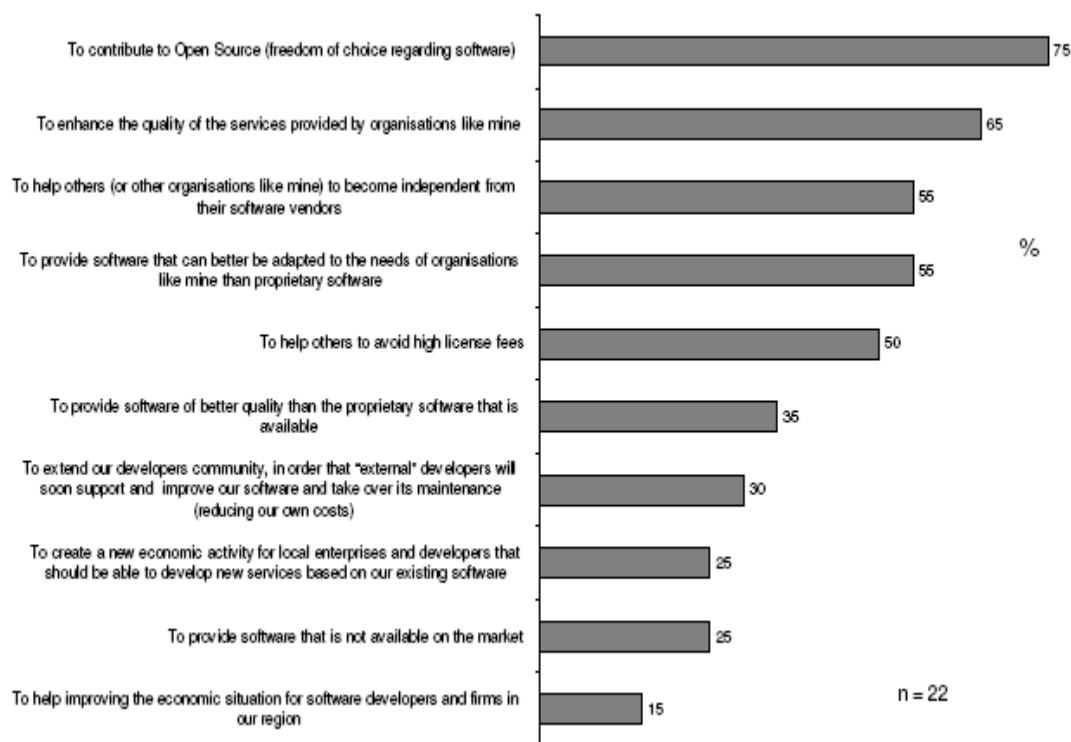
9. The ninth adoption profile is characterised by low shares of open source software users but also an absence of unaware users. Pros as well as cons of open source software are not significantly rated – respondents are quite neutral – and so is the demand for an increase of open source software or for interoperable software. This type can be called "indifferent reluctance". It seems to be found also in medium-sized organisations.

What is common to these adoption patterns is that indifference and lack of awareness lead to fear of possible disadvantages and a reluctance to adopt open source software, while open source software use tends to be driven by awareness and experience, demands for customisation and interoperability, and a certain amount of willingness to take risks especially in relation to support and training.

A European Commission study on European public bodies that make their own software available as open source⁵⁸ revealed that 10% of public sector organisations are willing or capable to release their own software as open source software. While small, this number may seem higher than many would expect, for public sector organisations. The reasons for public sector organisations to release open source software are illustrated in Figure 3.

⁵⁸Ghosh, R. R. Glott, K. Gerloff, P.-E Schmitz, K. Aisola, A. Boujraf (2007): Study on the effect on the development of the information society of European public bodies making their own software available as open source. *European Commission DG INFSO*, Brussels.

Figure 3: Reasons for public bodies to release software under an OSS license



The two main motivators for public sector organisations to release software under a open source software license are identification with the wider open source software community and the wish to increase the service quality of the organisation. In many cases these two answering options were checked together. This observation, that has been made in a survey of 220 local governments in Europe, is fully in line with other findings that result from case studies in the same study. In all cases that were examined because the organisation distributed open source software it was obvious that the actors within this organisation were familiar with open source software, its ideas and principles. This familiarity was usually provided by individuals in the organisation who, in a certain context of decision-making on the implementation of services into software, were able to convince the organisation as a whole to decide for Open Source.

Among the non-releasers (i.e. local governments that did not already and do not plan for the future to release software as open source software), there is only one relevant reason for not distributing own software as

Open Source, and that is that they do not have the necessary capacities / skills within their organisation to realise such a project.

Overall, the study found an attitude within public bodies that is characterised by a strong emphasis on their role as a service provider. This self-understanding does however not relate to the opportunities provided by software development and distribution. IT managers in these public bodies apparently tend to define themselves as users and consumers rather than as suppliers of services, and they do not consider software as an integral component of their services and the way they provide their services.

As described previously, the i2010 Mid-term Review mentions only one country, Portugal, that refers explicitly to open source software in its eGovernment strategy. This does however not imply that open source software plays no role in the IT strategies of other countries. Some countries have interoperability guidelines or policies, drawing on or similar to the European Interoperability Framework.⁵⁹ These may not refer explicitly to open source software, but their implementation may support open source software because open source software usage is strongly correlated with interest in and awareness of open standards⁶⁰. Given the fact that the i2010 Mid-term Review looked only at the high level, i.e. the eGovernment strategy within EU Member States, it is likely that strategies that are implemented below this level have not caught the attention of the reviewers. As shown by the Center for Strategic and International Studies (2007)⁶¹, between 2001 and 2007 there was a total of 268 governmental open source software initiatives in the world (see Table 1), of which 131 took place in Europe.

⁵⁹See <http://europa.eu.int/idabc/en/document/2319/556>

⁶⁰ Although open standards and open source software are quite different, the correlation and causal relationship between awareness and interest in open standards, and the increased use of open source software, is clearly shown by the FLOSSPOLs and several other surveys.

⁶¹CSIS (2007): Government Open Source Policies – August 2007. Available online at: http://www.csis.org/media/csis/pubs/070820_open_source_policies.pdf.

Table 1: Governmental open source software Initiatives in 2007

Open Source Initiatives, 2007				
	Proposed	Approved	Failed	Total
R&D	7	59	1	67
Advisory	16	56	3	75
Preference	35	56	4	95
Mandatory	17	6	8	31
Total	75	177	16	268

Regional Distribution*				
	Approved	Proposed	Failed	Total
Europe	91	33	7	131
Asia	47	22	1	70
Latin America	20	12	4	36
North America	9	6	4	19
Africa	4	1	0	5
Middle East	5	1	0	6

Source: CSIS 2007

C.1.1 Profiles of European countries

The authors now take a closer look at the public sector IT infrastructure and where applicable, open standards or open source software policies in each EU Member State. Since the Netherlands provide the benchmark to which other EU Member States are compared in this report, the authors start our examination with this country and go on (more briefly) with other MS in alphabetical order. The information on IT infrastructure is as presented in the official i2010 Mid-term Review.

Netherlands

The Netherlands is one of the best performing countries in Europe and leads the way in information society developments. The country shows only some (relative) weaknesses in the supply of eGovernment services. Usage of online availability of public services by citizens as well as by businesses is relatively high. (EC 2008)

The Dutch eGovernment strategy aims at reducing administrative burdens for citizens and companies. Citizens may no longer be asked for information which is already available within the Government (EC 2008). Open source software plays a significant role in the Dutch eGovernment strategy. The overall activity of the Dutch public sector in projects was accompanied by political

initiatives relating to open standards and open source software. Already in 2003 the Dutch parliament adopted a resolution calling for open standards to be used exclusively from 2006 (this was actually implemented from December 2007) and called for the government to promote open source software in the public sector. The definition of open standards used is consistent with that in the European Interoperability Framework v1. The OSOSS (open source as a part of the software strategy) program was created to help stimulate the use of open standards and provide information on open source software. (CSIS 2007, Aslett 2008)

There were monetary incentives, such as a prize for the most practical and innovative use of open source software and open standards in the public sector (won by the Union of Water Boards and the Board for Zeeland-Flanders in 2004 and the municipality of Den Haag in 2005) and an open source repository for the public sector. In 2005, an advisory board launched an Open Source Taskforce to stimulate growth and jobs in the north of the country to build on success in a open source software initiative of the City of Leeuwarden. Also in 2005 the Holland Open Source Platform was founded in order to bring together users, vendors, and open source projects and promote open source adoption. After an analysis of European rules on procurement, the Dutch government published in 2005 a detailed manual for the procurement of open source software and open standards. In 2007, the the successor to OSOSS, the NOiV (Nederland Open in Verbinding) released a revised guideline, which concluded that European public administrations do not have to issue a call for tender for open source software acquisition under certain conditions. It also published a guide on the acquisition of open source.

Policy support goes together with quite a number of local open source software initiatives in the Netherlands, such as the decision of the Dutch patent office to move its entire office infrastructure (both desktops and servers) to open source software, an effort planned to be concluded by 2009.

Austria

Though the information society at large - connectivity, ICT usage by households, enterprises and governments - is more developed than on average in the EU, Austria does not belong to the frontrunners. An important exception from this is the area of eGovernment services, where Austria has taken the leading spot in the EU consistently over the recent years. Austria is the first Member State where each citizen or business has the possibility to access government services via a fully transactional electronic channel. Potential for further achievement is seen only in the field of child allowances and public libraries. Take-up of on-line public services through citizens and businesses is, however, only close to EU average. (EC 2008)

Open source software does not play a very prominent role in the Austrian eGovernment strategies. The initial for public sector open source software activities in Austria was given by the plan of the City of Vienna, in 2003, to migrate 15,000 desktops to Linux ("Wienux"). Meanwhile Wienux has moved to Kubuntu and the total number of desktops has increased to more than 20,000. There are similar projects in Salzburg, and also at the federal level. (CSIS 2007, Aslett 2008).

Aslett points out that "all these projects appear to have taken place without a formal policy encouraging open source adoption. In fact, the Austrian Ministry of the Interior was one of the earliest adopters of Microsoft's shared source program."

Belgium

Like Austria, the Belgian information society is more developed than on average in the EU (mainly due to highly developed broadband markets) but does not belong to the frontrunners. eGovernment services and household's Internet usage are above average. Online availability of public services appears to be offered rather to businesses than to citizens. Availability of services to citizens is less than half the average level for services to enterprises. (EC 2008)

CSIS (2007) reports Belgian open source software policies for the years 2003 and 2004. In March 2003, a Parliamentary Committee on the use of ICT in the Federal Parliament released a report highlighting the importance of the use of open standards. In Oct. 2003, the House of Representatives and the Senate issued bills that supported the use of open source software in public administrations. In June 2004, the Council of Ministers approved new directives and recommendations for the use of open standards and open source software. According to these directives, new ICT systems must be based on open standards; new software will have to be delivered with source code and without licensing restrictions. It was recommended that federal authorities should try to avoid proprietary software, but should make final decisions based on total cost of ownership. Also in June 2004, the Belgian Government published a white paper on the use of open standards by federal public bodies. In 2006, the Belgian Cabinet approved a measure to use open standards, specifically the OpenDocument Format (ODF), for the exchange of documents among federal public services by September 2008.

The French-speaking Brussels parliament ([Parlement Francophone Bruxellois - PFB](#)) is funding the development of Tabellio, a suite of applications for drafting, managing and publishing legislative documents. The project was launched in October 2007.

A number of Belgian municipalities are also involved in the international PloneGov network, creating and sharing web applications based on the Plone content management system.⁶²

Bulgaria

The information society in Bulgaria is at a relatively early stage of development. It shows some strengths in the

⁶² Gerloff, K. 2008. "[Networks effects: Plone for Belgium and beyond](#)". OSOR case study by UNU-MERIT. http://osor.eu/case_studies/networks-effects-plone-for-belgium-and-beyond

adoption of broadband by Internet users, i.e. Bulgaria is leapfrogging outdated technologies to catch up with its new partners in the EU. However, online provision of public sector services remains low and addresses citizens rather than businesses. eGovernment is a priority for the government. In order to catch up to the more advanced MS, Bulgaria has set Austria as the benchmark in its efforts to raise the standard and level of eGovernment services provided to its citizens. (EC 2008)

Open source software appears to play no significant role in Bulgaria's eGovernment strategies. In March 2003, some members of Parliament proposed a draft bill mandating the use of open source software, open standards, and open file formats by the public sector; this was not adopted. In the mean time, there is an ongoing investigation against the recently signed agreement between Microsoft and the Ministry of State Administration and Administration reform. The investigation was initiated due to a letter sent to the Bulgarian chief prosecutor by the Internet Society-Bulgaria. In early 2008, the Bulgarian government announced a review of its national IT strategy and its willingness to consider open source software in the process.

Cyprus

Cyprus is catching up with the state of IT in Europe. Efforts are under way in order to develop eGovernment services and a business environment that eases ICT investment and helps to increase the eSkill base in the country (EC 2008). Usage of online public services, especially by enterprises, is lower than the EU average. Improvements are aiming at developing "Citizen Centric" web-enabled systems, the creation of government-wide data warehouse, the completion of the rollout of the Office Automation System, the delivery of more eServices to the public and the promotion of e-Democracy and e-Participation projects (EC 2008). There appear to be no open source software policies and few initiatives.

Czech Republic

Like in many Eastern and Central European MS, the state of the information society in the Czech Republic is below the EU average. Positive recent developments that will improve the situation in future are a strong progress in eGovernment and rapid adoption of broadband by Internet users. The country has already caught up with regard to the provision of online public services. In particular, services to businesses have been increased and now reach the highest levels in the EU (alongside Malta and Austria). Services to citizens, however, lag behind with one of the lowest figures for online availability (half of the EU average). This corresponds with one of the lowest levels of take-up of eGovernment by citizens, while take-up by businesses is clearly above the EU average. Future activities aim at the development of transaction services, while information services are already widely offered. (EC 2008)

Open source software initiatives in the Czech public sector were, for instance, the decision of the City of Prague in 2001 to migrate to open source software. The government encouraged the use of open source and helped to form the OSS Alliance to provide technical analysis, recommendations, case studies and support services to schools and public administrations.

According to Aslett, since then the dynamics of open source software projects and policies decreased considerably. This may be related to the recent signature by the government of two strategic agreements with Microsoft for software licensing and a proposed security partnership.

Denmark

Denmark is a clear leader in developing the information society, especially when broadband connectivity and the volume of eCommerce are considered. Take-up of eGovernment is remarkable. Danish citizens are twice more likely to use eGovernment than the EU average, and take-up by companies is even better. (EC 2008)

Denmark also shows a considerable interest in open source software when eGovernment strategies are

developed. Initiatives date back at least to 2002, when the Ministry of Science and Technology and Innovation Analysis issued a report of the Danish Board of Technology that recommended that OSS compete on same level as proprietary software, and supported open source software pilot projects. The Danish policy expresses no preference for open source software, but several open source software projects have been initiated under the policy. The Danish government also has a policy on open standards, although it differs from the Dutch definition of open standards and the definition in the European Interoperability Framework v1.0.

The Ministry of Science, Technology and Innovation in 2006 launched the “Danish Knowledge Center for Software” through its “Public Information Online” initiative, which guides the digitisation of the Danish public sector. The Knowledge Center in its turn set up a public-private partnership to build softwareborsen.dk. This website brings together public bodies and open source companies, not only making it easier to find services for this type of software, but also to re-use and share existing programs.⁶³

Estonia

Estonia shows a number of benchmarking indicators significantly above the EU average, notably in the area of broadband connectivity, households' Internet usage and eGovernment services. Usage of eGovernment services by citizens is on the EU average, whereas businesses' use of eGovernment is clearly above the average. Current activities, embedded in the "Estonian Information Society Strategy 2013", aim at the development of citizen-centred, transparent and efficient public administration. The strategy sets the objective of reaching (by 2013) 80% of citizen satisfaction and 95% of business satisfaction when using eGovernment. There does not appear to be an open source policy.

⁶³ Gerloff, K. 2008. The best software for the purpose: softwareborsen.dk. OSOR case study by UNU-MERIT. http://osor.eu/case_studies/The-best-software-for-the-purpose-softwareborsen.dk

Finland

Finland has one of the most competitive and dynamic ICT sectors in the EU and leads the way in information society developments in almost all respects. Finland's progress in fully-online availability of eGovernment services has not grown in recent years and places the country in a middle position within the EU. Availability of services to enterprises is below the EU average, while services to citizens are above EU average. The country's eGovernment strategy is laid out in the National Knowledge Society Strategy 2007-2015. It foresees that, by 2015, Finnish public services will be produced in a customer-oriented and economical manner as processes that cross the organisational lines within public administration and in cooperation with other parties. (EC 2008)

Some early open source software activities in Finland's eGovernment include the Ministry of Finance's working paper that called for government agencies to consider OSS alternatives (in October 2003) and a joint R&D project on open source software applications of the Applied Linux Institute, the Institution of Adult Education of Vantaa at the University of Helsinki, and the Dept. of Schooling and Education of the City of Vantaa (in September 2003). 2003 also saw the founding of COSS, the Finnish Centre for Open Source Solutions. COSS is a national development agency for open source business ecosystem. COSS promotes the development and adoption of managed and sustainable open source solutions in various industries. Although its focus is more on business than on the public sector, COSS has been involved in the development of Finnish OSS public procurement guidelines that are not yet released.

France

France is well advanced in information society and shows strengths in the area of broadband take-up and usage of

Internet by households. Weaknesses appear however in ICT usage by businesses and eSkills. Online availability of public sector services is above average. The country appears to be particularly strong in services to enterprises. Both, citizens and enterprises, show above average rates of usage. (EC 2008)

The eGovernment strategy is laid down in the ADELE Master Scheme for eGovernment (2006-2010), which includes an interoperability and security framework and exchange of administrative data schemes. It also integrates common eGovernment projects and extends the initial frame of the ADELE programme 2004-2007. The overall objective is to ensure a better management of public finances over a long term period as well as to simplify and render the French administration more efficient by 2010. (EC 2008)

The French government was among the first to consider setting up a open source software policy, as already in 1999 the French parliament considered a proposal to enforce the use of open source software in public administrations (the so-called Lafitte, Trégouet and Cabanel project). However, the project was not adopted. There were a number of (successful) open source software initiatives since then, of which recent ones include the Ministry of Defence's explicit preference of open source software for both acquired and internally-developed software projects (in April 2007), and, in May 2008, the Ministry of Education's agreement with Mandriva for a four-year plan for the adoption of Linux by all teachers and staff (estimated at 1.5 million employees) at France's 250 schools and universities. (Aslett 2008, CSIS 2007))

France passed a law which included a definition of open standards⁶⁴ which is close to but not as precise as the Dutch and EIF v1.0 definitions; open standards are not mandatory or preferred. In 2007, the Ministry of Budget, Public Accounting and Civil Servants published a "Practical guide for using open source software in

⁶⁴ Law 2004-575 of 21 juin 2004; article 4.

administrations"⁶⁵. This guide included sections on procurement of open source software, and open standards. In terms of practical cases of adoption, in January 2008, the Gendarmerie (police) announced its decision to migrate its 70,000 desktop computers to use an open source operating system and applications.

Germany

Germany shows most of the benchmarking indicators above the EU average. The country has its strengths in widespread and advanced usage of ICTs by businesses and intensive eCommerce activities, whereas broadband connectivity and related advanced services for households are closer to the EU average. The online availability of public services in Germany increased considerably from 2006 to 2007, placing the country before the Netherlands in this regard. Take-up of eGovernment services among citizens is above average but remained below the EU average among enterprises. (EC 2008)

The national eGovernment strategy, the eGovernment 2.0 programme, intends to make the Internet the major communication and distribution channel for public administration services. It aims at secure Internet transactions in the area of electronic business and eGovernment, facilitated through the usage of e-Identification Cards and certified portals in order to constitute a secure communication platform for citizens. (EC 2008).

Like in the Netherlands, the German public sector appears to be comparably active in terms of open source software policies and implementation. Support for open source software from policy-makers could be observed at a comparably early point in time (at LinuxTag 2000). There were many open source software initiatives and policies in the meantime, though it seems that the federal government has lost momentum since 2003 while a lot

⁶⁵ Aimé, Thierry. 2007. "Guide Pratique d'Usage des Logiciels Libres dans les Administrations". *Ministère du budget, des comptes publics et de la fonction publique*. Available online at http://www.synergies-publiques.fr/article.php?id_article=867

has happened on the local level. (Aslett 2008, CSIS 2007) Most recently (in October 2007), the Foreign Office voiced its support for the OpenDocument Format, while this year it ruled out the adoption of OOXML. Also important for public sector open source software activities in Germany was the City of Munich's decision to move to Linux desktop. There were many similar projects on local level. (Aslett 2008, CSIS 2007)

Greece

The Greek information society indicators are below the EU average. The country has made progress, however, in closing the gap with other Member States regarding online availability of public services. These improvements have been equally balanced between services to citizens and to businesses, though both remain below the EU average. Take-up by citizens is still low, whereas usage by Greek firms was consistently above the EU average. The driving force of the described improvements is seen in the National Digital Strategy (2006-2013). (EC 2008)

There is little political support for open source software at the national level. In contrast, the Greek government signed a public private partnership agreement (albeit a non-exclusive one) with Microsoft in 2006 to help implement its National Digital Strategy. As a reaction to the lack of open source software policies of the government, Linux and open source software supporters are attempting to take matters into their own hands. Meanwhile the Greek Research and Technology Network, which supports Greek universities, schools and technological institutes, has launched a open source software working group to study the potential use of open source software across Greece. (Aslett 2008)

Hungary

Hungary is another example of new MS that are catching up to the European average in developing the information society. The country has a strong ICT sector and a good eSkills base, both are considered to be strategic assets for future development. Online

availability of public services is below EU average, whereas services to citizens have remained close to the EU average. However, services to enterprises are well below the EU average. Take-up by citizens and businesses has grown significantly in 2007, although it still remains below the EU average. (EC 2008)

The Hungarian eGovernment strategy requires public administration to focus upon the needs and requirements of citizens. The national e-Inclusion programme from 2007 aims to raise awareness and skills in digital technologies and should further consolidate growth. Open source software policies could not be found.

Ireland

Ireland is among the frontrunners for e-commerce but at the EU average when connectivity and usage of ICTs by citizens and businesses are considered. The online availability for eGovernment services to enterprises and to citizens is below the EU average. Open source software policies or major initiatives could not be found, although Irish public universities have led or been involved in several open source software -related research projects, including at the EU and international level.

Italy

Italy belongs to the leading countries in terms of quality and availability of e-Government services but is below EU average when fixed connectivity, digital skills of the population and use of Internet by households is considered. Online availability of public services for both, citizens and businesses, is above average. Take-up by citizens is however low at nearly half of the EU average. In contrast, take-up by enterprises is very high.

The Italian eGovernment strategy is based on the concept of 'cooperative governance', which focuses on the sharing of common and consistent objectives between all types of administrations and aims at guaranteeing full administrative interoperability, pursuant to the principle according to which citizens should perceive the public administration as a single entity.

Policy support for open source software in the public sector was established in 2002, when a commission for free software in the public administration was installed to study open source adoption. In May 2007, Italy launched its own repository of open source software for public administrations, the Collaborative Development Environment. In June 2007, the Minister of Reform and Innovations in Public Administration announced the creation of the second Open Source Commission to define guidelines for public procurement of open source software. (Aslett 2008). Some regions, such as Tuscany, Emilia-Romagna and Umbria have defined a preferential procurement policy for open source software.

Examples of successful open source software projects in the Italian public sector are provided by the Ministry of Justice and the Ministry of Economics and Finance. There are also regional projects, such as in Cremona, Foggia, Rome, Tuscany, Emilia-Romagna, Genoa, Bologna, Bolzano, Savona and Umbria (Aslett 2008).

Latvia

Latvia presents benchmarking indicators below the EU average. Its strengths are seen in a good skill base and a wide dissemination of Internet usage in the population. Online availability of public services is below the EU average. Take-up is also below the EU average for both, citizens and enterprises. Open source software policies or major initiatives could not be observed.

Lithuania

Lithuania resembles Latvia in many indicators. Online availability of public services remains below the average, as does take-up by citizens. In contrast, take-up by businesses is above average. Like with Latvia, open source software policies or major initiatives could not be observed.

Luxembourg

Luxembourg shows many benchmarking indicators well above the EU average, with particular strengths in the

area of broadband connectivity, households' Internet usage and eSkills. Online availability of services focuses on services to citizens and remained below average.

Luxembourg's eGovernment Master Plan sets out the strategic objectives transparency, citizen inclusion and participation; public sector efficiency, increased competitiveness of both the public and private sectors, as well as an increase of the general level of knowledge and know-how in Luxembourg. Open source software policies or initiatives could not be observed.

Malta

Malta is well placed in the information society. The country is placed second (behind Austria) in the overall country ranking for full online availability of public services. Take-up in the population is relatively low while use by businesses is above the EU average.

The Maltese eGovernment strategy demands that eGovernment services should be offered via multiple channels. For this purpose the Government intends to offer a (limited) set of services on mobile telephone, via a call centre, through public Internet access points and front offices of Local Councils and Post Offices. The implementation of eGovernment services on digital TV will largely depend on the private sector development progress and its eventual take-up. Open source software policies or major initiatives could not be observed.

Poland

The Polish information society is developing slowly, with all i2010 benchmarking indicators below the EU average. The eGovernment strategy for the period 2008-2013 foresees the launch of further services for citizens and enterprises and linking up the different public administration systems. Another objective is the remodelling of the national data registers in order to simplify the administrative procedures for enterprises and citizens and create conditions for the development of integrated public services, mortgage register and other records (in line with one-stop-shop system).

There are a number of active open source software adoption projects in Poland, such as in Gdansk, Warsaw and Krakow. In 2003, the Forum for the Development of Free Software was initiated by the Ministry of Science and Information to support wider use of open source software in Poland. (Aslett 2008) There were also some attempts of the government to develop guidelines for the adoption of open source software before the use of open standards was recommended in 2007. (Aslett 2008) In 2003, the government has established an advisory body that intends to promote the use of OSS in education and in public administration. In 2004, the Ministry of Science and Information Society Technologies drafted the "National Open Source Development Strategy." (CSIS 2007)

Portugal

Portugal belongs to the fairly advanced countries according to the i2010 indicators. Improvements have particularly been achieved in the field of eGovernment services and a wide availability of broadband networks, accompanied by a good relative position in eBusiness indicators. The share of fully available online services increased considerably from 2006 to in 2007 and is now clearly above average, mainly due to improvements in citizen services. The same applies to services for enterprises. Usage of eGovernment by citizens is still low, whereas businesses are good users of eGovernment. (EC 2008)

For the Portuguese eGovernment strategy, a number of policy priorities has been defined, such as increasing the use of open source software by public sector bodies, generalising the use of Voice over Internet Protocol (VoIP) telephony, providing ICT training to every civil servant, and creating a central e-procurement website. The goal is that all 'basic' public services should be available online and free-of-charge by 2009. (EC 2008) In 2002, the Portuguese government promoted, by a non-binding resolution, the use of open source software in public administrations. Among many other initiatives, there is also a five-year agreement of the government

with Sun, signed in 2004, to provide open source technologies to Portuguese secondary schools. Moreover, the Associação Ensino Livre (Association for Free Education) was founded to increase the use of open source software in education. (Aslett 2008, CSIS 2007)

Romania

The Romanian information society is at a very early stage, with nearly all benchmarking indicators below the EU average. (EC 2008)

Aslett reports that the open source software adoption in the Romanian public sector remains limited due to the market for - or adoption of -personal computers and broadband Internet services, which is still in its early stages. There are few big open source software adoption projects, and no open source policy.

Slovakia

Though many i2010 benchmarking indicators in Slovakia are below the EU average, the country has a strong ICT sector, a general high level of adoption of Internet by the population, and one of the fastest growth rates of regular Internet use. A constraint is the slow development of broadband. Online availability of public services belongs to the indicators that are below average, just as take-up by citizens. In contrast, take-up by businesses is above the average. (EC 2008)

There is no clearly identifiable open source software policy.

Slovenia

Slovenia is well advanced in the information society, it has a leading position for eGovernment services, especially with regard to the online availability of public services. Availability of services to citizens is the 2nd highest in Europe and for services to enterprises it is the 5th highest. The i2010 Mid-term Review considers it noteworthy that citizens are better served than businesses. (EC 2008)

Since October 2003 the government has a policy for equal consideration to open source software and proprietary options in procurements. (CSIS 2007). However, the authors were unable to determine if this was true in practice, as Slovenian tenders were not included in our examination of actual procurement practices (section C.2) due to language constraints. In 2007, the Slovenian government initiated the launch of the COKS open source competence centre and software repository. Run by a private consortium, this centre aims to provide advice on the use of open source software to the public sector as well as to the general public.⁶⁶

Spain

Spain belongs to the relatively advanced information societies within the EU. It shows strengths in the area of eGovernment services and availability of broadband networks. Constraints must be seen in general ICT usage by businesses and households. Spain performed above the EU27 average in almost all areas measured in the 2007 survey of online services. (EC 2008)

“Plan Avanza”, Spain's Information Society Strategy, aims at reaching a fully developed eGovernment that also overcomes the uneven development and quality of eServices as well as their lack of integration when these services are offered by different administrations or departments. (EC 2008) Like with other MS, notably the Netherlands, France, and Germany, open source software plays a significant role in the Spanish public sector. The most significant projects are however regional. The most famous Spanish Linux open source adoption project is LinEx in Extremadura, which set out in 2002, intended to boost IT literacy by making free software available to everyone and building a regional intranet. Based on the success of LinEx, a similar project followed in Andalusia in 2005 (Guadalinux). There are plenty of similar initiatives in other regions, but also many initiatives on the federal level. (Aslett 2008, CSIS 2007). There is no

⁶⁶Gerloff, K. 2008: *A hub for Open Source: the COKS centre in Slovenia. OSOR case study by UNU-MERIT.* http://osor.eu/case_studies/a-hub-for-open-source-the-coks-centre-in-slovenia

national open source policy, but in 2006 the Ministry of Industry, Tourism and Commerce set up the National Reference Centre for the Application of Open Source ICT (CENATIC) to promote the understanding and use of open source software.

Sweden

Sweden belongs to the frontrunners of information society development in Europe. Like Finland, it also has a competitive and dynamic ICT sector. The share of services to citizens and to businesses that are fully available online is above average. The Swedish eGovernment strategy aims at establishing a Public Administration that is open 24 hours, strengthening democracy by enhanced transparency and citizen participation, a multichannel provision of services, and access for everyone. (EC 2008)

Sweden has significant use of open source software in the public sector. In 2003, a feasibility study on the implementation of open source software in the public sector was carried out by the Swedish Agency for Public Management. The study named a number of successful examples of open source software implementation. Also in 2005, the Swedish Association of Local Authorities and Regions created Programverket, a project to help the public sector adopt or convert to open source software⁶⁷. The Swedish government has not adopted an open source policy, but published a draft report on open source and open standards for comments. The report recommends that software developed with public money should be shared.

United Kingdom

Like the Netherlands, the United Kingdom is one of the best performing countries in Europe in terms of i2010 benchmark indicators. The UK has a relative comparative advantage in the supply of eGovernment services and the use of Internet by households. Online availability of

⁶⁷ Gerloff, K. 2008. "A sharing attitude: Programverket in Sweden". *OSOR case study* by UNU-MERIT. Available at: http://osor.eu/case_studies/a-sharing-attitude-programverket-in-sweden

public services is better than in the Netherlands, as well as take-up by citizens is slightly above the EU average. Businesses, however, lag behind in using eGovernment. (EC 2008)

The UK eGovernment strategy aims at improving citizens' daily lives through greater choice and personalisation, delivering better public services, such as health, education and pensions; benefiting communities by reducing burdens on front line staff and giving them the tools to help breaking cycles of crime and deprivation; and improving the economy through better regulation and leaner government. (EC 2008)

While there is no open source policy, there are a number of open source software initiatives in the public sector of the UK. In February 2003, the Dept. of Industry and Trade adopted interim conclusions on government-funded R&D software outputs. These stated that if no exploitation route is specified for government-funded R&D software outputs, the default position of the government should be to adopt an open source software license which complies with the OSI definition or a UK-specific analogue of it (CSIS 2007). In September 2008, the British Office for Government Commerce (OGC) for the first time included an open source company in its list of preferred suppliers of software and IT services for educational institutions.

C.1.2 Differences between the Netherlands and other MS

In order to prepare this guideline, as stated previously, the authors have used the Dutch OSS procurement guideline as a major input. From a legal perspective, the guideline is based on the legal framework at the European rather than national level, and is thus usable in all EU MS. In order to ensure that this guideline is useful from an economic and practical perspective in all EU MS, a comparative study of the IT environment and OSS policies was conducted, using the Netherlands as a reference. As can be seen below, there is clearly a variety of environments across the EU. In particular, there is a variance in terms of policies with regards to open source.

As a result of this finding, the guideline is designed to be useful regardless of the policy in place at a national level, and useful even if there is no open source policy at all.

Overall, the Dutch case can be characterised as an average degree of eGovernment services with a very strong emphasis on open standards as well as open source software in federal as well as local eGovernment policies and initiatives, in terms of official national policy.

The Austrian case differs considerably from the Dutch case. Austria appears to have a very well developed public sector IT infrastructure and performs better in this regard than the Netherlands, but proprietary software seems to play a much more important role in eGovernment strategies than open source software.

The IT infrastructure of the public sector in Belgium must improve in order to catch up with the Netherlands. Interestingly, while there was quite a lot of activities in eGovernment to promote open source software (with probably far-reaching consequences for the equipment of the IT infrastructure of the public sector), the dynamics in this regard seems to have subsided in recent years, whereas in the Netherlands open source software initiatives are increasing.

Bulgaria has to achieve significant improvements in its public sector IT infrastructure before it can compare to the other MS and the Netherlands. Open source software appears to be a lower priority in its strategies for the further development of eGovernment.

Like many others of the newer EU Member States, Cyprus is in an earlier phase in adapting its IT infrastructures, including the public sector infrastructure, to the level of other MS. Open source software policies or initiatives appear a lower priority in the country.

The Czech Republic has achieved a high level of public sector IT infrastructure. The country performs better than the Netherlands with regard to the online provision of services to businesses and their usage by firms, though the infrastructure for citizens must improve in order to reach a similar level. Open source software initiatives

played a significant role in local and federal eGovernment strategies, but it seems that recently the trend goes towards a preference for proprietary software.

The case of Denmark appears to be quite similar to the Dutch case, as it belongs to the leading information societies within Europe but reaches only EU average when the public sector IT infrastructure is benchmarked. It also resembles the Netherlands when the role of open source software in eGovernment strategies and policies is considered, although the authors did not find a comparable number of open source software initiatives.

Estonia is another (together with Czech Republic) successful new Member State with regard to the development of the information society. It resembles very much the Dutch case when public sector IT infrastructure and usage patterns are considered, but in contrast to the Netherlands open source software initiatives and policies could not be observed.

Finland belongs to the most advanced information societies in Europe. However, in terms of public sector IT infrastructure it does not differ very much from the average, just like the Netherlands. While Finland has promoted an OSS competency centre with a strong focus on businesses, OSS appears to play a lower profile in policy terms than in the Netherlands - although the planned publication of OSS procurement guidelines may change this.

France is quite similar to the Netherlands, with a well developed general IT infrastructure but weaknesses in the public sector and a strong emphasis on open source software in eGovernment strategies and policies and numerous open source software initiatives on federal, regional and local level. Unlike the Netherlands, France has no mandatory or preferential policies for open source or open standards, though it has published official guidelines for use and procurement of open source software.

Germany also resembles the Dutch case, especially with regard to the role of open source software in national, regional and local eGovernment strategies. However, the

country apparently has a better developed public sector IT infrastructure than the Netherlands (and France), and no open source policy.

Greece has to catch up to other EU information societies, including the Netherlands. Though there is some open source software activity, the government seems to tend towards proprietary software more than to open source software, as it made agreements with proprietary software vendors in order to achieve the goals of its eGovernment strategy, while open source software is not explicitly mentioned in this strategy.

Hungary's public sector IT infrastructure must improve in order to catch up to many other MS, including the Netherlands. Open source software does not play a noticeable role in the country's eGovernment strategy.

Ireland is similar to the Netherlands when the public sector IT infrastructure is considered, but in contrast to the Netherlands there is no eGovernment strategy that contains open source software as an instrument.

Like Germany, Italy seems to have a better developed public sector IT infrastructure than the Netherlands. It resembles both countries with regard to the emphasis that is set on open source software as a means for eGovernment strategies, including eProcurement, without a national policy. However, preferential policies exist at the regional level.

Latvia's public sector IT infrastructure is less developed than the one of the Netherlands, and open source software policies could not be identified in the country. The same holds true for Lithuania.

Luxembourg has a well developed public sector IT infrastructure and resembles the Netherlands in this regard. However, in contrast to the Netherlands, Luxemburg does not emphasise open source software in its eGovernment strategies.

Together with Austria, Malta has one of the best public sector IT infrastructures and outperforms other EU MS, such as the Netherlands, France, and Germany, in this regard. However, open source software policies or

initiatives could not be observed in Malta's eGovernment strategies.

Poland, together with Romania and Slovakia, provide examples of countries that have to improve a lot their public sector IT infrastructure in order to catch up with EU average (and thus the Netherlands) and, for this purpose, obviously consider open source software as a strategic means.

Portugal features one of the most advanced public sector IT infrastructures, thereby outperforming other MS such as the Netherlands, Germany, and France in some respects. Like the other three MS it focuses on open source software as a strategic means to strengthen the information society of the country.

Slovenia has a better developed public sector IT infrastructure than the Netherlands when certain indicators are considered. But in contrast to the multitude of open source software activities in the Dutch public sectors it seems to include open source software as an explicit policy instrument only in eProcurement.

Spain appears to have a slightly better developed public sector IT infrastructure than the Netherlands and also seems to set the benchmark for the use of open source software in order to achieve strategic goals for the advancement of the information society, thereby apparently focusing on regional initiatives and the educational sector.

Sweden outperforms the Netherlands with regard to the public sector IT infrastructure. Like Spain (and the Netherlands), it also emphasises open source software as a strategic resource for advancing the information society. However, it appears that the Netherlands and Spain are a bit more active in this regard.

The UK appears slightly more advanced with regard to its public sector IT infrastructure than the Netherlands. Open source software plays a significant role. However, in contrast to the Netherlands, where open source

software initiatives and policies can be found on every administrative level, in the UK most initiatives seem to be coordinated by the federal government, and the lack of a national open source policy affects open source take-up.

C.2 Assessment of actual procurement practices

Policies and actual practices of procuring open source software are sometimes met with the criticism that "there must be a level playing field in software procurement." One criticism of this guideline may be that it explicitly addresses the procurement of open source software, only, and that this is not supportive of a level playing field. In fact, this guideline is a practical necessity in order to ensure the success of the Open Source Observatory and Repository, since participating public administrations need clarity on how such software can be acquired. But the important point that the authors make in this section is that *today there is no level playing field in software procurement - there is a sharp tilt in favour of proprietary software from specific vendors.*

This tilt is evident both in terms of implicit and explicit choices made throughout the procurement process, and selection process, as shown by survey data below; but also in terms of actual tenders, where the use of specific proprietary product and vendor names in tenders is widespread.

C.2.1 Assessment of actual tenders & selection procedures

Public sector consumers have in many situations an obligation to support (and certainly not to harm) competition through their procurement practices. Procurement should be non-discriminatory and transparent, and promote competition.

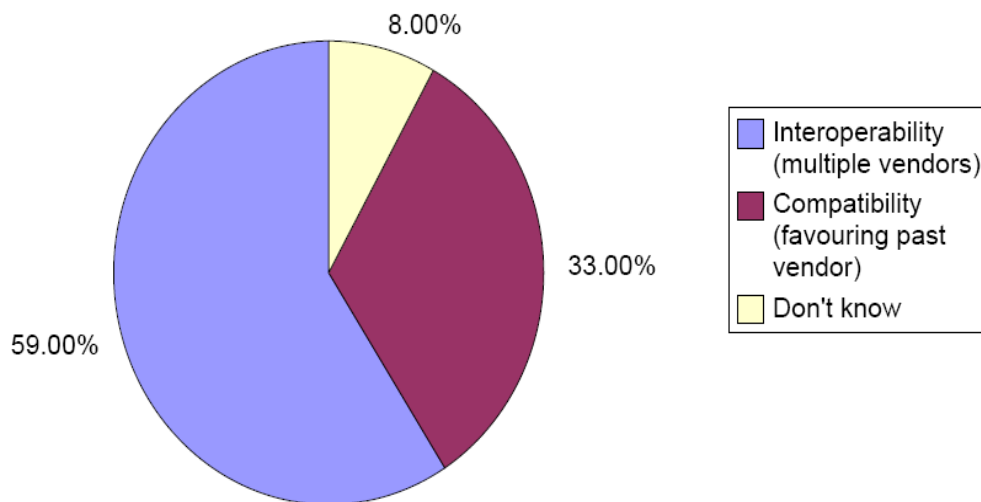
Compatibility vs. Interoperability: implicit biases

The reality of public procurement, however, looks different, as the response from 955 European local

governments to the FLOSSPOLS Survey⁶⁸ in 2005 has revealed. The respondents were asked whether they find it more important that new software they buy is compatible with other software from the same product family they already use ("compatibility", i.e. preferring previous suppliers) or that new software is compatible with software from other producers and product families ("interoperability", i.e. no anticompetitive preference in procurement).

It turned out, as shown in Figure 4 below, that 59% of the respondents favoured interoperability and 33% favoured compatibility (8% said they did not know). In other words: a large minority of public administrations lock themselves into proprietary technologies. While this may have long-term costs for these public administrations, it also has long-term costs for net welfare.

Figure 4: Selection criteria for new software purchases: FLOSSPOLS survey



From this it follows that preferring "compatibility" may even go against public procurement principles, since a preference – *explicit or implicit* – for "compatibility with previously installed software" favours the single supplier of that software, if it is based on standards that are not fully open. The authors will come back to this important

⁶⁸See <http://flosspols.org>

point below in course of the examination of public procurement tenders to be found at TED, the EU's public procurement portal.⁶⁹

An explicit preference, instead, for interoperability with open standards does not favour a single supplier of technology and is therefore far more in keeping with public procurement principles. This may also be more in keeping with public procurement law. The European Commission found in 2004⁷⁰ that public procurement requirements to supply hardware based on “Intel or equivalent” microprocessors, or even requiring clock-rates specific to Intel processors without mentioning Intel was not compatible with EU law.⁷¹ What applies to public procurement of hardware could reasonably be thought to apply to software procurement too, especially as the use of tenders with explicit requirements for compatibility with proprietary software standards appears to be quite common.

Examining actual calls for tender

However, saying you favour interoperability is not the same thing as doing it in practice. So the authors began our analysis of the quality of public procurement tenders in the course of the FLOSSPOLs project in 2005 with a quick keyword search for tenders on TED. At that time the authors identified 149 recent tenders including the term “Microsoft”. A brief analysis below, of six calls for tender, identifies the strong anti-competitive effects of public procurement that favours “compatibility” with proprietary standards over “interoperability” with open standards.

⁶⁹See <http://ted.europa.eu/>

⁷⁰European Commission (2004): “Public procurement: Commission examines discriminatory specifications in supply contracts for computers in four Member States”. Press release reference IP/04/1210, October 13, 2004. Available at: <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/04/1210&format=HTML&aged=0&language=EN&guiLanguage=en>

⁷¹Specifically, “Intel or equivalent” was found to be “a violation of Directive 93/36/EEC on public supply contracts, and specifying clock rates was found “contrary to Article 28 of the EC Treaty, which prohibits any barriers to intra-Community trade”.

1. The anti-competitive effect starts with the procurement process itself, which may require bidders to purchase software from specific vendors. For instance, a tender from Scottish Enterprise, 2005, states that “All expressions of interest shall be provided either on paper or both on paper and in electronic format (via floppy disk using Microsoft Office compatible products)”.⁷² While not as bad as requiring citizens to purchase software from a single vendor for access to essential government services, such procurement procedure requirements are clearly detrimental to competition in the market for software even among private consumers. It works against the proper take-up of eProcurement, since it ties eProcurement to increasing and locking in the market share of the companies whose proprietary technologies are used. Note that this is an example of discrimination in eProcurement, and not specific to the subject of the procurement but the way in which it is procured. However, this discrimination results from the use of proprietary standards within the procuring agency, and requires the use of proprietary standards among bidders.
2. A typical case of explicit preference to bidders using technologies from favoured providers is a tender from Fife Council, 2005, which is for additional services to be built around “an interactive site provisioned through the use of Macromedia Cold Fusion and Microsoft SQL”.⁷³ While procuring additional services for previously acquired products is generally allowed, if it is for previously acquired products that are not based on open standards, such additional procurement can extend the lock-in to the proprietary standards in place well beyond the period that may have been intended (and announced) at the time of procuring the initial software. Thus, even if allowed, such

⁷²See <http://ted.europa.eu/udl?uri=TED:NOTICE:189553-2005:TEXT:EN:HTML>

⁷³See <http://ted.europa.eu/udl?uri=TED:NOTICE:189364-2005:TEXT:EN:HTML>

procurement can have anti-competitive effects. Such anti-competitive preferences are quite common even when they are not explicitly stated – tenders for the provision of websites for the European Commission, for instance, until 2006, used to require compatibility with the europa.eu.int EU portal. As Europa was then based on proprietary technologies (including ColdFusion), a specific vendor preference was introduced into the market even without mentioning brand names. This perfectly illustrates vendor lock-in, and how the anti-competitive effect goes beyond the public sector alone when public bodies are locked in. The original procurement of technology for Europa may have indeed been truly competitive in nature. Since it obviously did not require the use of open standards, all future procurement related to Europa became anti-competitive in nature and favoured the single vendor owning rights to the original technology chosen, directly (through purchase of the same vendors' software) and indirectly (through the requirement that suppliers of additional websites compatible with Europa purchase these vendors' software). Note, the Europa site now runs on the open source Apache web server.

3. An example of how past purchase of software based on proprietary technology ensures a preference for the same proprietary technology (and thus favouring its sole vendor directly, or bidders who are customers of that sole vendor) is in this tender from Eurojust, 2005, a European international organisation, for a library automation system.⁷⁴ In this tender, the preference for compatibility with previously purchased proprietary technology is explicitly stated: "Eurojust employs Intel-based servers running Windows 2003 and workstations running Windows XP. The network protocol in use is

⁷⁴See <http://ted.europa.eu/udl?uri=TED:NOTICE:59337-2005:TEXT:EN:HTML>

TCP/IP. Any proposed software must be able to function efficiently in this environment. Eurojust has a strong preference for Microsoft SQL as the database to minimise the variety of software to be supported in-house. It must be possible to integrate the system with Microsoft's Active Directory for user information and access control." Clearly, Microsoft and its customers are favoured in this tender. Of course, Eurojust could not procure software that did not work with previously acquired software. However, If the previously purchased software was based on open standards, the new system could have been required to be interoperable with those open standards, thus giving no preference to individual vendors. Since the previously purchased software (in particular, Active Directory and Microsoft SQL) was not fully based on open standards, this tender gives a clear preference to the vendor of the previously purchased technology - perhaps well beyond the period of procurement intended at the time of purchase of the original software. Although open standards and open source software are different concepts, in this case even compatibility with previously installed open source would not limit new systems to specific providers, since any vendor can work with an open source product without any dependence on the software's "owner".

4. Preference for individual vendors can get explicit: a tender from Consip, Ministry of Economy and Finance, Italy, 2005,⁷⁵ is representative of the several tenders found for "software licences". It requires "licenze d'uso di programmi software Microsoft Office" (i.e. usage licences for Microsoft Office). It is supposedly a competitive tender - using the "open" procedure - yet the only competition possible is among resellers of Microsoft.

⁷⁵See <http://ted.europa.eu/udl?uri=TED:NOTICE:181643-2005:TEXT:EN:HTML>

5. Explicit preference for individual vendors go further. In a procurement process that was “negotiated without a call for competition” (i.e. explicitly without competitive bidding but an offer invited from a single vendor), Hessische Zentrale für Datenverarbeitung, 2005,⁷⁶ signed a contract with Microsoft Ireland for “software licences” worth Euro 2.69 million over three years. The justification provided for this negotiated procedure is a concise statement of the argument presented previously in this document: “The works/goods/services can be provided only by a particular tenderer for reasons that are: Connected with protection of exclusive rights.” Clearly, if requirements are specified in terms of proprietary technology rather than in functional terms, only the rights holder can provide the technology, due to the “protection of exclusive rights” around the technology.

As detailed further in Annex B on legal issues, European law on public procurement only allows a brand to be specified if it is otherwise impossible to describe the product “*sufficiently precisely and intelligibly.*” True, the only way to describe specific proprietary software products such as Microsoft Office or Macromedia ColdFusion is through their brand names. But it is certainly possible to prepare precise and intelligible functional specifications that would be product- and vendor-independent. Just as the EC argued that microprocessors can be selected on performance criteria rather than specific clock rates (which favour a single vendor), software and software services can be selected on the basis of technology rather than products. In order to ensure that this is done continuously it is essential to avoid the progression described in the examples above, from one original purchase that was perhaps competitive, to implicitly or explicitly favouring the same vendor (or

⁷⁶See <http://ted.europa.eu/udl?uri=TED:NOTICE:172383-2005:TEXT:EN:HTML>

resellers) repeatedly in all further purchases. As the examples show, this leads eventually to favouring or even requiring private sector bidders to purchase software from the same preferred vendors, cementing their position in the market place beyond the public sector. The only way sustained competitive public procurement can be achieved is through:

1. defining procurement requirement by technology rather than individual (named) products
2. explicitly excluding compatibility with proprietary technologies as a selection criterion
3. requiring interoperability with open standards

Based on this experience and the template the authors have developed during our first TED database research the authors have performed an extensive updated analysis for this guideline.

For this purpose, the authors search for the incidence of pre-defined search terms (which are all company names) within tenders within a specified period of time (January 4, 2006 to August 30, 2008) and a specified procurement classification ("CPV") code (30240000 - Software).⁷⁷ The research group has thus identified following search terms for the analysis, based on Forbes ranking of largest software companies:

IBM
Microsoft
Oracle
SAP
Symantec
Adobe Systems / Adobe

⁷⁷ Meanwhile, during the preparation of this report, the categorical system of TED has changed with respect to software, which is now under the 48000000 codes.

Electronic
 VMware
 Autodesk
 Atos Origin

Arts

It turned out that out of a total of 3615 software tenders within the specified period of time 567 (or 16%) contained a reference to one of the search terms. Table 2 illustrates the relative shares of the search terms within the total of 567 tenders under scrutiny:

Table 2: Distribution of top-10 software company names in software tenders

Company name	Number of tenders	% share of tenders
Microsoft	201	36.1
Oracle	116	20.2
IBM	70	12.2
SAP	67	11.1
Adobe Systems / Adobe	58	10.1
Symantec	21	3.7
VMware	20	3.5
Autodesk	8	1.4
Electronic Arts	3	0.5
Atos Origin	3	0.5
Total	567	100

It is obvious that Microsoft is by far the company to which most tenders refer to - with 35% of tenders referring to the top ten software companies, and 5.6% of

all software tenders in the selected period. This is followed by Oracle, IBM, SAP and Adobe. The remainder of the ten largest software companies shows more or less negligible shares.

An examination of tenders⁷⁸, covering six countries (UK, Germany, Netherlands, France, Spain and Austria) and the top five search terms⁷⁹ (Microsoft, Oracle, IBM, SAP, and Adobe) confirms the remarkably high share of tenders that may go against the principles of competitiveness and transparency in procurement.

UK

1. Notice no. 2008/S 170-227967 is a tender of Transport for London (TFL) and orders a software solution their Station Staff Scheduling System. Though the tender does not state that the system must be of a certain brand or proprietary it points out that the system they use is MS Excel-based - rather than referring to a functional specification or an open standard. This could be understood as an implicit preference.
2. Notice no. 2008/S 113-151866 is a tender of British Waterways for information technology infrastructure and support services. In the description of the order the tender points out that in the current system uses Microsoft SharePoint, which again can be understood as an implicit preference for a system that is compatible with this proprietary software and its proprietary standards.
3. Notice no.2007/S 234-285204 is a tender of the City Council of Staffordshire for the provision of a corporate ICT client strategy, including equipment, delivery and services. It does not refer explicitly to proprietary software, but in the

⁷⁸ This sub-selection cannot be seen as representative, and is purely illustrative. Moreover, due to the limited resources available for this study, it excludes tenders from European institutions and other MS. Note that the analysis here is based not on the full tender text, which may not be available in many cases, but on the summary required to be published on TED.

⁷⁹ In this sub-selection of 27 tenders, 2 matching the term IBM were for support or software to run on legacy IBM mainframes, and are thus not included in our analysis.

requirement specifications it contains the notice that software is “also purchased via Microsoft Select agreements”, which can be understood as an implicit preference for licenses that are sold under these conditions.

4. Notice no. 2007/S 232-282485, from The Housing Corporation, orders ICT infrastructure management service and requires hosting commodity Microsoft applications. This is an explicit preference for software that supports this proprietary system.

GERMANY

5. Notice no. 2008/S 175-233218 (open procedure), from Martin-Luther-Universität, D-Halle, orders initial computer technology and software equipment, such as personal computers, servers, laser printers, display screens, notebook personal computers and computer software. The tender explicitly calls for specific Microsoft, Adobe, and Corel software packages.
6. Notice no. 2008/S 172-230102 (restricted procedure) is a tender from the Europa-Universität VIADRINA D-Frankfurt/Oder, ordering delivery and implementation of servers/blade servers as well as the development of associated storage and backup solutions. The tender explicitly requires an upgrade from previous versions of MS software (e.g. Print, FTP and E-Mail) to newer versions of the MS software system.
7. Notice no. 2008/S 184-243153 (procedure: contract awards), from Landesamt für Datenverarbeitung und Statistik NRW D-Düsseldorf, orders software package and information systems, demanding exclusively an “IBM Softwarepackage contract”.
8. Notice no. 2007/S 147-182198 (procedure: contract awards) from Technische Universität D-Ilmenau, explicitly and exclusively ordered the delivery of Adobe-CLP-EDU Products. The contract was

awarded to Fujitsu Siemens Computers GmbH, Augsburg.

9. Notice no. 2007/S 75-092148 (negotiated procedure) from Versorgungsanstalt des Bundes und der Länder, D-Karlsruhe, orders the delivery, installation and initiation of a system for "Contenterstellung". Hereby the tender explicitly demands the availability of interfaces to proprietary software such as SAP software and systems and specifies that bidders with SAP certifications will be preferred.

NETHERLANDS

10. Notice no. 2008/S 127-168871 (open procedure) from Gemeente Hoogeveen (NL) orders explicitly and exclusively a number of Microsoft licenses (e.g. licenses for 375x Microsoft Office Standard 2007 Edition, 125x Microsoft Office Professional 2007 Edition) (publication date: 03-07-2008)
11. Notice no. 2007/S 116-142733 (restricted procedure) from De Nederlandsche Bank NV NL-Amsterdam, orders the delivery of Software consultancy-, maintenance and supply services, hereby explicitly referring to IBM and MS software packages, whereas for "antivirus packages" no brand names are mentioned (20/06/2007).
12. Notice no. 2007/S 96-118033 (open procedure) from Defensie Telematica Organisatie NL-The Hague, orders the delivery of software licences, software maintenance and implementation services, explicitly and exclusively requiring IBM products (22-05-2007).
13. Notice no. 2008/S 59-079390 (Contract awards) from Belastingdienst/Centrum voor ICT NL-Apeldoorn, ordered explicitly and exclusively the delivery of SAP xRPM licenses. The contract was eventually given to SAP Nederland b.v. s-Hertogenbosch (Publication date 26/03/2008)

14. Notice no. 2008/S 82-111072 (Contract awards) from Ministerie van Landbouw, Natuur en Voedselkwaliteit, NL-Assen, orders explicitly the application software Oracle EBS. Eventually the order was given to Ordina Nederland b.v. Nieuwegein (Publication date: 26/04/2008).

SPAIN

15. Notice no. 2008/S 155-209430 (Open procedure) from E-Vitoria-Gasteiz, orders explicitly and exclusively the provision of licenses for Microsoft Office Professional Plus and Microsoft Windows. (12/08/2008).

16. Notice no. 2008/S 103-137549 (Contract awards) from Comunidad Autónoma de la Región de Murcia, orders explicitly software upgrades and licenses for Microsoft Office and Microsoft Exchange (29/05/2008).

17. Notice no. 2008/S 149-199795 (Contract awards) from Consejería de Economía y Asuntos Europeos, Oviedo, orders exclusively various SAP licenses for running programmes that are intended to improve the quality of the economic-financial system of the province of Asturias. Eventually the contract was given to SAP España, Sistemas, Aplicaciones y Productos en la Informática.

FRANCE

18. Notice no. 2008/S 127-169093 was issued by La Poste (French Post Service) and orders transport by road of postal traffic between the Paris region and Great Britain. Although this tender is not a software tender it explicitly mentions Microsoft. Electronic submission of tenders is only possible if Microsoft Windows and Internet Explorer 5.5 are used. This is an example of an explicit preference for proprietary system in order to access eProcurement services. In this case, the public administration is forcing a private business - in the

road transport sector - to become a customer of a named private software company in order to compete equally with other bidders in the submission of a tender.

19. Notice no. 2008/S 127-168799 was issued by the City of Clermont Ferrand in France. It orders Equipment and supplies, more specifically it deals with purchases of software for the Service Industrial Aeronautics. It contains a shopping list of several proprietary software products, such as Adobe, Symantec, and Microsoft. This case provides an example of explicit preference of proprietary software.
20. Notice no. 2008/S 142-190663 (Open procedure) from Conseil Général du Pas-de-Calais, Arras, orders explicitly and exclusively software licenses for various Oracle products (24/07/2008).
21. Notice no. 2007/S 250-306030 (Contract awards) from Ville de Boulogne-Billancourt, order explicitly software licenses for various Oracle products and associated services (29/12/2007).
22. Similarly, Notice no. 2008/S 120-159680 (Open procedure) from OPIEVOY, Versailles, orders explicitly and exclusively software licenses for various Oracle products (21/06/2008).
23. Notice no. 2008/S 151-203049 (Contract awards) from AUP, Montreuil-sous-Bois, orders various office automation software, software products and desktop-publishing software. The tender explicitly asks for software by the following vendors: Adobe, Microsoft, Symantec, Quark, Corel and MapInfo (publication date: 06/08/2008).

AUSTRIA

24. Notice no. 2007/S 179-218833 (Open procedure) from Gemeinde Wien orders explicitly and exclusively 20.000 Microsoft EDU licenses.
25. Similarly, notice no. 2007/S 102-125337 (Contract awards) from the Republic of Austria (Republik

Österreich (Bund)), orders explicitly and exclusively the acquisition of various Microsoft licenses (no further specification in the summary published on TED).

C.3 Conclusions

What can be concluded from this is that, while the majority of public procurement for software may or may not comply with European regulations - a detailed examination is needed to come to any clear opinion - there are still many calls for tenders that appear at first glance not to follow the principles of transparency and non-discrimination. This applies also to the Netherlands, despite its new policies and public procurement guideline. The authors identify three possible causes for this situation:

1. It seems that a number of calls for tenders are issued by organisations that are not aware of the existing regulations in sufficient detail, and certainly do not adequately consider the underlying principles. Especially when tenders for initial purchase of IT equipment are considered, it appears that those publishing calls are often simply putting together a shopping list of proprietary hardware and software without preparing any functional requirements, or considering the intended lifetime of the procured software. Consideration does not seem to be given to the effect of initial procurement choices on future procurement.
2. Apparently, there is a lack of monitoring of the content of calls for tenders, despite the fact that they are all publicly available.
3. It seems that violating regulations and principles of public procurement is not sanctioned in a way that deters (some) public organisations strongly enough.

Some measures may help to counter such poor procurement practices:

1. Raising the awareness of software procurement principles, regulations and choices within the European public sector. This guideline for the procurement of open source software can help in this goal, as it provides necessary information on how open source software can be acquired while following and furthering public procurement principles and regulation, something with which public administrations seem unfamiliar.
2. A kind of alert system that informs a supervising authority about an irregular call for tender and the issuing organisation about the fact that it may violate the rules and laws would probably help a lot to decrease the number of such calls for tender. An alternative may be a procurement observatory highlighting good and bad procurement practices.
3. There should be effective sanctions for public sector organisations when they violate rules and laws for public procurement. Current sanctions - national or European investigations, or local lawsuits - do not seem to be sufficiently deterring.