HM Government

An Analysis of the Public Consultation on Open Standards: Open Opportunities

Completed for the Cabinet Office by the Centre for Intellectual Property & Policy Management at Bournemouth University

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An Analysis of the Public Consultation on

OPEN STANDARDS: OPEN OPPORTUNITIES FLEXIBILITY AND EFFICIENCY IN GOVERNMENT IT

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Contents

Introduction

The Government ICT Strategy, published on 30 March 2011, has committed the Government to creating a common and secure IT infrastructure based on a suite of compulsory open standards, adopting appropriate open standards wherever possible.

To this end, the Cabinet Office issued a public consultation on the proposed policy of mandating specific open standards in public procurement, covering central government but their non-departmental bodies, agencies, and other bodies reporting to them.

The aim of the Government is to identify criteria to define an open standard and the circumstances under which it should mandate a particular standard. Moreover, this policy should be aligned with international policies on standards in procurement of government IT.

The public consultation consists of three sets of questions, divided into three chapters:

- Chapter 1 on "the definition of open standard in the context of government IT";
- Chapter 2 on "the meaning of mandation and the effects compulsory standards may have on government departments, delivery partners and supply chains";
- Chapter 3 on "international alignment and cross-border interoperability."[1]

This report analyses and summarises the results of the public consultation on mandating open standards for software interoperability, data and document formats in the public procurement policy of the UK. Contributions and submissions are quantified, summarised and schematised, without expressing the personal opinions of the authors. The report, moreover, does not provide any indication of the future policies of the UK in the field of open standards.

The consultation exercise

The Cabinet Office received responses to the consultation through several channels:

1. An online questionnaire made available to the public by the Cabinet Office;
2. Written submissions to the Cabinet Office following the structure of the online questionnaire;
3. Written submissions to the Cabinet Office that did not follow the structure of the questionnaire;
4. Emails and letters to the Cabinet Office;
5. Seven roundtables organised by the Cabinet Office[2];
6. An online questionnaire provided by a third party proposing the same questions as the

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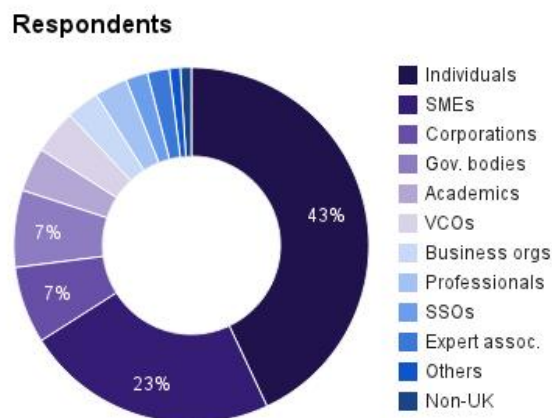[1]   http://consultation.cabinetoffice.gov.uk/openstandards/about-this-consultation/
[2] One of the roundtables (roundtable 1) was discounted due to a conflict of interest. Therefore 6 roundtable discussions are considered in the analysis, not 7.

Cabinet Office;
7. Meetings with stakeholders.

Overall, more than 480 submissions were retained by the Cabinet Office to be considered for this analysis exercise. Respondents to the consultation included governmental bodies, the industry sector (small to medium enterprises (SMEs) and corporations), standards setting organisations (SSO), expert groups, business associations, voluntary and community organisations and campaign groups, professionals (e.g. lawyers, IT professionals); academics, foreign observers (e.g. Dutch civil servants/professionals), and the general public.

The largest share of respondents was made up of private individuals (43%). This group comprises students, software developers, and IT professionals, as well as members of SSO and expert associations, who contributed in a personal capacity. Another substantial share of respondents was made up of SMEs (23%).[3] Government bodies including central government departments, their agencies, non-departmental public bodies and other bodies for which they are responsible and local authorities provided 7% of responses

Respondents

- Individuals
- SMEs
- Corporations
- Gov. bodies
- Academics
- VCOs
- Business orgs
- Professionals
- SSOs
- Expert assoc.
- Others
- Non-UK

Many corporations (7%) and business organisations (3%) from the software industry, the hardware industry, the telecom industry, the electronics industry and others participated. Standard setting organisations, both in the form of voluntary business associations and formal organisations (2%), and expert associations (2%) were also represented.

Voluntary and community organisations, including open source software (OSS) developer communities, campaign groups, political and social movements, accounted for 4% of participants, whereas professionals e.g. lawyers and academics were represented respectively with 3% and 4% of the total participants. Finally, external observers, civil servants and professionals of foreign countries (especially from the Netherlands) made a

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[3] We have used to this end the definition of SME as in COMMISSION RECOMMENDATION of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises, Official Journal of the European Union, L 124/36, 20.5.2003, available at http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2003:124:0036:0041:EN:PDF

contribution (1%).

The roundtables and the unstructured contributions reiterated the themes of the online consultation and of the written submissions. Correspondence patterns between typologies of respondents and standpoints on this proposed policy were also confirmed.

Executive summary

The public consultation on the proposed policy for open standards in government IT specifications, relating to software interoperability, data and document formats, generated a large number of contributions and responses. The number and the composition of the participants indicate considerable interest, not only in the IT industry and among standards setting organisations, but also within other sectors of industry and society, including the public at large. The typology of participants was extremely diversified and all stakeholder groups interested in this policy were represented.

Methodology

The methodological approach applied to this analysis is a combination of grounded theory and quantitative research methods. It involved regrouping the recurrent arguments from the responses to the consultation in structured answer lists. This allowed us not only to identify recurrent themes, but also to quantify the portion of users supporting each argument. For further details, please refer to Annex 3.

Chapter 1: Definition of an open standard

Most respondents (62%) expressed a positive opinion on the definition of an open standard proposed by the Government. However, the majority of respondents (95% including those expressing a negative opinion) suggested some modification of the definition. Most relevant modifications regarded the provisions on intellectual property (IP) licensing underpinning open standards.

The opinion s expressed on the impact of this policy on the industry and on government services were largely positive. Most respondents agreed that this policy would level the playing field, allow new businesses to enter the government IT market, have a positive impact on their organisation, and increase the value for money of the provision of government services. A majority of respondents recommended government investment to support this policy in terms of funding and participation in standard setting organisations and boards. According to most respondents, there should be no different rationale in the mandation of open standards on bespoke software or off-the-shelf solutions.

The negative opinion of most respondents to the consultation focussed on possible policies regarding IP rights. They were generally negative on the role of patents and licences in supporting interoperability, did not believe licensing systems implementing FRAND licences would level the playing field, and were very sceptical on the sustainability of royalty-free provisions and on the promise of non-assertion of patents.

Chapter 2: Mandation of specific standards

A large majority of respondents was also positive on mandation of specific standards in government IT procurement. However, the majority evidenced by this part of the

consultation was comparatively smaller than the majority evidenced in Chapter 1. This clearly emerges from the comparison of the figures relating to an almost identical question featured in Chapter 1 and in Chapter 2. In essence, mandation of open standards in general generated a larger consensus than mandation of one or more specific standards. However, the majority of respondents believe that this policy will improve value for money in government services, that there are no legal or procurement barriers to this policy, and that mandation of competing standards is not efficient. Moreover, they believe that this policy would not produce anti-competitive behaviour in public procurement and that it will have a positive impact on their organisation. Changes in technologies should trigger the review of a mandated standard, according to the majority of the respondents, and the government should have a gradual approach to dealing with the transition from legacy systems to new solutions complying with open standards.

The balance between standards and innovation is not a concern for the majority of the respondents, who believe that the policy of the Government should focus on open standards; innovation will naturally build upon that. Testing the interoperability of a mandated standard should be left to the government, which could in turn rely on test specifications of SSOs.

Finally, criteria to be followed by the government in mandating open standards that was suggested by the respondents of the consultation did not diverge greatly from the criteria proposed by the government. Rather, they suggested slight modifications to the proposed policy on the basis of their general stance (see "Tensions and trends" section below).

Chapter 3: International alignment

Most respondents to the public consultation did not see any incompatibility between the proposed policy and European legislation, regulations or policies, including the European Interoperability Framework (EIF) v2.0 and believe that this policy will benefit innovation and competition at a European level, for both UK and European enterprises.

Tensions and trends

From all the responses to this consultation, including the suggestions for alternative policy options that were solicited at the end of every chapter, and the other submissions (e.g. letters, roundtables) two main positions emerge, which are mostly centred on one fundamental issue: the implementation of intellectual property rights within this policy. This is the main cause for division of the consultation respondents and it permeates the whole consultation.

In chapter one, the main contrast is detected in part of the definition of open standards that mentions patents, licences and the promise of non-assertion. One group of respondents, including mostly current government suppliers, is not satisfied with the reference to availability at "zero or low cost", and "royalty free" licensing of patent bearing standards. They claim Fair, Reasonable and Non-Discriminatory (FRAND) standards are implemented both royalty-free and royalty-bearing at national and international level, in

accordance with EU legislation. They insist on a modification to this part of the definition. Another group of respondents, mainly individuals and SMEs, is equally dissatisfied with this part of the proposed policy, but for different reasons. They believe that FRAND licences do not guarantee that royalty-free conditions are transferred to subsequent owners of the licence, as open source licences do. FRAND licences, albeit royalty-free, are incompatible with open source software, and therefore are claimed to exclude small and medium businesses implementing this type of solution from the market all (i.e. the permission of FRAND standards will not sufficiently level the playing field).

In Chapter 2, the same dichotomy appears. According to the first group, while mandating open standards, the Government should allow vendors to freely draft their FRAND licences, by including either royalty-free or royalty-bearing conditions. Conversely, the second group stands for the implementation of open standards compatible with open source software, and therefore without FRAND, unless the latter is mandated to be compliant with free/libre/open source software (FLOSS) licences.

In Chapter 3, the first group maintains that this policy is incompatible with the EIF v2.0 and other European Union (EU) and international legislation, because it does not leave vendors free to implement royalty-bearing FRAND, which is recognised by the EIF v2.0; whereas the second group states that the provisions of this directive do not impact on member states' public procurement legislation. Hence, the EIF v2.0 is fully compatible with this policy.

It seems therefore that while the majority of respondents are generally positive on the proposed policy, and welcome the initiative of the Government to mandate the consideration of open standards in the procurement of government IT, the thorny issue of FRAND licences and their compatibility with certain business models, remains unresolved.

Structured responses

See Annex 1 for the Respondents List (a separate document available on the Cabinet Office [website](#)) and Annex 2 (at the back of this document) for the codebook which includes the codes of questions, answers and typologies used throughout this report.

Refer to the separate file *Statistical Data* available on the Cabinet Office [website](#) for detailed figures. Percentages refer to the number of respondents to that particular question.

Additional comments are a summary of arguments, not a list of individual comments. For individual comments please refer to the separate files of *Responses* available on the Cabinet Office [website](#).

Question set 1

Crit_Q01: How does this definition of open standard compare to your view of what makes a standard 'open'?

Responses to this question set were categorised using the following codes:

> 0.   I don't know/no opinion/blank
> 1.   In full (The definition of open standard corresponds in full to mine)
> 2.   Almost (positive/suggest modifications)
> 3.   Not quite (negative/suggest modifications)
> 4.   Not at all
> 99. Not applicable/relevant

Analysis

The majority of respondents (62.1%) were rather positive on the Government's proposed definition (Answer N. 1 plus Answer N. 2) of open standards, in this context. However, most of them (46.8%) proposed some modifications (Answer N. 2) to the proposed definition. More substantial modifications were proposed by those who were rather unhappy with the definition (Answer N. 3 - 28.7%) and by those who declared themselves entirely dissatisfied with it (Answer N. 4 – 9.0%). Finally, few respondents proposed radical changes in the definition. These respondents were not satisfied with the implementation of such a policy in the first place.

Overall, approval for the definition of open standard proposed by the UK Government was expressed by government bodies, SMEs, corporations, standard setting organisation (albeit these were often proposing their own definition of open standards), academics, and private citizens.[4]

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[4] For detailed percentages please refer to the document "Statistical Data".

Criticisms to the definition by those supporting the proposed policy mostly revolved around the lack of 'openness' or the concern that the current definition could be interpreted so as to allow some lack of openness. Concerns were expressed in particular on the impact of such a definition on the dissemination and development of open source software. Despite the Government's proposed definition referring to royalty-free intellectual property rights, a relevant number of voices warned against the implementation of a policy including the use of FRAND subject to a fee. Suspicion was expressed in general against the concept of "reasonable assertion" of IP rights.

Additional comments (Summary)

In the definition too much weight is given to the requirement for previous implementation of the open standard.	SME
The word "patent" should be replaced with "intellectual property".	Pers
The addition of examples of specification types can be useful (e.g. XML, JSON, REST, RDF), documentation formats (e.g. ODF, PDF), functional specific standards (BEPL), etc.	Pers
Intellectual property rights supporting open standards should be royalty-free and implementable at zero cost. The provisions regarding access at low cost is not sufficient.	Pers, SME
Access should be totally free. FRAND-related provisions should specify that licences should be free for the original licensor and for the following licensors.	AssExp
The definition is too weak; "Government must consider open standards" leaves a lot of leeway. The same can be said for the text "clear business reason or economic benefit not to adopt an open standard".	Gov
The availability of multiple independent implementations of the standard should not be a requirement (example provided from personal work experience).	Pers
The definition refers to the platform on which the open standard is implemented. This is not necessarily relevant.	Corp
The definition is roughly OK, but a strict definition of open standard is not acceptable because there is no consensus in the industry about what is "open".	Corp
More clarity in the definition is needed.	VCO
If patents are involved in an open standard, the Government should ensure the long-term sustainability of using such a standard. This is needed to avoid the problem of difficulties caused by future changes in patent agreements.	AssExp
The International and European Standardisation Organisations (ISO, IEC, ITU, CEN, CENELEC and ETSI) all have FRAND IPR policies; they do not mandate royalty-free patent licensing. This criterion therefore contradicts the formal standardisation system.	SSO

IP licences should be available at a low cost, not royalty-free, because the SSO support themselves by selling documents on standards and definitions of open standards.	SSO
The definition is too restrictive and doesn't provide the incentives necessary to ensure the availability of open standards based on state of the art technologies, which will ultimately lead to significantly higher cost for the UK Government.	Corp
The definition does not leave sufficient leeway in designing FRAND conditions. Not only IP licences should be allowed a royalty fee, but also different contractual provisions.	BusOrg
Both the development as well as the decision making-process of specifications and standards should be open to the contribution of any interested stakeholder. This should also include a public review. Intellectual property that is essential to specifications is licensed under FRAND terms or on a royalty free basis and in a way that allows implementation in both; proprietary and open source software.	Ac
"Low cost" needs to be defined.	SME
It is not clear what is meant by a "government body". It should be made very clear that the fact that an organisation is currently subject to vendor lock-in on account of its use of proprietary formats is not a "clear, documented business reason" to refuse adopting open standards.	VCO, BusOrg
In addition to patents, the copyright on the standard should also be included in the policy.	AssExp
The standard needs to allow and encourage implementations according to the "Four Freedoms of Free Software", as defined by the Free Software Foundation. The process of standard setting needs to be transparent and documented, and open for participation of all stakeholder groups and the general public. Once the standard is published, it must be publicly available, documented and redistributable, accessible to all interested parties in full, and royalty free.	VCO
The standard may only reference, build upon or include other open standards under the same definition.	VCO
The definition of "government body" should include also private bodies that provide public services. Royalty-free, non discriminating patents or non-assertion are fine, but they should bind sublicensors and subsequent patent owners. Evidence of implementation of a standard should be replaced with publicly available governance arrangement, which permit interoperability and platform/vendor independence.	BusOrg

The apparent omission of standards for concepts and architecture of software and systems – higher-level descriptions of software and systems – is a significant defect in the proposed approach and should be corrected.	SSO
A sound definition of open standards should include the following requirements: - There is more than one supplier for standard compatible software. - The standard document is available at reasonable costs. - IP licences necessary to implement the standard are available on reasonable and non-discriminatory conditions (royalty free or royalty bearing as determined by the IP holder).	Corp

Crit_Q02: What will the Government be inhibited from doing if this definition of open standards is adopted for software interoperability, data and document formats across central government?

Responses to this question set were categorised using the following codes:

0. I don't know/no opinion/blank
1. More difficult to use non-open standard software when this is still necessary
2. More difficult to have a wide range of suppliers/to choose the best supplier
3. More difficult to use upcoming standards (or open source software) due to a lack of sufficient evidence of implementation
4. More difficult to adopt open source solutions or to escape vendor lock-in (because of exceptions which allow use of FRAND)
5. More difficult to adopt open source solutions
6. Nothing (or nothing but bad practices)
7. Resist pressure from proprietary vendors to implement their own standards (e.g. OOXML). Risk of vendor lock-in
8. Nothing, because of the text: "unless there are clear business reasons why this is inappropriate" (negative)
9. Nothing, because of the text: "unless there are clear business reasons why this is inappropriate" (positive)
10 Nothing, because of the text: "unless there are clear business reasons why this is inappropriate" (unsure)
11. Interoperability problems with bodies other than central government (the scope is too narrow)
99. Not applicable/relevant

Analysis

Many respondents ignored the formulation of the question and did not explain directly what the Government would be *inhibited* from doing. Most of them, as most respondents in general, mentioned potential difficulties government would encounter in the implementation of the proposed policy.

The majority of respondents (43.2%), including SMEs, government bodies, standard setting organisations, voluntary and community associations, expert groups, academics, and individuals, responded that the Government would not be inhibited from doing anything. This was intended mostly in a positive sense, by referring to it being impossible for the Government to persevere with bad practices, as perceived by the respondents.

A respondent sub-group specify that the freedom of the Government (non inhibition) would be enabled by the text "unless there are clear business reasons why this is inappropriate" in the government document. This was perceived in a negative light by the majority of the respondents (5.3% - mostly including SMEs and individuals), who saw this as a sort of opt-out clause from the policy.

4.1% of respondents, including individuals, SMEs and one Corporation, saw this clause in a positive light. The clause was considered as a means to add flexibility to the policy, which is necessary to handle more efficiently (e.g. more gradually) the transition from the *status quo* (see also Question Mand_Q07). Another limited share of the respondents (0.6%) was unsure what the consequences of such text would be for the policy.

However, 9.5% of respondents, among which most were corporations and some SMEs, expressed concerns that the proposed policy would restrict the Government's choice in terms of suppliers. By implementing the policy, the Government would not choose the best performing product and would end up facing higher costs.

A few responses (4.7%) focussed on the difficulty of adopting open source solutions asa result of the proposed policy. Generally respondents (mostly individuals) did not offer a clear explanation of the causes of this difficulty. Other respondents, voicing the same concern (3%), made express reference to FRAND terms as the reason why open source adoption would be impossible.

1.8% of respondents warned that it would be more difficult to use open standard solutions because many of them lack sufficient evidence about implementation. These standards, according to them, are not less efficient or less well performing than others.

Government bodies and corporations (3%) expressed concerns over the use of proprietary software when this is still useful. Essentially, they seemed to be not very confident about the change from pre-existing solutions to new solutions implementing open standards.

Finally, some responses (14.8%) were excluded from the analysis because they did not provide an answer to the question. These generally express dissatisfaction with the current state of the market (namely, the dominance of one supplier) or are clearly dictated by a misunderstanding of the text published by the Government.

Additional comments (summary)

The policy needs to be strengthened in the direction of more openness; otherwise, the risk is high of some degree of vendor lock in and/or vendor domination.	Pers
The clause "unless there are clear business reasons why this is inappropriate" could be used for addressing closed formats that are nevertheless widely adopted by the public (particularly MS Office, but also many formats for movies and audio).	SME, Pers
The definition needs to embody more protection for the Government from organisational strategies like "embrace, extend, extinguish".	SME, Pers
Criticism on the inclusion of any form of mandatory licensing in the definition of Open Standard proposed by the Government. This is seen as increasing vendor lock-in rather than decrease it.	SME, Pers
The scope should be wider than central government. It should include also governmental bodies and local authorities.	Gov
The cost for migration to open standard will overweigh the saving for Government.	Pers
This policy will force enterprises to comply with standards, and this will represent a hidden cost for the Government.	Pers
The Government will have to exclude any vendors that extend open standards with closed components.	SME
Government projects could be delayed when operating in areas where open standards are not implemented.	Gov
An open standard is often the lowest common denominator and therefore the least performatory and least able to meet all functional requirements. Compliance with standards does not guarantee interoperability. It is important that standards and the area(s)/purpose of their application within a given scenario are explicitly addressed in Government requirements. Blanket statements of "compliance with all standards" are inadequate.	Corp
The use of this definition as a requirement for procurements could restrict the adoption of emerging or cutting edge technology as accompanying standards invariably follow some time later. The standards chosen should be limited and apply to relatively stable areas of technology. Attempting to utilise standards in fast moving areas of technology would be difficult and counter-productive. A problem occurs when there are conflicting standards (E.g. OSCRE and eGIF) that meet the definition. Choosing one above the others would restrict technology choice and possibly value for money. In such circumstances it may be prudent to either not give direction on the basis that the market will eventually "choose" or to specify alternatives.	Gov

This policy would make it more difficult for a significant fraction of innovative companies that don't operate on a business model that supply software on a royalty-free basis.	Corp

Crit_Q03: For businesses attempting to break into the government IT market, would this policy make things easier or more difficult – does it help to level the playing field?

Responses to this question set were categorised using the following codes:

  0.   I don't know/no opinion/blank
  1.   Easier
  2.   Potentially easier, subject to conditions
  3.   More difficult
  4.   No difference
  99.   Not applicable/relevant

Analysis

The majority of respondents (56.3%) believed the proposed policy would make it easier for business to enter the Government IT market. In addition a further 27.6% made essentially the same statement, but they subjected this positive effect to conditions.
Conditions that were mentioned were:

- Effective enforcement of this policy;
- The transparency of the tender process;
- Other action to be taken (without specifying);
- Standards should be fully free and open (no IP licences, not even FRAND).

6.6% of respondents maintained that the proposed policy would make it more difficult for businesses to enter the market, whereas 7.2% stated that it would make no difference to them. Among those, most were private citizens, individual software developers, and some SMEs that were generally sceptical about the likely success of this policy, for unspecified reasons. Arguments put forward suggested that current government suppliers would adapt to the new system and would make sure they could preserve their market dominance, and that it will take more than this proposed policy to change the status-quo. Further isolated arguments are mentioned below.

Another minority share of respondents (7.2%) argued that it would be more difficult for businesses to enter the government IT market. The majority of this share was made up of industry corporations. The main reason for the increased difficulty was the fact that some businesses are based on the exploitation of IP rights related to the software they provide, and would find no incentive to comply with this policy. The risk, it was claimed, is that these businesses will not continue to provide products/services to the Government. This

would result in increased costs for the Government (to adapt to next products/and services) and decreased quality of the products they would purchase (see further arguments below).

However, it is worth mentioning that this was not the dominant opinion among corporations, whose majority still replied that it would be easier for businesses to enter this market. This share of corporations also expressed perplexity over the text "unless there are clear business reasons why this is inappropriate" and insisted on the necessity for the Government to properly enforce this policy.

Additional comments (summary)

New suppliers will find it hard to gain access to reference implementations and to test their compliance with the standards.	SME
There could be an initial cost burden for any company.	SME
Provided these standards are maintained/controlled by open community and not big suppliers. Government has to play role of coordinator of the standards.	SME, Pers
If everything is web based, it should make it easier to service the Government. However the Government needs up to date browsers and good Internet infrastructure.	Pers
Mandating appropriate standards is more appropriate than being concerned about whether they are open or closed.	SSO
This policy will probably have little effect on how deals are done by the Government unless the decision making processes are made as open as the standards.	Pers
On page 12: the consultation states "In relation to software, standards must be compatible with free and open source software licensing terms to enable all suppliers to have fair access to competition for Government contracts (Ghosh 2005)" the link between open standards and licensing terms is not clear. It should be expressed the other way around – open source suppliers should comply with the determined open standards.	Corp
Choosing to define "open" in a way which is divergent from the majority in requiring "royalty free" may lead to standards choices that are different from the general market and hence create further barriers to new entrants or adoption of optimum IT solutions. In the shorter term there may be situations where suppliers are excluded because they cannot provide interoperable solutions with legacy IT systems or solutions and the legacy suppliers are the only ones who can do this. Therefore the policy may not be effective in the short term.	Corp

Crit_Q04: How would mandating open standards for use in government IT for software interoperability, data and document formats affect your organisation?

Responses to this question set were categorised using the following codes:

    0.   I don't know/no opinion/blank
    1.   My organisation would benefit from it
    2.   Alone, it would not be sufficient for a benefit
    3.   It would have a negative impact on my organisation
    4.   It would not affect my organisation
    5.   It depends on how it is implemented
    99. Not applicable/relevant

Analysis

A large majority of respondents (63.6%) stated that the Government's proposed policy would benefit his/her organisation. Most of the SMEs declared that this was due to the levelling of the playing field among competitors. They stated this policy would give them a chance to become suppliers to the Government, whereas at present they do not even attempt to enter the competition. Many SMEs and most individuals also mentioned that open formats would allow them to more easily interact and communicate with government bodies. Some added that in order to fully benefit from the proposed policy, this should be implemented not only nationally, but internationally and by all governments. Among these individuals there were private citizens that had no affiliation (for example, students or retired persons) but who expressed their positive opinion on the proposal nonetheless. Most declared that all business would profit from this policy thanks to the levelling effect. Some of them specified that this policy would enable them to interact more easily with government bodies as private citizens.

14.3% of respondents stated that the proposed policy would not have any effect on their businesses. Among those there were many individuals who do not have any affiliation to a specific organisation. They considered that this policy would not have any effect on them because they do not belong to an organisation or business.[5]

A substantial section of respondents (63, 6%) however specified that the proposed policy would have a positive impact on their organisation depending on how it is implemented. Conditions of a successful implementation were: a) strict implementation of the policy (e.g. no 'clear business reasons' clause); b) Royalty-free FRAND; c) Consistency and leading role assumed by the Government in monitoring mandate of the policy. Other respondents (4.5% - mostly SMEs) claimed that the proposed policy would not be sufficient alone in having a positive impact on their organisation. Other measures aimed at helping SMEs to become government suppliers (unspecified) were required.

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[5] Only 4 SME and 3 corporations responded with Answer N. 4. The others who gave this response were not businesses. Please refer to the document "Statistical Data" for detailed percentages.

Among those that answered that the proposed policy would have negative effects on their organisation (7.1%), there are SMEs whose business consists in providing support for systems integration. Some of them, however, specified that in the long run they would be able to reconvert their business and they would benefit from the levelling of the playing field. Others, including SMEs and individuals, declared that the proposed policy would not have any effect, either because of the flexibility provided by the 'business needs' clause or because it would remain impossible to implement open source software (seemingly again caused by the by the 'business needs' clause, which was considered to allow the use of FRAND standards). This position makes sense only if we interpret FRAND in the sense of for-a-fee FRAND licensing or with having terms which are incompatible with free or open source software.

Most corporations also declared they would benefit from the proposed policy, many of them because their corporate policy already provides for the implementation of open standards. Among the dissenting voices (Answer N. 3), self-declared suppliers of the Government stated that they would adapt to the policy. However, a review would be necessary of the current system and of the necessary modifications to comply with a new policy, and this could involve some costs for the Government.

Additional comments (summary)

This policy could be inconsistent with public procurement policies of major economies like France or Germany which both list FRAND standards and in general allow public entities to use standards other than those referenced (especially for document formats).	Corp (SW)
The Open Standards Initiative should incorporate an interoperability framework that allows department and application standards to co-exist with national standards until a natural refresh takes place, at which point the new standard can be adopted.	SME
We already use several standards to which we are bound by law. Having to implement supplementary standards for similar solutions would have cost implications, which eventually will be passed over onto Government.	Corp (TLC)

Crit_Q05: What effect would this policy have on improving value for money in the provision of government services?

Responses to this question set were categorised using the following codes:

0. I don't know/no opinion/blank
1. It would improve value for money (it will save public money)
2. Negative effects in the short run, but positive effects in the long run
3. It would have negative effects
4. It would have little impact
5. It would have different impacts, depending on the area/standard
99. Not applicable/relevant

Analysis

Most of the responses to this question were not centred on the improvement of value for

money in the provision of government services. A large majority (76.2%) however was clearly positive on the effects that the proposed policy would produce for the government expenses. In general, they declared that the policy would allow the Government to save money. This seemed to imply the indirect consequence of the improvement in the value for money of the government services, and they were therefore classified as Answer N. 1. Moreover, often these respondents focussed on explaining *how* this policy would improve value for money of the services provided by the Government, rather than directly answering the question (e.g. 'Yes, it will improve it ' or 'No, it will not improve it'). For most of these respondents, the improvement in value for money will be indirectly caused by better competition. However, a few respondents (SMEs) warned that the proposed policy would improve value for money at first, but become costly in the long term if the standards are not correctly maintained.

Finally, a large share of the respondents to Answer N. 1 (especially individuals, but also SMEs) who were albeit positive about the implementation of open standards, stressed that a much greater improvement in the value for money of government services would be provided by the adoption of open source software. Some of them argued that FRAND terms have to be replaced by royalty-free licensing in order to achieve this effect. Others (Corp) warned that in order to achieve the improvement, the Government should be clear since the outset about its needs (e.g. clear software specifications) and required standards should be appropriate for these needs and widely used in the marketplace.

7% of respondents stated that the proposed policy would negatively affect government finances, because of the upgrading costs; as before, they did not specifically refer to the improvement or worsening of the provision of government *services*. They just referred to the government general economic interests. Respondents that claimed that this policy would have no effect on government expenditure amounted to an identical share (7%). Finally, a smaller share of respondents (5.8%) declared that the proposed policy would have a negative impact on government expenditure (again, only seldom translated in value for money) in the short term, and a positive impact in the long term. Similarly to those stating that the policy would have negative effects on government expenditures, also these respondents cited the upfront costs of the transition from legacy systems to open standards as a cause of potential negative effects.

Additional comments (summary)

Only open standards ensure there is a minimum economic impact and maximum choice for the third party - enhancing the opportunity for digital inclusion and allowing use of open source software by the third party. This may have wider value for money implications beyond the given procurement budget.	Corp (HW)
Ensuring the highest levels of competition on a key procurement now, but also ensuring it can be replaced, maintained or extended by the widest possible range of suppliers in the future. The combined effect of more freedom and higher competition improves choice, stimulates innovation and lowers total cost as in any competitive environment.	BusOrg

The routine use of open data standards for all business information should be expected to produce staff resource savings by making open government a more automated process.	Other

Crit_Q06: Would this policy support innovation, competition and choice in delivery of government services?

Responses to this question set were categorised using the following codes:

        0.   I don't know/no opinion/blank
        1.   Yes
        2.   Yes, under certain conditions/but not on its own
        3.   No
        99. Not applicable/relevant

Analysis

A large majority of respondents (69.4%) stated that the proposed policy would improve innovation, competition and choice in the provision of government services.

Another relevant share (18.5%) however warned that this positive outcome is subject to conditions. For example, for the policy to be effective there should be strict implementation. Fears of an introduction of open standards that was too slow, especially as a result of the 'clear business reasons' clause, were voiced. Again, distrust for the exceptions and the non-discriminatory provision in the proposed open standards policy was expressed. In its place royalty-free availability of open standards was recommended.

Interestingly, responses indicating Answer N. 3 (9.2%, mainly including SMEs and corporations, but also many of the other typologies) utilised the same arguments to underpin their position: royalty-free open standards and strict implementation of this policy. The difference with those responses indicating Answer N. 2 mainly lay in the fact that they were less optimistic about the possibility of meeting the above conditions.

Arguments to flag up include the position of a small number of respondents strongly against mandation of specific open standards, which would have the opposite effect to mandation of open standards in general.

Additional comments (summary)

The implementation of open standards leads to the reduction in investment in unnecessary innovation.	SME
Open standards need to be coordinated and maintained; cultural changes also have to be fostered. More information and awareness on open standards is needed.	SME, Pers
Experience/Example: As an example of innovation and openness going together, one might look at the recently launched Raspberry Pi project - an attempt to bring computer programming to the masses at an affordable price and with an openness as yet unseen in	SME

computer circuit/logic board manufacturing.	
Standards should only be implemented in stable areas.	Gov

Crit_Q07: In what way do software copyright licences and standards patent licences interact to support or prevent interoperability?

Responses to this question set were categorised using the following codes:

- 0. I don't know/no opinion/blank
- 1. Licences/patents support interoperability or positive on licences/patents
- 2. Licences/patents prevent interoperability or negative on licences/patents
- 3. They do not have any impact on interoperability or it depends on how they are applied
- 99. Not applicable/relevant

Analysis

Most responses to Question Crit_Q07 did not mention interoperability. Hardly any of them mentioned interaction. They generally expressed a negative or positive opinion on licences and patents in the context of open standards. Many of them merely expressed their view on whether licences and patents support or prevent the proposed policy altogether.

In accordance with the responses, this analysis interprets licences/patents as for-a-fee or low-cost licences or patents. The arguments examined showed that positive opinions on royalty-free licences/patents are much closer to generally negative positions on licences/patents. For example, some respondents stated that only the GNU General Public License (GPL) does not prevent interoperability. We have classified these responses under the Answer N. 2, because the argument expressed by the respondents showed a negative opinion on licences/patents, which are generally perceived as being subject to a royalty fee.

Having made this necessary premise, the majority of respondents (66.7%) were generally sceptical about copyright licences and patents for open standards. They feared that the licensing costs would erase the competitive advantage introduced by open standards, by counteracting the levelling of the playing field. They emphasize that the concept of low cost of licensing is relative. What is low for one company can be high for another, depending on the size of the company.

Another relevant share of the respondents (22.9%) however, mainly including individuals, SMEs and people working for government bodies, expressed contrasting views on copyright and patents. Some of them declared that they do not have any impact on interoperability, which depends on software or standards features. Others maintained that the impact of copyright and patents on interoperability (or, more in general, on this proposed policy) depends on how they are applied. Here again, concerns about licensing costs were expressed. Finally, a few of these respondents were positive about copyright

and negative about patents (6.3%). These respondents have been classified within Answer N.3, because of their intermediate stance.

Additional comments (summary)

Interoperability is achieved by properly documented APIs (Application Programming Interfaces). Any licences granted must therefore include the right to utilise APIs.	SME, Pers
Experience/Example: Patents are also a bit of a red herring in the UK, because it is not legal to assert software patents in the EU. However, the UK must operate in a global economy and my own company have had some concerns in the past because a US competitor had filed patents on technology similar to that which we ourselves developed in the early nineties. So, despite the legal landscape in Europe, the patent elements of the open standards definition are very important.	SME
Patent licensing promotes interoperability, by allowing participants in the ICT ecosystem to share innovative technologies.	Corp
There is a variety of ways in which users of a standard could be artificially influenced by a potential patent holder. When there is the risk of a patent assertion, smaller suppliers lose the certainty to be able to work freely, and therefore they lose their protection to innovate and to compete.	BusOrg
IPR policies should be set by the Standard Setting Organisations.	Ac

Crit_Q08: How could adopting (Fair) Reasonable and Non Discriminatory ((F)RAND) standards deliver a level playing field for open source and proprietary software solution providers?

Responses to this question set were categorised using the following codes:

0. I don't know/no opinion/blank
1. FRAND will level the playing field (does not specify how/not clear how)
2. FRAND helps, but royalty-free is better
3. With a better definition of FRAND, accepted by most standard setting organisations
4. FRAND does not level the playing field. Royalty-free is the way forward/It will level the playing field only if FRAND means royalty-free
99. Not applicable/relevant

Analysis

A clear majority of the respondents (Answer N. 4 - 58.2%) to Question Crit_Q08, including all typologies, declared that FRAND will not level the playing field. The reason is that even royalty-free FRAND licensing is not mandated to be transferred to subsequent licence owners on the same conditions. Therefore, a FRAND standard that is royalty-free can became royalty-bearing in the future. This is in contrast to licensing conditions of open source software (GPL) which are instead transferable under the same conditions to the subsequent owners. In short, FRAND is not compatible with open source software. Most of

these respondents specified that only royalty-free licensing would level the playing field. A fraction of these respondents, however, did not offer specific explanations for their stance. They were merely negative on FRAND, ostensibly targeting licences that are subject to a fee. They argued that FRAND standards represent a barrier to entry into the market for SMEs. It should be noted however that some respondents did not show a clear understanding of the difference between licensing standards and licensing software.

A substantial minority of the respondents (18.2%) stated that FRAND would level the playing field. However, most of them did not specify in what manner. The very few respondents who added an explanation of how FRAND would level the playing field mentioned the fair comparison between open source and proprietary software and the more balanced access to the market, in essence reiterating the idea of improved competition. An expert association added that FRAND would level the playing field because by "capping payments for licences embedded into software costs, it should reduce software costs". 6.1% Of respondents, moreover, stated that FRAND would help to level the playing field but a better definition of FRAND was needed.

9.1% of the respondents, mainly individuals and SMEs, were essentially positive about FRAND, without specifying whether they are intended to be royalty-free or not. However, they all clearly stated that FRAND is only the second best option: royalty-free licences compatible with FLOSS licences are the most effective solution to level the playing field for open source and proprietary software solution providers.

Finally, a smaller fraction of respondents (6%) mentioned that FRAND could level the playing field but it needs better definitions, including whether licences are royalty-free or not, and the engagement of subsequent owners of the licence to respect the same licensing conditions.

Additional comments (summary)

FRAND is too meaningless to be of use. A specific licence baseline ought to be established. That baseline should permit any open source implementation.	SME
Whilst FRAND is a good starting point for the creation of a level playing field, other mechanisms (not necessarily related to standardisation) also have to be applied to ensure a level playing field in IT procurement. An example of this is where an organisation that is using a standard in multiple instances may have a reduced licensing cost per instance if the FRAND terms are not volume related.	Corp (TLC)
There is a clear legal analysis that identifies why the non-permissive OSS licences (i.e. GPL type) are incompatible with what is generally viewed as FRAND - unless specific RF, non-discriminatory, non assertion clauses are added. That, however, is not current practice. Therefore, a clear open standards policy should be applied with a precise definition of an open standard requiring royalty-free (RF), non-discriminatory and non-assert clauses for licensing, while FRAND as such and as commonly understood will not help.	BusOrg

Providers of dependent, satellite services are commonly required to integrate with central infrastructures through proprietary (and often chargeable) APIs. This not only increases the cost of entry to the market for the SME suppliers of such dependent services, but also makes it difficult for anyone to challenge the position of the supplier of the central infrastructure. The adoption of FRAND standards could help deliver a level playing field by allowing new, niche suppliers to sell their products freely, allowing them to integrate automatically with other systems.	BusOrg
Difficulties arising from a lack of a universally agreed definition of FRAND could be resolved through further policy statements at European level as well as through the decisional practice of the European Commission and resulting case law of the European Courts.	Prof
A FRAND standard, however the patent holder defines 'fair and reasonable,' is going to be ignored by the open source community, as unimplementable. The open source community is not a legal entity and cannot pay any royalty. In practical terms, a royalty of £0.01 is as much a barrier as one of £1m.	SSO

Crit_Q09: Does selecting open standards which are compatible with a free or open source software licence exclude certain suppliers or products?

Responses to this question set were categorised using the following codes:

- 0.   I don't know/no opinion/blank
- 1.   Yes, it would exclude some suppliers, if they only rely on incompatible solutions
- 2.   No, it will not
- 99.   Not applicable/relevant

The majority of respondents to this question (65.1%) replied negatively, by stating that selecting open standards which are compatible with a free or open source software licence would not exclude certain suppliers (there were hardly any references to products). 28% of respondents indicated the possible exclusion from the government IT market of some suppliers. However, respondents see that as a free – and bad – choice of the suppliers who rely on incompatible solutions.

In essence, drawing a line between Answer N. 1 and answer N. 2 was very difficult, because many respondents giving Answer N. 2 also stated that only suppliers unwilling to implement open standards would be excluded from the market. However, they also specify that there is no reason for not implementing open standards. Most of them in fact stated that if open standards are truly open, there are no obstacles to their implementation, so the development of incompatible software would be a free choice. The costs of changing to compatible software are considered by some respondents to be limited due to the open and accessible nature of standards, and therefore they do not consider them to represent an obstacle for suppliers. A few respondents mentioned difficulties for new companies that

may have difficulty in adapting to a new system.

However, some corporations responded clearly in a way that corresponds to Answer N. 1. They argued that for some companies, whose business model is not based on royalty-free software, staying in the market could prove challenging. These companies develop further functionalities of existing software and their main source of revenue lies in the exploitation of the IP rights attached to their products.

Finally, a small number of respondents, misunderstood the question in the sense that open standards would *only* be compatible with open source software, and this was seen as a distortion of the market.

Additional comments (summary)

A strong view of open standards would stipulate that software that is not fully compliant with open standards would be excluded. There are, however, weaker positions in which (say) documents or data are required to comply with open standards but where software systems may comply (sometimes partially) with several standards, so as to compete in different markets. The weaker position may be inevitable since standardization is not a once and for all activity.	AssExp
While participants in the "product market" may not be excluded through any requirement that they implement a royalty free standard, the Government's decision to select only standards which are free of royalties will have an adverse impact on certain participants in the upstream technology market. Specifically, those companies who derive a substantial portion of their revenues from upstream patent licensing activities.	Corp (SW)
Experience/Example: Open standards do not mandate open source software. The Opera Browser demonstrates strong support for open Web Standards, but is closed source.	SSO
Standards are supposed to define protocols, formats and interfaces, not to describe implementations. Commercial suppliers are free to implement proprietary implementations of open standards, if a business model for doing so can be found.	Ac

Crit_Q10: Does a promise of non-assertion of a patent when used in open source software alleviate concerns relating to patents and royalty charging?

Responses to this question set were categorised using the following codes:

      0.   I don't know/no opinion/blank
      1.   Yes, it helps
      2.   No it does not help/it is not sufficient/only if binding/generally suspicious
      99. Not applicable/relevant

Analysis

An overwhelming majority of respondents to question Crit_Q10 (79.1%) was suspicious of the non-assertion of a patent when used in open source software (Answer N2). Some

respondents suggested that this promise can be easily worked around with contractual clauses (i.e.. about exceptions). Others warned that the threat of legal costs involved in litigation on this promise would be discouraging for some. Many stressed that a royalty-free patent would be more effective for the purpose. Concerns were also raised (by individuals) on the international value of the promise. Others warned that in order to be useful, the promise of non assertion have to be necessarily binding also for subsequent owners of the licence.

Even amongst the share (13.5%) that expressed a positive opinion on the non assertion of a patent, the tones were rather those of a second best option than those of an enthusiastic endorsement. From many respondents, mainly individuals and SMEs, a preference emerged for royalty-free licences to non-asserted IP rights. Finally, some SMEs noted that a non-assertion or restriction-free promise that is compatible with all major FLOSS licences would be the best option to alleviate concerns.

Additional comments (summary)

It should not be possible to reverse such an assertion in any way, which means a legal instrument is required as a defence for users of the patent. The assertion also needs to cover both implementers of the patent and end users.	Ac
Such a provision would be a positive discrimination for open source software and the service-oriented business models behind it thus creating a significant disadvantage for closed source software manufacturers that deliver perfectly compatible software. This can lead to a considerable distortion of the market.	SSO
Promises of non-assertion may eventually be rescinded (e.g. when the patents it covers are sold to another company). Commitments made to standardisation organisations are much more reliable.	SME
Non-assertion is a perfectly usable alternative. Indeed many non-assertion examples are far wider in scope that royalty fee licensing for particular standards. However it should be checked that the non assertion is still non-discriminatory (i.e. for both open source and closed source solutions) and valid for the intended purpose.	Corp (HW)

Crit_Q11: Should a different rationale be applied when purchasing off-the-shelf software solutions than is applied when purchasing bespoke solutions?

Responses to this question set were categorised using the following codes:

0. I don't know/no opinion/blank
1. Yes (different rationale for off-the shelf and bespoke software)
2. No
99. Not applicable/relevant

Analysis

A large majority (82%) responded to this question that no different rationale should apply when mandating open standards to COTS (Commercial Off The Shelf) software or

bespoke solutions. Most of them specified that there was no reason for a different rationale.

A minority (12.3%) of the respondents was in favour of a different treatment instead. Among these, a few respondents (mainly SMEs) were open to exceptions in favour of bespoke software only in special circumstances, for example when the software requirements of the Government are very specific and difficult to meet. Two individuals expressed a favour for a preferential treatment of bespoke software without further clarifications.

Finally, some respondents misunderstood the question. They thought the question was whether the Government should prefer either COTS (Commercial Off The Shelf) software or bespoke solutions. These responses have been classified as Answer N.99, and therefore excluded from the analysis.

Additional comments (summary)

Open standards might be an additional reason to use bespoke solutions if there is a choice. For the latter, open standards can be mandated, without compromise.	SME, Pers
The interaction with other systems has to adhere to standards.	SME, Pers
A bespoke solution should not be a back door into vendor lock-in.	Pers
A COTS solution is like a 'black box' that just needs to demonstrate conformance to a standard or specification and, ideally, be certified. For a bespoke solution, it is important to ensure that the underlying architecture is open, as well as the solution conforming to mandated open standards.	SSO
The buyer has more power in the market when buying bespoke; so, mandating standards for data and document formats is easier.	SME
It should be a case by case decision.	SME
The rationale should be the same but practical strategies might be different.	AssExp
The same approach should apply when standards apply to external interfaces. But where bespoke solutions are required to only interface internally with other bespoke solutions, then the mandation of open standards would drive up costs for little or no benefit	Gov

Crit_Q12: In terms of standards for software interoperability, data and document formats, is there a need for the Government to engage with or provide funding for specific committees/bodies?

Responses to this question set were categorised using the following codes:

0. I don't know/no opinion/blank
1. Yes (funding for committees/bodies)
2. Only for a short period
3. No
99. Not applicable/relevant

Analysis

An overwhelming majority of respondents (73.5%) replied to question Crit_Q12 that they would welcome government engagement and/or funding for committees and bodies in the implementation of this proposed policy. Responses on the level of engagement required of Government ranged from strict monitoring of the implementation of standards, by creating a specific standards board, to supporting standard setting organisations with funding, and organising social events (for example, conferences) to disseminate open standard culture. An intermediate stance was to recommenda regular participation of the Government in standard setting organisations, with or without the addition of funding.

According to most respondents, the main engagement activities that should be undertaken by the Government are the clear definition of standard specifications, ideally with the assistance of standard setting organisations, and providing material and environment for compliance and interoperability testing (BusOrg).

Within the minority of respondents, 9.9% suggested funding only for a short period, in order to support the change. Another 8% declared that funding or special engagement of the Government, beyond clearly specifying its needs in terms of standards, is not necessary, because the existing infrastructure is sufficient. Some corporations expressed caution about government funding. They specified in particular that funding standard setting organisations has the potential to harm the impartiality of their work.

Additional comments (summary)

Experience/Example: The engagement of the Government in standard setting is already working. One example is provided by the SIF Association UK, funded by an arm of Government to support the development of two open standards in the test industry (IEEE 1641 and IEEE 1671). In addition, the department that provides this funding also sends its own personnel to attend standards co-ordinating committee meetings; in this way both parties gain knowledge and expertise.	SMEs
Government should fund the development of open source software by communities.	Pers
Government should use funding to run compliance and interoperability testing.	Ext
Government's best contribution would be outlining the requirements it sees as needing	BusOrg

a standards based solutions or where standards are seen to be deficient. There is also a key role in providing suitable material and environments for compliance and interoperability testing.	
Government should provide funding on a case by case basis.	SME

Crit_Q13: Are there any are other policy options which would meet the described outcomes more effectively?

Other policy options

Most replies to this question did not address the question. Respondents mostly used this opportunity to make general recommendations to the Government, or to restate above-mentioned comments and stances on the best implementation of this policy option. In order to avoid repetition, this report does not mention all themes and comments that have already been mentioned in other sections of this analysis. Comments that do not represent another policy option or a supplementary action have therefore been excluded from the analysis.

Seek as an interim measure publication of an open API and clearly defined machine readable meta data about the underlying data model of any application or service and ensure data can be moved in our out of the service or solution by a third party.	SME
All software purchased or developed by the Government should be Open Source (OSS or FOSS) as defined by the OSI. Government could rely on service providers to perform the necessary adaptations and maintenance.	SME, Pers, VCO
Development of an interoperability map for Government would support the adoption of the policy. This map should show where open standards are in use for connectivity between parts of Government and where they are not. It should however only show those linkages, or potential linkages, outside of organisational boundaries. This would have a strong link into the "open data" initiative.	Gov
Distributed Standard Patent Licensing, whereby you opt into a group that will cross-license everything within an eco-system / network. The implementation of a Service Orientated Architecture (SOA) enforced through appropriate architecture governance that optimises the use and integration of off-the-shelf, bespoke and "open" standards solutions at all levels. Mandation of specific commercial off-the-shelf (COTS) offerings across the organisation for specific functions, e.g. a single payroll system, which, albeit proprietary, may be lower cost than a bespoke "open" standards based solution. Development of a cost model for software projects that accounts for potential incompatibility between offerings in a realistic way, coupled to methodology, organisational structure and custom and practice that systematically manages the issues over time as they arise.	Corp

The consideration of openness ought to be separated out from the consideration of standardisation.	VCO
Adopting open communication protocols (where openness is an asset). Evaluating and utilising open source software and only paying for commercial support of it. Avoiding large, proprietary, packaged solutions unless they are focussed on a very commoditised, non-differentiating set of capabilities and there is the opportunity to undertake exhaustive due diligence. Enforcing the policy that software complexity must never exceed the operational complexity it's intended to address.	Corp
The creation of appropriate schema standards and supporting tools for defining data standards and testing their validity, providing generic test harnesses with a low marginal cost. A badging / certification regime which has a sufficient marketing budget behind it to ensure that possession of a badge has commercial value to implementers. A standards incubator which ensures that before any new badge is created, candidate specifications are backed by multi-lateral implementations and interoperability is demonstrated by informal plug-fests, with the cost of participation being borne by the standards developers /implementers. Before being formally recognised, candidate specifications and associated badges are required to progress through adequate beta phases, during which the success of real-world implementations is monitored. The badging regime is backed by a robust legal framework, ensuring that any failure of interoperability is resolved rapidly or else the badge is withdrawn, with transparent reporting of all incidents and the processes by which they are resolved.	SSO

Question set 2

Mand_Q0:1 What Criteria should the Government consider when deciding whether it is appropriate to mandate particular standards?

Responses to this question set were categorised using the following codes:

1. Business need attribute
2. Standard attribute
3. Market attribute
4. Business and standard attribute
5. Standard and market attribute
6. Business and market attribute
7. No particular standard should be mandated

Business need attributes include criteria relating to stability, suitability and relevance. Standard attributes relate to IPR, availability, interoperability with other standards, consensus and consultation processes, support and change throughout the lifecycle of the standard. Market attributes include market support, adoption and maturity.

Below is a summary list of the criteria that emerged from the consultation responses. Where possible, repetition (also with other parts of this document) has been avoided.

Summary of business need attributes

Suggestions focussed on the use case and how business needs might be met by the use of standards within a particular context. There were a wide range of suggestions made with a number of personal and SME respondents focussing in particular on:

- Proven cost/benefit value and whether mandating the open standard would improve the value for money of the service delivered.
- Alignment with the policy of the Government
- Public business case

Summary of other suggested criteria for business need attributes

- There is a viable open standard in a particular domain
- Advantages can be realised through interoperability
- The standard/functionality is fit for purpose and meets a genuine need of the Government, for instance, security, safety, data sharing.
- Benefits of single or multiple standards
- There is no competing standard, or if there are, both standards are equally mandated
- Compatibility with existing standards and practice
- Capable of being implemented
- Has appropriate geographical scope e.g. national or international

- Operates within appropriate legal and governance frameworks
- Government has the means and the will to enforce
- Approved by an identified sponsor who commits that there is sufficient justification and resources
- Ensure that government decision makers conduct market research and procurement planning sufficient to understand the range of potential choices
- Scalability, available support and availability of skills to adopt/utilise

Summary of standard attributes

Several personal and SME respondents suggested the following attributes:
- Degree of openness
- Complete information is published
- Implementable in free software
- User-friendly
- Up-to-date and maintained
- Ratified by a recognised standards organisation
- Durable/mature
- Must have a fair/affordable compliance testing process
- Delivers interoperability

Summary of other suggested criteria for standard attributes

Other respondents suggested additional criteria that were focussed on topics such as:
1. Governance and access
2. Status and lifecycle
3. Certification and compliance
4. Licensing and fees
5. Implementation

1. Governance and access
- Developed through an open process with all stakeholders able to contribute and information accessible to any stakeholder
- Transparent governance process
- Ease of access
- Be the result of consensus between suppliers and customers
- Cover the whole of the relevant supply lifecycle (maybe in combination with other standards from the same source)
- Several major industry contributors – not be driven by a single company
- Mature process
- Consider standards developed by business sectors.
- Should be under the management of a recognised/respected standards body like OASIS or the W3C

2. Status and lifecycle

- Be maintained going forward to meet industry needs
- A recognised history / lifecycle / further roadmap for the standard
- Status of the standards body

3. Certification and compliance
- Testing and certification regime
- Certification programme that guarantees conformance, requires the supplier to fix problems in a known time-frame, and provides for exceptions to be considered

4. Licensing and fees
- Require fair disclosure by vendors of any product fees, charges, conditions, or benefits at the outset of a transaction
- FRAND licensing in a way that allows implementation in both proprietary and open source software
- Any patent rights necessary to implement the standard are available to all implementers on reasonable and non-discriminatory (RAND) commercial licensing terms, either with or without payment of a reasonable royalty or fee

5. Implementation
- No barriers to implementation
- Aligned to other standards
- Sufficiently tightly profiled to ensure that it offers effective plug and-play interoperability
- Cheap to maintain

Summary of market attributes

Several personal and SME respondents put forward criteria focussing on:
- Widespread functionality
- Allows for innovation
- International adoption
- Adopted/supported by suppliers/customers
- Previous use in the public sector

Summary of other suggested criteria for market attributes

- Sufficiently tightly profiled to ensure that it offers effective plug-and-play interoperability
- Mature products
- Implications for product design
- The number of competing implementations / implemented in a range of relevant software, including free, open source and proprietary solutions.
- The existing implementations have reached a reasonable level of stability
- Promote/adopt industry best practice
- Only mandate where anti-competitive practice is identified (the Competition Commission should impose on named market dominators a standard which has

already been proven by their competitors).
- The market sector concerned should be mature and unlikely to produce rapid technical improvements

Standard and market / business and market attributes

Responses that were a mixture of standard and market or business and market attributes have been included in the summary of standard, market or business attributes and have not been duplicated here.

Business and standards attributes

One respondent (Gov) provided a response which the analysis classified as business and standard attributes. However, as this suggested an alternative policy option with associated criteria, this has been included in the section below.

Further arguments

In addition to the criteria relating to mandation, other arguments were put forward relating to broader implementation or policy considerations.

One respondent (Gov) suggested that there could be different tiers of standards:
- Tier 1 Mandatory – for example, those standards related to transparency, information assurance, free market economy
- Tier 2: Mandatory: comply or explain – for example, those standards aimed at improving efficiency, reducing costs, and so on

- Criteria for Tier 2 standards are suggested to include:
- The standard should achieve variety reduction in ICT data exchange interfaces across the public sector as a whole
- Adoptable by multiple users
- Complementary to other standards
- Maintainable, adapting to use if necessary
- Free at the point of use

Opt-outs should only be permitted if it can be shown that:
- Adoption would increase costs across public sector as a whole
- Adoption would decrease transparency or information assurance

Other arguments included requests for a preferred list of standards (SME) and for a common metadata store (for example, an authentication system) and future access to bulk data (Gov). The Government was asked to ensure that once each piece of information is standardised, it is usable across government without change, and achieves government-wide optimisation (Gov). An argument was also raised that the set of mandated processes should be limited (Gov).

Establishment of clear functional specifications was called for as well as the avoidance of

endorsement of a specific type of technology (BusOrg SW). The Government should consider intellectual property rights and should not discriminate on the basis of whether or not the vendor asserts intellectual property rights and should adopting software asset management (SAM) throughout all government agencies (BusOrg SW).

Government was urged to consider the use of cloud computing services as hardware, operating systems and development tools are increasingly moving from the "product" to "service" category, with a range of "platform as a service" and "infrastructure as a service" solutions now available.

Additionally, an argument was put forward (BusOrg, SME) that the Government should not mandate particular standards at all as this would disrupt the market and encourage anti-competitive behaviours.

Mand_Q02: What effect would mandating particular open standards have on improving value for money in the provision of government services?

Responses to this question set were categorised using the following codes:

0.   I don't know/no opinion/blank
1.   It would improve value for money (it will save public money)
2.   Negative effects in the short run, but positive effects in the long run
3.   It would have negative effects
4.   It would have little impact
5.   That depends on the standard
99. Not applicable/relevant

Analysis

At the outset, we need to state that many respondents interpreted this question as referring to mandating open standards in general rather than mandating *particular* open standards. Their interpretation was not always obvious, and therefore we did not take it into account within the analysis. Moreover, as in Chapter 1, respondents focussed on general money saving for the Government, rather than specifically addressing the issue of value for money.

72% of respondents supported the view that mandation of open standards (or of particular standards) would improve value for money in the provision of government services. Among the causes of this improvement cited were: reduced risk of supplier lock-in; greater choice; faster migration / implementation; reduced cost of integration specialists; increased competition; lower prices; improved quality; building on existing products; enabling re-use and sharing across departments; flexibility to change software components.

Within the minority, 8.4% of respondents believed that mandating particular standards would not benefit government expenditure. The main argument for this assumption was the distorted competition caused by the Government choosing a "winner", not on the basis

of the best product but on other criteria. Also, a point was made that the proposed policy would restrict innovation (Corp). Another respondent suggested that choosing good standards was more important than choosing open standards (SSO).

6.5% of respondents maintained that this policy would improve value for money in the long run, but it would increase government expenditures in the short term, because of the costs of the transition. An identical percentage (6.5%) conversely maintained that the effects of this policy would depend on the standard mandated. These commentators often suggested that mandation is not always appropriate: it depends on the area of implementation. Mandating an open standard in the right area would improve value for money, whereas mandating standards in an inappropriate area would be counter-productive.

Finally, 3.7% of respondents indicated that the proposed policy would have little effect on the provision of government services, because the saving prompted by the levelling of the playing field will be outweighed by the costs of transition.

Additional comments (summary)

'Open' does not of itself imply 'Good'. Adopting an 'Open' but 'Bad' standard could seriously increase costs and reduce efficiency.	SSO
As to our understanding a mandate of specific procurement standards would cause anti-competitive behaviour since this would restrain certain technology solutions in the market. However a recommended open standard would have the effect to ensure a level playing field for all interested parties.	Ac
Simplification of software and services provision should decrease costs. There will be reduction in integration costs available at all steps of the solution delivery, just reducing the testing of multiple permutations would be a major advance.	BusOrg
Utilization of open standards can be expected to improve value in the UK Government's IT investment strategy. It creates transparency, broader opportunity, and reduces the risk that the Government will become dependent on a solution that is based on a proprietary standard that cannot be replicated by other vendors.	Corp (SW)

Mand_Q03: Are there any legal or procurement barriers to mandating specific open standards in the UK Government's IT?

Responses to this question set were categorised using the following codes:

    0.   I don't know/no opinion/blank
    1.   There are no barriers
    2.   Pressure from the current suppliers
    3.   Need for cultural change in procurement/danger if inertia of procurement professionals/need for information and guidance

4. Assertion of IP rights
5. Interoperability with current software
6. EU legislation/regulations/International treaties
7. Accusation of anti-competitiveness
8. Additional costs
99. Not applicable/relevant

Analysis

39.1% of respondents declared that there are no barriers to mandating open standards according to this proposed policy. Respondents mostly referred to procurement barriers, because they declared themselves not to be sufficiently competent in the legal area.

Among the specific procurement barriers indicated by those responding affirmatively, 12.6% indicated pressure from the current suppliers, 11.5% the need for cultural change from procurement officers, who might be resistant to change, because of their insufficient education on open standards. In addition, 4.6% of respondents mentioned the assertion of intellectual property rights as a procurement and legal barrier, whereas an identical share (4.6%) warned about claims of anti-competitiveness, but no specific examples were provided. A small share of respondents (2.3%), moreover, mentioned the additional cost as a deterrent for such procurement.

8% of respondents were concerned about the legal barriers to the proposed policy, in particular in terms of EU directives (e.g. EC Directive (2004/18/ EC)), regulations and standard setting. Other respondents mentioned the European interoperability Framework (EIF) v2.0 and its reference to FRAND as a first cause of tension between the proposed UK policy and the European position.

[For further details on legal barriers see also the responses to question Int_Q01.]

Additional comments (summary)

Experience/Example: EU requires OBD (on-board diagnostics) for cars but it is semi-closed and generally very expensive even to find out about anything in excess of the small mandated part. That is great for the car makers but anti-competitive and damages everyone else from consumers to independent garages. Even finding out about the mandated part is non-free and not particularly cheap.	SME
Vendors may look to use the flexibility usually available within standards to differentiate their offerings. This may result in hidden lock-in which is difficult to identify, police and only comes to light a later date. "Open" standards bodies may specify constraints that exclude the interoperability to major IT vendor platforms. It cannot be assumed that the "Open" standard or "Open" source community are or will remain altruistic in their approach or values. It is important that the likelihood of these risks occurring is assessed on a case-by-case basis and if appropriate mitigations put into place.	Corp
Legal barriers: • The Public Procurement Directive (2004/18/EC), which requires that technical	Corp (SW)

specifications in tenders afford equal access for bidders and do not include unjustified obstacles to the opening up of public procurement competition, and the Public Contracts Regulations of 2006 transposing the Directive, which include a similar restriction, • The proposed Regulation on European Standardisation which is currently being finalised by the Council and the European Parliament, • Directive 98/34/EC laying down a procedure for the provision of information in the field of technical standards and regulations, • Article 34 of the Treaty of the Functioning of the European Union which prohibits quantitative restrictions along with measures having equivalent effect on trade among Member States.	
A claim might be made that that a specific standard is a product rather than a specification.	BusOrg

Mand_Q04: Could mandation of competing open standards for the same function deliver interoperable software and information at reduced cost?

Responses to this question set were categorised using the following codes:

> 0.   I don't know/no opinion/blank
> 1.   Yes/possibly
> 2.   No/unlikely
> 99. Not applicable/relevant

Analysis

The majority of respondents (58.6%) replied that mandation of competing open standards would not deliver interoperable software at reduced costs. The concern most expressed by these respondents was that competing standards pose a high risk for interoperability.

Among these respondents, some specify that mandating competing standards is more appropriate for non-specialised areas (such as word processors, for example), and less appropriate in highly specialised services (for example, in patient identification software). Mandating competing open standards was mostly considered inefficient and costly by these respondents. Many suggested that mandating open standards in general, rather than mandating two or more specific standards would achieve a similar goal.

28.8% of respondents however were positive about mandating competing standards. The main argument put forward is that if standards are truly open and widely implemented they should be interoperable, or at least integration costs should be very low. In this case there is no reason not to mandate competing open standards.

However, many respondents from both groups of respondents specify that if it is possible to identify the 'best' standard, there is no point in mandating more than one. They suggest

a better alternative would be to mandate open standards in general rather than specific ones.

Additional comments (summary)

Experience/Example: There are two competing open standards for office documentation; Open Document Format (ISO 26300) and Office Open XML (ISO 29500). These two standards are totally incompatible and mean that vendors have to try to support both, which adds to costs.	Pers, SME
Mandating competing open standards for the same function is likely to result in systems that are not interoperable as some will implement one standard while others will implement another one.	Pers
There are a few instances where supporting multiple competing standards can make sense but they need to be justified: • when existing systems or suppliers already support different competing standards (e.g. SAML or OpenID for authentication). It may then be necessary to deliver at least one implementation that supports multiple standards in order to act as a bridge; • when several competing standards are widely used by the industry (e.g. PNG or GIF as image formats). It is generally expected in this case that all suppliers be able to support all competing standards transparently; • when different standards provide similar functionality but with different breadth of functionality, in which case the simpler standard can be use when it is over-kill to use the more complex one (e.g. SSL Mutual Authentication vs WS-Security for web service security). In this case, products that support the more complex standard usually support the simpler one too.	SME
A single open standard should be mandated for any specific purpose. Multiple standards will reduce competition because only a few companies will be able to implement both standards. This will increase costs. If there are multiple standards available for a specific purpose, the preferred standard should be chosen based on a combination of being a higher quality standard (as assessed by impartial experts), implemented by a wider range of vendors and implemented by open source solutions.	Pers
The Open Office XML standard should not be used because it serves the same purpose as the Open Document standard, but contains more errors, is not truly open and does not have an open source implementation.	Pers
The number of competing standards for the same function should be kept to a minimum to avoid additional costs in interoperability and testing.	SME
In some cases it may be useful to mandate on an either/or basis to prevent further options emerging. In others it might be preferable to wait for the market to find the winner, which might prove to be a new option.	Gov

Mand_Q05: Could mandation of open standards promote anti-competitive behaviour in public procurement?

Responses to this question set were categorised using the following codes:

> 0. I don't know/no opinion/blank
> 1. Yes/possibly
> 2. No/unlikely
> 3. Depends on the standard
> 99. Not applicable/relevant

Analysis

The majority of respondents (68.1%) declared that mandation of open standards should not promote anti-competitive behaviours in public procurement. On the contrary most respondents specified that it is current practices that are rather anti-competitive. Mandation of open standards would level the playing field and therefore improve competition among suppliers.

26.5% of respondents conversely stated that it is possible that mandation of open standards could promote anti competitive behaviours. Many of them however specified that this would not be directly caused by mandation of open standards; rather it would be caused by the malicious attitude of proprietary vendors or of a failure of this policy (e.g. inefficient or slow implementation).

In essence, amongst these respondents there was a general feeling that anti-competitive behaviours are unavoidable, and do not depend on open standards. One respondent (Pers) stressed that harm to competition is possible if the costs of implementing the standard and verifying its compliance are high.

An external (non-UK) observer noted that although open standards are typically in line with procurement principles, such as transparency and non-discrimination, when an open standard is not supported broadly, mandation could lead to anti-competitive behaviour. That is why the Dutch Standardisation Forum/Board also uses "support" and "added value" as criteria for mandation.

Additional comments (summary)

There are 'open' standards that are inextricably tied in with commercial providers that directly promote products based on their 'open' standards. Such professedly open standards seem in practice to be proprietary. This offers clear potential for anti-competitive behaviour.	SSO
One of the typical sources of anticompetitive behaviour is the patent strategy behind the open standard. Lack of enforceable patents should allow for avoiding these dangers.	Ac

Government should be aware of these dangers and mandate only standards that would effectively level the playing field.	
"Open" standards bodies may specify constraints that exclude the interoperability to major IT vendor platforms. It cannot be assumed that the "Open" standard or "Open" source community are or will remain altruistic in their approach or values.	Corp (TLC)
Entities will be motivated to influence the governance of open source projects with the goal to undermine their success in the market. Such behaviour has already been observed and needs to be legally considered equivalent to unfair competition between companies, and subject to anti-trust enforcement.	VCO

Mand_Q06: How would mandation of specific open standards for government IT software interoperability, data and document formats affect your organisation/business?

Responses to this question set were categorised using the following codes:

0. I don't know/no opinion/blank
1. My organisation would benefit from it
2. It would not be sufficient for a benefit, alone/benefit in the long run/benefit subject to conditions
3. It would have a negative impact on my organisation
4. It would not affect my organisation
5. It depends on how it is implemented
99. Not applicable/relevant

Analysis

Many respondents to question Mand_Q06 refer to their answer to question Crit_Q04, in suggesting that their company would equally benefit from mandating open standards in general or mandating specific open standards. Our observations on respondents providing an answer to this question, despite them not having a business, apply here as well. Individual participants without a business, on occasion, expressed their general approval for the proposed policy. Open source organisations also expressed their wish that an 'open' culture would spread and they would have an indirect benefit (See analysis of Crit_Q04). It is interesting to note that the different proportions of respondents correspond to those of question Crit_Q04.

Overall, 58.8% of respondents declared that their business (or businesses in general) would benefit from the proposed policy, whereas only 6.9% declared that it would negatively affect their organisation. 12.7% stated not to be affected by this policy. 4.9% declared that this policy alone is not sufficient to bring benefits to their organisation, or at least not in the short run (but they see benefits in the long run); whereas 3.9% (the same share as in Crit8Q04) claimed the advantages or disadvantages would depend on how the policy is implemented.

Benefits mentioned by those who were positive about the proposed government policy were: the possibility to participate in government tenders for SMEs; the increased usability of data or document files, as a company or as a user; facilitating innovation (e.g. in the NHS); reduction of costs.

Adverse effects for organisations, which could be caused by the proposed policy, include: reduced freedom to use newer standards as they develop (because of the required evidence of implementation) or alternative approaches (possibly proprietary) that might more usefully support the work of the department (Gov); increased costs to do business with the Government if the open standards are not already available and supported in products (due to switching costs) (SME); distortion of competition (Corp).

Additional comments (summary)

All legacy systems should be fully documented by the existing IT vendor, including data standards. These documents should be taken to a third party (contracted open source vendor) to check for accuracy.	SME
This policy would simplify and clarify supplier relations and could improve SME access by minimising the requirement for bilateral licensing arrangements. In effect the Government will be having clear 'rules of engagement' that simplify assessing the business case - although it may not suit every business model or proposition.	Corp (HW)
It would reduce the tendering cost significantly as all parties would be able to understand what is needed as they would all be working to the same targets. From experience, if software is being built to one or many target standards, the job of the architect becomes much simpler and the project is much more likely to succeed.	SME

Mand_Q07: How should the Government best deal with the issue of change relating to legacy systems or incompatible updates to existing open standards?

Responses to this question set were categorised using the following codes:

- 0. I don't know/no opinion/blank
- 1. Delegate the issue to users/vendors
- 2. Gradually/initially allowing coexistence with previous formats/case by case/leave in place legacy systems and provide an interface with new systems
- 3. Set strict time-scale for compliance/generally strict approach
- 4. Educating users
- 5. Providing incentives for vendors
- 99. Not applicable/relevant

Analysis

The largest proportion of the respondents seem to be divided between those advocating a gradual approach of the Government in dealing with change, and those advocating a strict approach. The gradual approach prevailed with 42.5% of respondents, whereas the strict approach was supported by 29.2% of respondents.

Suggested policies for the gradual approach include: initial co-existence with legacy formats; implementation of standards only when this is efficient (on a case by case basis); ensured backward (mostly) and forward compatibility by new systems.

Arguments proposed by those advocating a strict approach were: if a change has to occur, better sooner than later; no exceptions should be allowed (e.g. the "clear business reasons" clause); strict deadlines for the implementation of this policy are needed; strict monitoring of compliance is needed.

Interestingly, both advocates of a gradual and a strict solution endorsed a clear roadmap (timescale) for the transition to occur. A specific period of 5 years was mentioned a few times by the respondents, as an illustrative example, without giving any explanation on the timeframe.

Additional comments (summary)

Expenses for exit of legacy system (e.g. training, etc.) should be borne by the Government.	SME
The Dutch "comply or explain" regime operates with regard to procurement cycles. This means that there is a natural transition period for most legacy systems. A government organisation may explain in its yearly report when they have arguments for not having required relevant open standards in a procurement. Sometimes converters maybe necessary to connect with legacy systems.	Ext
There needs to be a mechanism that enables impact analysis of the changes to any standards. Change must be mandated only when efficient.	Corp
Government should engage directly with standards development organisations in order to best ensure current and future standards (that are important to government ICT services) have development paths that, where possible, minimise incompatibilities.	Corp (SW)
Government should implement an Enterprise Architecture management and governance framework through which we manage our system rationalisation.	Corp (TLC)
The Government should adopt the migration fee strategy proposed in the Scott Report.[6] The Government should provide strong incentives for vendors to assist in migration.	VCO
It will be necessary to preserve legacy capabilities even if they are not fully compatible with everything introduced subsequently. This means it is necessary for the Government to accept the concurrent use of multiple standards for similar functions.	SME
Legacy systems, if non-compliant with the policy (which may not be the case), should be limited to a specific set of 'closed' or 'gated' groups. A clear requirement for standards to enhance interoperability may still be needed to address non-compliant legacy implementations. The actual process will vary depending on the exact application but this needs to be defined in each case before deployment of the mandated solutions.	Corp (SW)

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[6] See http://www.thescottreport.com/

Mand_Q08: What should trigger the review of an open standard that has already been mandated?

Responses to this question set were categorised using the following codes:

0. I don't know/no opinion/blank
1. Changes in available technology/changes in licensing conditions/appearance of more efficient standards
2. When the standard no longer meets the use case
3. There should be a periodical review/Standard Boards
4. Complaints/concerns from users/vendors/flaws found on the standard
99. Not applicable/relevant

Analysis

Most of the respondents (48.5%) expressed the opinion that changes to the technology, to licensing systems, and to the needs of the Government/users, should trigger the review of an open standard that has already been mandated.

Another substantial share of respondents (25.2%) conversely suggested periodical reviews on the efficiency/functioning of the mandated standards, to be performed by the Government. To this end, some suggested the creation of specific bodies inside the Government (standards board) charged with monitoring the efficiency of the standards, the need of departments, the compliance with the implementation timeframe, assessing new standards, etc.

Complaints from users and vendors, and malfunctioning of standards were also indicated by a share of respondents (13.6%) as triggers for review of the standard. Finally, a relatively small section of respondents (4.9%) indicated the inability of the standard to meet the need of the Government (use case) as the sole trigger for review.

Actions to identify the changes, in particular related to standards upgrading, standards malfunctioning/inefficiency, and upcoming standards, include the government participation in standards bodies.

Actions to identify malfunctioning, interoperability (or lack of), and efficient integration, include the organisation/participation in events such as Plugfests, in which suppliers and users would get together to test products (BusOrg).

Additional comments (summary)

The standard should not be mandated, it should be mandated that open standards are used. The open standards body should put forward the options and evolution should create the pressure to change.	SME

The Government should be proactive and not wait for a trigger but should make it a standard review every six months because technology evolves at a fast pace.	SME
If a standard has been mandated but not well adopted, care should be taken as to whether this is the fault of the standard (e.g. it is an inappropriate standard and needs to be reviewed) or the fault of weak conformance (in which case active intervention to ensure adoption, such as disqualifying non-conformant vendors is more appropriate than blaming the standard).	SME
If the standard is not truly open, then it should be reviewed and replaced.	SME, Pers
Individual standards update only slowly once mature. Use mature standards where required.	SME

Mand_Q09: How should the Government strike a balance between nurturing innovation and conforming to standards?

Responses to this question set were categorised using the following codes:

0. I don't know/no opinion/blank
1. There is no tension between innovation and standards/standards help innovation/ Government should take care of standards. Innovation will follow/it is not the Government's role to nurture innovation
2. Government should use up-to-date standards/participating in standard bodies which would help driving innovation/monitoring standards
3. By using really open standard/by implementing this policy strictly
4. By adopting emerging standards
99. Not applicable/relevant

Analysis

Respondents to this question seem to be mainly divided between those recommending some form of action of engagement by the Government, in order to strike a balance between standards and innovation, and those who did not see a particular tension between conformance to standards and nurturing innovation, and therefore did not recommend a specific action. Within these two groups, different stances were taken, all having in common an underlying action or inaction of the Government.

Advocates of government inaction (instrumental to striking the balance between standards and innovation) were in the majority (63%). They argued that innovation and standards go hand in hand, or that standards do not have any impact on innovation, or that - on the contrary - they help innovation. Some argued that governments should not nurture innovation; they should only mandate open standards, and innovation will follow.

Advocates of government involvement in striking the above-mentioned balance (25%) suggested that the Government should ensure it uses use cutting-edge technology

standards in order to nurture innovation. This stance was in contrast with the opinion that emerged in the answers to previous questions that the Government should only implement mature and stable standards, in order to avoid unforeseeable maintenance and integration costs.

Government engagement should take the form of participation in standard bodies, or internal creation of standard boards, both targeted at monitoring the technological progress of standards. Forbidding software patents (SME) and using open source software (Pers) were also often mentioned as a strategy to strike the balance between innovation and standards.

5.6% of respondents expressed again their concern about the success of the proposed policy, suggesting that the Government should adopt 'really' open standards and strictly implement this policy. By that, they seem to imply that the policy as it is proposed does not offer sufficient guarantees that the implemented standards would be truly open or that the policy would be rigorously implemented.

Finally, a small share of respondents (0.9%), suggested the direct implementation of emerging standards in order to nurture innovation while conforming to open standards.

Additional comments (summary)

Government should be more innovative on small scale projects that present a lower risk, and be more cautious on large scale projects. For the latter it would be better to implement stable and mature standards.	SME
The Government should encourage the development of proto-standards in emerging areas which have not been codified, but only where they meet the openness requirements.	Prof
The Government should consider the potential for innovation when adopting open standards. Caution is recommended for breakthrough technology standards, which may represent a higher risk. For these, the exceptions allowed by this policy should be invoked.	BusOrg
Utilization of open standards can be expected to improve value in the UK Government's IT investment strategy. It creates transparency, broader opportunity, and reduces the risk that the Government will become dependent on a solution that is based on a proprietary standard that cannot be replicated by other vendors.	Corp (SW)
Standards by their nature are about freezing (or at least constraining) the subject matter of standardisation for an agreed upon period of time. During that period, the existence of the standard is actually constraining innovation in the area of the standard. Of course freezing the subject matter of the standard itself allows innovation to occur on top of or around the standard. On balance, the marketplace has a number of mechanisms in it which help drive changes to standards (or even the emergence of new standards altogether) to ensure that innovation continues.	Corp (SW)

Mand_Q10: How should the Government confirm that a solution claiming conformity to a standard is interoperable in practice?

Responses to this question set were categorised using the following codes:

0. I don't know/no opinion/blank
1. Testing/investigating similar solutions (or other action by the Government)
2. Proof of concept/evidence of compliance (or other action by the vendor)
3. Testing by third parties (standard setting organisations/independent agencies)
4. Call on public feedback/complaint by users
99. Not applicable/relevant

Analysis

Some actions were suggested by respondents to address the interoperability of mandated standards. Main subgroups of the respondents to this question essentially differ in opinion regarding the entity that should take charge of confirming the interoperability of the mandated standard. The largest majority (44.8%) maintained that the Government should test the compliance of the standard, or it should study solutions that have been already implemented and are successful. Another way would consist of organising interoperability workshops, or similar events, between vendors and the Government.

Another large proportion (23.8%) suggested the testing to be performed by third parties, ranging from standard setting organisation to independent agencies (whether or not internal to the Government). 20% opted for a simpler solution, by suggesting to require a proof of concept or other evidence of compliance (as for example certification from a standard setting organisation). Finally, a relatively small share of respondents recommended calling on public feedback or setting up a complaint system to be used by standards' users. This would reveal the flaws of the product (1%).

As for the testing material, most respondents voiced the opinion that a set of conformance tests should be established by independent standard bodies, to be used by the Government (Answer n. 1) or by the vendor (Answer n. 3)

Additional comments (summary)

Standard setting organisation should develop conformance test tools. This should involve establishing a free test environment where vendors can test software at their convenience. Products that conform to this testing would obtain a corresponding certification.	SME
Ask (and pay) a competitor of the winning solution to prove it doesn't conform.	Pers
Government should undertake more rigorous testing in safety critical implementations, supplier declaration of conformity in less critical environments.	Corp
A mandated open standard can become outdated. An efficient communication system that allows the services to complain about compatibility issues with the rest of the world should trigger a review of the decision of mandating a certain standard.	SSO

Mand_Q11: Are there any are other policy options which would meet the objective more effectively?

Other policy options

A list of recommended policy options has been compiled from the responses. Many of the responses were general recommendations to the Government and have therefore been excluded. Other recommendations consisted of very specific actions to undertake in order to solve a specific problem related to the business or the personal experience of the respondent. Finally, many themes have already emerged from the answers to the above questions, and have therefore been excluded in order to avoid repetition.

Open standards adoption can be accelerated when the standard is accompanied by an open source reference model. So for all mandated open standards, it is recommended that a University group be chosen to develop the open source reference model, which could also be used in the testing process.	SME
Maintaining and coordination of standards should be priority in the Government strategy.	Gov
Government should establish a central public register of government IT projects including open standards, data and APIs supported. All government IT projects over a certain level of expenditure would have to register and maintain their entries in this system which could include, amongst other things, sprint-completion demos and tracking-to-plan reporting.	Pers
It could be useful to develop a map of systems used by departments against technology solutions underpinning them.	Gov
On some standards, the Government could assign a representative to the organisation in charge of the standard in order to contribute back to it and ensure that it is fully understood. The best way to make best use of open standards is to be fully part of their elaboration.	Pers
There is a symbiosis between open standards and open source - in particular, open source provides a good opportunity to create a standards-compliant reference implementation which can be used directly by government organisations or customised / extended by suppliers.	Pers
Every piece of software developed for government customers should be published as open source. This policy option would have the added benefit of increasing the ability to replace vendors since another vendor could be employed to take over maintenance of the open source solution, thus increasing competitiveness.	SME
Government should make it a local authority duty to include assessment of open standards in procurements.	Gov

Mandating open standards in appropriate mature areas; encouraging open standards in less mature areas and being neutral in areas where standards did not exist or were immature. In addition, experiences would be shared in order to identify (a) new standards which seemed promising and (b) mature standards which were becoming obsolete or whose value was diminishing.	Ac
The initiative on open standards should be aligned or even potentially merged with that on open data.	Gov
Capabilities and services should be standardised, and an open and transparent process for selecting products and services to be used by the Government should be established.	AssExp
Government should mandate levels of standard (e.g. data interchange must be via XML not a simple text format) without initially mandating the whole standard.	Pers
Backward and forward compatibility rather than only forward compatibility should be promoted.	Pers

Question set 3

Int_Q01: Is the proposed UK policy compatible with European policies, directives and regulations (existing or planned) such as the European Interoperability Framework version 2.0 and the reform proposal for European Standardisation?

Responses to this question set were categorised using the following codes:

   0. I don't know/no opinion/blank
   1. Yes (the UK policy is compatible with EU policy/legislation/regulations)
   2. No
  99. Not applicable/relevant

Analysis

This question had the highest number of responses that did not address the question. Many respondents simply declared themselves not to be competent enough to give an answer or suggested that this was a question for a lawyer. The majority of respondents (54.5%) gave a positive answer on the compatibility of this policy with EU laws and regulations. However, many of them added that this was true to the best of their knowledge.

Among the positive respondents that seemed informed about the European legislation or proposed legislation, most of them stressed that the EIF v2.0 is too general and does not represent an obstacle to the enactment of this policy (SME, Pers). Other respondents expressed concerns over the compatibility with some EU policy on open source. The European Commission's Joinup programme, and in particular the Asset Description Metadata Schema (ADMS) were mentioned (SME). Among the remaining respondents, some stressed that the proposed policy is compatible with European legislation, except for the provisions on FRAND and patents.

Among those providing a negative answer (23.6%), many were not specific about the incompatibility of the proposed policy with EU law. They rather expressed general dissatisfaction with this policy, and in particular with the non-discriminatory provision in the proposed open standards policy. Those that were more specific stressed that EIF v2.0 allows both royalty-free and royalty-bearing standards and it is therefore in contrast with this proposed UK policy, which they state allows only royalty-free standards (SME, Corp).

[For further details on legal barriers see also the responses to question Mand_Q03.]

Additional comments (summary)

In a series of policy documents including the Horizontal Agreement Guidelines, the European Interoperability Framework version 2 and the soon to be finalised Regulation on European Standardisation, the same arguments were made that for policy reasons patents in standards needed to be available on a mandatory royalty free basis. In the	Corp (SW)

case of the European Interoperability Framework version 2, the Commission rejected these arguments, concluding that royalty free standards were not required to meet interoperability objectives.	
After lengthy debate and consideration, the EU changed its approach to open standards from EIFv.1 to EIF v.2.0 because it determined that the best way to achieve interoperability was to create a completely level playing field in which all operators have an opportunity to bid for public contracts and in which public authorities are presented with the best technologies to suit their needs. EIF v2.0 ensures procurement is open to both those who use standards as well as to patent holders who are willing to license on FRAND terms.	Prof
The EIF sets specific expectations of member states in seeking compatibility by 2013. The EIF provides a policy and set of criteria but does not determine individual member states' procurement policy and definitions.	BusOrg

Int_Q02: Will the open standards policy be beneficial or detrimental for innovation and competition in the UK and Europe?

Responses to this question set were categorised using the following codes:

0. I don't know/no opinion/blank
1. Beneficial
2. Beneficial under conditions/depends on how it is implemented
3. Detrimental
99. Not applicable/relevant

Analysis

The overwhelming majority of respondents (69.2%) declared that the proposed policy would be beneficial for innovation and competition in the UK and in Europe. Most of these answers, though, did not provide any additional explanation. When an explanation was provided, beneficial causes mentioned were: levelling of the playing field; more choice among vendors, and new SMEs entering the market to provide products and services to government bodies. External observers mentioned the positive experience of other countries (e.g. the Netherlands) as evidence that this policy would be generally beneficial for UK and European businesses. 13.2% of respondents declared that this policy would be detrimental.

A share of respondents (14.3%) considers that the anticipated beneficial effects of this proposed policy are conditional. Among the conditions, many arguments have already emerged from responses to previous questions, such as for example: an effective implementation of this policy, without too many exceptions; a correct IP management (e.g. mandating royalty-free standards as opposed to for-fee FRAND standards); implementing the correct testing environment; and monitoring the efficiency of the new system and ensuring compliance.

There is the risk that the policy of giving precedence to international standards could lead to the adoption of an international standard which is disadvantageous for UK businesses as opposed to standards that are advantageous for them.	Gov
For interoperability across multiple countries, adoption plans will need to be harmonised. This will be particularly difficult in terms of timescale.	SME
This policy will create additional challenges for suppliers participating in bids for the Government, because of the upfront mandation of standards as opposed to implementation within a specified timescale.	VCO
The open standards policy will remove one or more funding model for the development of standards and so be detrimental for competition in standards development.	Gov
This policy will be detrimental for businesses as long as a better definition of local standards is not provided.	SME
This policy will be beneficial for innovation and competition, but only in the medium term. The market place is moving in this direction anyway, and many major initiatives are already under way in Europe.	Corp
There is a danger that European standards as produced for example, by the European Committee for Standardization, the European Committee for Electrotechnical Standardization (CENELEC)), or European Union Directives could be used as a trade instrument to protect national interests against wider global changes and improvements.	AssExp
The English-speaking countries worldwide are a strong and well-connected market in health information systems, and an idiosyncratic UK or European approach will decrease the competitiveness of UK companies in this market.	SSO (health)

Int_Q03: Are there any are other policy options which would meet the objectives described in this consultation paper more effectively?

Other policy options

Refer to comments on Crit_Q13 and Mand_Q11 about the inclusion criteria for these responses.

We need international vendors of software to be engaged as well as users from the different domains of applications. One method consists in profiling the standards in different domains of application to provide users with a clear context of use and therefore a way of getting involved in the standards profiling. A similar structure will be required for the Government, i.e. profiling for transport, energy, manufacturing, healthcare, local governments etc.	SME
There is inevitably a tension between international standards and the need for local standards. The establishment of legitimate constraints of international standards to meet local need is, therefore, essential and will need UK coordination - with the ability to feed any request-for change inputs into receptive international standards organisations. The NICC (www.niccstandards.org.uk) and IHE (www.ihe.net) models are exemplars.	Pers

Government should have an open standards group which will have a coordination function with the international stakeholders.	Gov, VCO
Make open standards projects a high priority in EU funding of (e.g. Lifelong Learning).	SME, Pers
UK policy could also show preference for international standards. If so, the Government should make resources available to contribute to the ratification process.	Pers
Where standards have been extended, vendors developing the extension should make immediately and freely available at no or negligible cost.	Pers
At a time when the balance of trade and international relations is moving towards new economic powers, (e.g. the 'BRIC' nations), it is essential to have an international approach. It is therefore important to be active in international standards organisations. Also, harmonization between the activity of de jure standard setting organisation and voluntary standard setting organisation is required.	BusOrg
An open European policy would be very welcome. The differences between the country policies could harm European companies. It is essential that standards are selected through the involvement of all stakeholders with an open and transparent process.	Ext
The definition of a reference set of open source tools for government IT e.g. open source databases, operating systems, office suites etc.	Pers
The Government should make procurement processes and operating standards simpler in order to allow suppliers to propose relevant standards with a view to European interaction, in a timely fashion.	Corp
Given the nature of the IT business it would be most beneficial to mandate international standards rather than just European or UK alternatives. Government should use its influence to broaden an open standards policy internationally and so minimise possible conflict whilst maximising competition.	Gov
The Government should also give attention to standardising capabilities and services. Also, an open and transparent process should be developed for selecting products to be used by the Government.	AssExp
It is essential for the success of this policy that the Government invests in training those who will have to implement the policy around the UK public sector, and in making it possible for them to receive advice on an ongoing basis.	VCO
It is recommended that the Government sets up a standard board/team within Chief Executive Officers (CEOs) of the Government, charged with monitoring the implementation of the policy, dealing with changes, upcoming standards, and compliance/cost effectiveness.	Corp

Unstructured responses

Short emails/letters

The Cabinet Office, in the course of the Open Standards Consultation, received 79 short emails/letters in relation to the consultation. These did not follow the structure of the response template provided by the Cabinet Office, with the three sets of questions as displayed in the online consultation. They were mostly letters ranging from few lines to one page, declaring their support for the government policy and making one or few isolated suggestions.

Of the 79 emails, 19 recommended conforming to the definition of open standards to the Open Source Initiative. Ten emails, including some of the 19 mentioned, expressed severe criticisms against the provision for exceptions (e.g. use non-discriminatory standards) in the proposed policy, and in general against FRAND terms. The main argument expressed against FRAND is that, even when they are royalty-free, they are not binding for subsequent owners of the licence, unlike open and free licences such as GNU. In this way, the proposed government policy on open standards is said to impede the implementation of open source software and impedes the levelling of the playing field towards business based on open source models.

Three of these emails presented an alternative formulation of the definition of open standards proposed by the Government, in the sense of allowing the use of open source, whereas 5 of the emails recommended the adoption of entirely open source models (FLOSS/OSS/FOSS) in government procurement. Another 6 emails however only expressed general support for the government policy, and indicated open standards as the way forward.

Six of the emails received expressed criticisms of the standard Open Office XML (OOXML), and indicated that it is not a truly open standard and is an example of what should be avoided in the implementation of this policy. Two letters were generally against the policy, in particular because of the open source exclusion, and the remaining emails were excluded from the analysis because they provide only general comments.

Long letters and articles

In the course of the consultation, the Cabinet Office also received 12 unstructured submissions, in the form of long letters or short articles. These submissions did not follow the structure of the Annex provided by the Cabinet Office.

Most relevant themes emerging from these unstructured contributions relate to the need for clarification of the policy goal of the Government. In particular, it is not clear, according

to some respondents, what goal the Government wants to achieve with this policy, whether an action on competition is envisaged in order to stabilise the market, or whether these are only internal measures to improve the procurement of IT (in practice, to get better value for money). Depending on the answer to this question, different implementations of the proposed policy were envisaged.

Other respondents felt the need for a better clarification of the objective of this policy, the reference to software, documents and data not being sufficient. In particular, they stressed that the difference between hardware and software and between software and telecoms is not so clear-cut, given the emergence of mobile and cloud computing technology. This policy therefore risks having unwanted spillovers in other technological fields, and this is a problem that needs to be addressed.

As for IP licensing relating to open standards, these submissions display again the dichotomy between software/telecom corporations (and their legal advisers), criticising the royally-free reference in the policy, and the open source developers/supporters, who claim that the royalty-free (FRAND) reference in the policy is not sufficient because it is not enforceable against subsequent rights holders, and it therefore hinder the implementation of open source software.

Specific arguments (summary)

The FRAND definition on the government document is unsatisfactory, because it impedes the adoption of royalty-bearing standards. Many efficient and broadly implemented standards, approved by standard setting organisations are royalty-bearing. These standards, and the company developing them, would be unjustly discriminated against by the proposed policy of the Government. This definition of open standards will have negative effects on competition and on innovation. This policy is contrary to EU policy. There is no evidence that FOSS vendors are discriminated against.	Prof
Strategic government goals should determine the public procurement of IT resources in general and computer programs in particular. Deciding which application to deploy solely based on cost savings or solely based on one preferred business model, is a too restrictive approach and will lead most likely to ineffective decisions with wide and long-term consequences. Strategically viewing and leveraging open source software should be done on a case-by-case basis and include all financial and legal aspects in regard to the life-cycle of that computer program. Moreover, any government should make a sharp distinction between the procurement policy goals to improve operational management, and economic sector policy goals to organise markets.	Prof (Ext)
The introductory policy background statement says that the draft policy is aimed at	AssExp

"supporting a level playing field" improving 'access to government IT procurement' and government's lack of "flexibility to switch between suppliers and products, but no examples or illustrative scenarios are provided by the Government.	
It should be specified whether the five criteria that are expressed in the definition of an open standard will all be applied to every standard under consideration.	
It is not clear whether this is a policy to intervene in public procurement practices only or is there an intention to intervene in the market to address some sort of market failure including distorted competition.	
The policy should include IT services (E.G. cloud computing).	
Mandation should only follow a clear transparent and published economic case.	
Government should define the scope of the mandation via the use case or the reference architecture. Reference architectures will need to be defined in terms of components that are integrated using open standards in order to allow component substitution and give context for the mandation.	
The consultation is overly simplified. It is not possible to separate 'software and telecoms' and also 'software and hardware'.	SME
Governments are not in the business of setting standards – they are in the business of engaging with people.	
Governments need to appreciate the politics of open standards, which is quite complex.	
Many forms of licensing, mix of open source and open standards with permissive licensing like Apache need to co-exist.	
Open standards based on RF licensing of any claimed patents are indispensable if open source solutions are to be possible, and these are needed in order to allow the widest range of competition to derive the greatest economic benefits.	Pers
Open source is not compatible with the payment of FRAND-type licensing fees.	
FRAND licensing is fraught with uncertainties, since it is not a licence in itself, but merely a commitment to grant a licence on certain vaguely-defined terms, whose details may be – and frequently are – the cause of later lawsuits.	
Privacy considerations should also be a key factor in deciding whether an open standard solution is the best option. Open standards can promote important privacy specifications such as data minimisation, federated identity management and deletion and retention of data. We would propose that guidance issued on adopting open standards refers to relevant guidance on data protection and ISO standards related to privacy.	Gov
In relation to data sharing measures, the Information Commissioner wishes to emphasise that appropriate legal provision is required in order to share information and data across and beyond government boundaries.	
The technology industry supports the principle that open standards are fundamental for ensuring systems interoperate across government, delivering better services to the citizen and more efficient government. However, there is no common position amongst the industry with regards to the definition of open standards and its relationship to a	BusOrg

royalty free or alternative approach.	
Standardisation and openness are separate concepts and should be dealt with separately. Openness alone should be sufficient to satisfy competition concerns. If the use of open standards is a means to the end of Government policy to promote competition then it is not appropriate for procurement to subvert that policy. Any failure to adopt an open standard must demonstrate consistency with the Government's competition policy objectives. Therefore, any failure to adopt open standards should be accompanied by an alternative, funded, plan which achieves the desired policy objectives. A business case, compelling or not, should never be sufficient.	VCO
The stakeholder representation in the various standards panels, boards, and management structures should be constructed to ensure both the diversity and independence of inputs. Why do we need to define a class of open standards when the likely specific standards can be named in procurements already. Standards should be employed as per their individual utility best suits the times and circumstances, not according to the writing on the label attached to them. Alternative policy: a) Providing a Standards Preference List, perhaps grouped by context, ranked from most open/preferred downwards; b) Clear simple Instructions on how to use the Policy and List; c) Provision for mandation (= should, comply or explain) or compulsion (= must, no option, do it) in some very specific areas for business/strategic reasons; d) Support for specification authors and procurement officers in order to ensure correct practices. Government should define the legal value of the words « must » and « should » in the policy, and use these terms more carefully.	
The proposed distinction between software and hardware in the Consultation and open standards definition is not sustainable. The proposed definition of open standards will not assist the Government to fulfil the stated objectives of the policy of re-usability, interoperability and modularity. A royalty free and non-assertion policy would not save money but will reduce competition and quality and may increase total cost of ownership. A blanket royalty free and non-assertion policy has the effect of being discriminatory. The Government must ensure a coherent policy on IPR and innovation. The Government must implement a policy that is aligned with international consensus.	Corp
Patent holders need to preserve their rights in a way that encourages them to contribute their innovative solutions to the standardization effort. "RAND" patent policies seek to provide this type of balance by helping to make that patented technology available to all on "reasonable and non-discriminatory" (i.e., RAND) terms and conditions. The redefinition of « open standards » as proposed by the Government risk to harm the incentives to technological innovation, and will result in adverse consequences, such as: a) Technology leaders will reduce or cease participation in (or technical contributions to) voluntary standards-related activities, b) Individuals and organisations will not invest (or	BusOrg SSO

will invest less) in the development of innovative and next-generation technology in the technical areas subject to standardization, thereby creating innovation "dead zones" in those areas.

Roundtables

In the course of this consultation, the Cabinet Office held seven roundtables. Roundtable 1 was discounted due to a conflict of interest; therefore only 6 roundtables are included in the analysis. Informal recordings were made during the discussions; these are signposted from the Cabinet Office [website](#).

The issues raised for discussion in these roundtables are summarised below. These are cross referenced with the consultation question to which they relate. Note that in some cases the questions were rephrased for different audiences.

Roundtable 2

Crit_Q07 In what way do software copyright licenses and standards patent licenses interact to support or prevent interoperability?

Most participants found that IP rights, but more specifically patents, hinder the market because of their monopolistic nature. They state that patents impact negatively on interoperability, and they prevent the use of open source software, hence excluding some vendors (and disrupting competition).

Participants representing software corporations restated their position in favour of FRAND, by stating that many widely implemented standards are already based on FRAND licences. Moreover, licences guarantee 'patent peace', because they allow freedom of operation without fear of being sued.

Crit_Q10 Does a promise of non-assertion of a patent when used in OSS alleviate concerns relating to patents and royalty charging?

The opinion of most participants was not favourable to the promise of non-assertion. Some stated that non-assertion helps level the playing field, but it does not exclude underlying legal issues. Other stressed that this is only a "promise", and a promise may be withdrawn before acceptance. Other concerns refer to the fact that a non-assertion promise can contain different clauses; therefore, the Government needs to specify how it has to be drafted. Moreover, they argue, it is not clear what guarantees are offered by the Government in terms of sanctions, for those that do not keep their "promise".

Some participants however declared that a promise of non assertion could alleviate concerns relating to royalties; some added that this is true especially if the promise is compatible with FLOSS licences.

Crit_08 How could adopting FRAND standards deliver a level playing field for open source and proprietary software solution providers?

In the responses to this question, we can observe again the division between SMEs representatives, or individuals, and proprietary software vendors.

For the first, typical FRAND licences do not include downstream licensing at the same conditions, and therefore do not allow the implementation of open source software (based on GPL licences). Hence, they do not level the playing field, because they exclude all businesses based on open source software.

For the second, FRAND levels the playing field because they allow everybody to participate in the market at reasonable conditions, and at the same time preserves the incentives of investors in technology. Many successful standards are FRAND, they argue. Mandation against FRAND reduces choices and hinders the market.

Roundtable 3

Crit_Q03 Does the policy make things easier or more difficult to break into Government IT - does it help to level the playing field?

Almost unanimously, all participants responded that this policy would make it easier to enter into Government IT, with a very little reservation regarding practical difficulties caused by increased red tape. The main reason mentioned was that the policy will level the playing field and it would allow many companies to enter the market.

Crit_Q04 How would mandating open standards in government affect your organisation?

Most participants declared this policy would have a positive impact on their organisation, by removing barriers to entering the government IT market and levelling the playing field. A minority declared that this policy would have a negative impact on organisations, because of the cost of adaptation to the new system and because they would not be able to lock the Government into products.

Crit_Q09 Do open standards that are compatible with a free or open source software licences exclude certain suppliers or products?

Much of the discussion did not focus on the question. Those contributors who remained on target responded that if exclusion is possible, this would be limited to the short term, following a period of adjustment.

Crit_Q02 and Crit_Q04 What might we be prevented from doing?

Most respondents to this question focussed on the drawbacks that this policy would have for innovation. In more detail, according to most participants, the Government would be stopped from adopting innovative solutions, because it would be bound by widely implemented open standard-based solutions. Other hurdles for the Government would be the inability to use closed source/proprietary solutions despite these being interoperable and efficient.

Crit_Q03 Will it be easier or harder to do business with us?

Respondents to this question at the roundtable discussions were almost equally divided between those that found that this policy would make it easier to do business with the Government and those that found it would make things more difficult. The reasons are the same as those which emerged in the online consultation. Doing business with the Government would be easier because of the levelling of the playing field and for the ease of communication with the Government. It would be difficult because of the upfront, increased costs and skill required, or because the respondent's business is based on systems integration.

Most of the participants of Roundtable 6 were not aware of legal or procurement barriers. However, a minority warned against both legal and procurement barriers, substantially recalling the arguments expressed in the analysis to the online consultation, above.

Roundtable 5

Crit_Q03 If the Government adopts open standards, will it make it easier or harder for you to do business with us?

A large majority of the participants to this roundtable (5) declared that it would be easier to do business with the Government. Private individuals stressed the benefits of interoperability in terms of communications with the Government, whereas SMEs focussed on the fact that they already adopt open standard solutions and they believe this would help them to enter the government market. The only negative view recalled the limitations of not being able to choose a proprietary solution.

Crit_Q04 How would mandating open standards in government IT affect your organisation?

For a large majority of participants, mandating IT standards would positively affect their organisation, for the reasons mentioned in previous answers. One dissenting voice declared that the policy would create more competition for his company. Another declared that there would be no substantial change for his business.

Crit_Q03 Do you have any examples of times when the lack of adoption of open standards has acted as a barrier to you doing business with us?

The few examples provided included the difficulty of being "forced" to use proprietary operating systems and proprietary web browsers (e.g. Microsoft). One specific example regarded the NHS, which was not able to meet a target because they were bound to an old version of a proprietary web browser.

Crit_Q02 What might adopting open standards prevent?

Most participants declared this policy would not prevent anything. Among the voices stating the contrary, the possibility to use open standards not based on royalty-free licences was mentioned. Drawbacks for innovation were also restated.

Roundtable 6

Mand_Q02 Will the open standards policy be beneficial or detrimental for innovation and competition in the UK and Europe?

Participants at this roundtable (6) were equally balanced in supporting both the beneficial or detrimental effects of this policy for UK and Europe. Most benefits and disadvantages were focussed on the impact that this policy would have on competition at European level. Benefits focussed on the restated argument of ease for enterprises to enter the European market, thanks to open standards. Difficulties were envisaged, as stated before in the consultation responses, by those developing their business on proprietary software or open standards based on royalty-bearing licences. They claim their business would struggle to compete with foreign companies, which are not bound to comply with this policy.

Mand_Q01 Is the proposed UK policy compatible with European policies, directives and regulations (existing or planned)?

Most participants stated this policy is compatible with EU legislation, regulations, and policy, and in particular with the EIF v2.0. Other participants, current government suppliers, stated this policy is not compliant with the EIF. Both arguments revolved around the definition of FRAND. For supporters of open source software the EIF leaves freedom to decide whether to implement RF standards or not. For others, the EIF v2.0 leaves the freedom to decide whether FRAND should be royalty-free or not. This means that both versions of a FRAND licence are acceptable for EU law whereas, in their view, this policy excludes royalty-bearing FRAND licences.

Int_Q03 Are there any legal or procurement barriers to mandating specific open standards in the UK Government's IT?

No legal barriers were mentioned by the participants to this roundtable (6). Some procurement barriers were mentioned, as the lack of freedom to choose the best product because it does not comply with this policy. An argument was made that interoperability can be achieved both with open and closed standards, therefore the Government has no reason to modify procurement policies to steer towards open standards.

Roundtable 7

Crit_Q02 and Crit_Q04 Do you have any examples of times when government IT systems have acted as a barrier to you working with us / How would mandating open standards for government IT affect you / What might adopting the proposed open standards policy prevent?

An example was provided of a voluntary sector organisation using open source software, but having difficulties when liaising with the Government, for which they worked. Another

example was given of a voluntary organisation in Kingston willing to recycle old computers to be given to children. The aim was to allow children to use the computers and allow the parents to connect with the Council website. There were problems of interoperability with the application Microsoft Word 2003/2007, which eventually forced the council to upgrade to new software, and in turn the people to buy new proprietary software.

Crit_Q03 If the government adopts open standards, will it make it easier or harder for you to work with us?

Some participants responded to this question that many people and government bodies do not have enough information on OSS. They are wary of open software and keep using proprietary software because it is easy. However, many SMEs and charities, which are better informed, use OSS software. Mandating open standards in government procurement would send out a strong signal, which would have a positive domino effect towards to all those using open source software.

Academic articles

Papers and links to articles were shared with Cabinet Office from several sources during the consultation period. These were all made available to Bournemouth University for consideration in the preparation of a peer reviewed academic report, commissioned by the Cabinet Office and available on the Cabinet Office website.

These included the following articles which were attached to consultation responses:

Mitchell, Iain G; Mason, Stephen (2010) 'Compatibility Of The Licensing Of Embedded Patents With Open Source Licensing Terms', International Free and Open Source Software Law Review, 3(1), pp 25 – 58: http://www.ifosslr.org/ifosslr/article/view/57

Kelly, B., Wilson, S. and Metcalfe, R., 2007. 'Openness in Higher Education: Open Source, Open Standards, Open Access' In: *Openness in Digital Publishing: Awareness, Discovery and Access* - Proceedings of the 11th International Conference on Electronic Publishing (ELPub): http://opus.bath.ac.uk/397/

Bjorn Lundell, 'e-Governance in public sector ICT procurement: what is shaping practice in Sweden?', 12 European Journal of ePractice March/April 2011 - ISSN: 1988-625X: http://www.epractice.eu/en/document/5290101

Jacques Crémer and Mark Schankerman, 'Economic Principles for Efficient Public Procurement in Information Technology', Toulouse School of Economics (IDEI & CNRS) London School of Economics and Centre for Economic Policy Research (This paper was written independently by Jacques Crémer and Mark Schankerman, with research assistantship provided by Compass Lexicon that was funded by Microsoft). http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2143096

Meetings

The Cabinet Office held a number of meetings with stakeholders. A minute was recorded for each meeting, including a summary of the arguments made and discussed. These

minutes are available for download on the Cabinet Office [website](#).

Cabinet Office attended five meetings where the proposed policy was discussed (3x SMEs, 2x Bus Org and 1x Corp). Of these, two SMEs did not contribute via another channel. The remaining SME, Corporate and Business Organisation used several of the consultation channels to put forward their views.

Arguments already expressed in other parts of this analysis have not been duplicated here, a summary of other points raised is provided.

Summary of additional points from meeting discussions

If the Government is seeking consumer choice should we should be offering a range of formats rather than mandating a single standard.	SME
Many forms of open source licenses are entirely compatible with FRAND. Where there are problems, there is some evidence that this is because some involved are deliberately setting out to make FRAND difficult to use with the licence.	SME
Government should specify functionality/outcomes and let the market decide how to deliver these.	SME
Clarity is needed on what the Government needs in terms of interoperability and what standards are in scope – there is convergence between technologies e.g. telecoms and software.	SME
Walled gardens are created through contracts in the software stack – open standards are important but the Government needs to concentrate on contracts.	SME
The Government needs to centralise procurement and work directly with suppliers, not through systems integrators.	SME
The vanilla approach is enough – we can increase our commercial power through vanilla implementation.	SME
Example: NHS Scotland Procurement for linear accelerators - tied to a closed system many years ago and no one could now compete for £25m contract. Open standards cannot solve that (2011 Scots Law Times SLT 815).	BusOrg
Education process is fundamental. Procurement officials are not necessarily technology experts.	BusOrg
The Government will be no further ahead if it uses a de facto standard in a product that supports open standards.	BusOrg
Implementing some of these standards is very complex. An open source framework would allow consortia of companies to tender.	BusOrg
There has been an upswing in ETSI to reach an agreed definition of RAND.	BusOrg
To realise the Government's objectives, there is more than just the technical	Corp

dimension. Semantic, organisational and legal interoperability layers are important too.	
Open Source can be as sticky to lock-in as proprietary software. In customisation, the Government should have a roadmap so it can maintain standardisation.	Corp
There are capability issues and concern that a catalogue of standards will become an instruction which limits choice with some focussing on what software does rather than what the problem/outcome is.	Gov
There are concerns regarding restrictions to SMEs which build on proprietary software, and the inclusion of widely used proprietary formats e.g. DVD formats and competition in standards creation.	Gov
There is nothing in the proposed policy which is incompatible with European competition law – current behaviours are potentially closer to a restrictive market.	Gov

Annex 1: Respondents list

See the Cabinet Office website for the Respondents List spreadsheet, which includes typology of respondents.

Annex 2: Codebook

Question classification

The questionnaire for the consultation consists of three chapters, each featuring a question set. They are coded as follows:

- Chapter 1: Criteria for Open Standards (Code: "Crit")
- Chapter 2: Open Standards Mandation (Code: "Mand")
- Chapter 3: International Alignment (Code: "Int")

Each question set consists of a different number of questions. They are numbered in the same order in which they are posed.

Example: Question Set 1, Question Number 1 = "Crit_Q01"

Respondent classification

Respondents to the consultation included central government departments, their agencies, non-departmental public bodies, other bodies for which they are responsible, the industry sector (SMEs and corporations), standards setting organizations, expert groups, business associations, voluntary and communities organizations and campaign groups, professionals (e.g. lawyers, IT professionals), academics, foreign observers (e.g. Dutch civil servants/professionals), and the public at large.

Most respondents provided name, email, phone, organisation. Personal details will not be included in any public document of the analysis. The name and organisation details of respondents are included in the Respondents List.

Respondents are classified and coded as follows:

1. Central government department, central government agency, non-departmental public bodies, other arm's length bodies, local authorities: "Gov"
2. Industry - corporations, multinationals : "Corp"
3. Industry - small and medium enterprises: "SME"
4. Standard setting organisations/consortia: "SSO"
5. Voluntary and community organisations (including OSS developers communities, campaign groups, political and social movements) : "VCO"
6. Association/expert group involved in social economy/philanthropy : "AssExp"

7. Business organisations, consortia, industry associations: "BusOrg"
8. Professions (IT/lawyers/economists) and professional associations/organisations: "Prof"
9. Academic/academic department (including non-UK): "Ac"
10. Foreign (non-UK) public or private entities: "Ext"
11. Individuals/response in a personal capacity/unspecified: "Pers"
12. Others (one occurrence only of a typology not corresponding to any of the above): "Other"

Question codes

Chapter 1

Crit_Q01: How does this definition of open standard compare to your view of what makes a standard 'open'?

Crit_Q02: What will the Government be inhibited from doing if this definition of open standards is adopted for software interoperability, data and document formats across central government?

Crit_Q03: For businesses attempting to break into the government IT market, would this policy make things easier or more difficult – does it help to level the playing field?

Crit_Q04: How would mandating open standards for use in government IT for software interoperability, data and document formats affect your organisation?

Crit_Q05: What effect would this policy have on improving value for money in the provision of government services?

Crit_Q06: Would this policy support innovation, competition and choice in delivery of government services?

Crit_Q07: In what way do software copyright licences and standards patent licences interact to support or prevent interoperability?

Crit_Q08: How could adopting (Fair) Reasonable and Non Discriminatory ((F)RAND) standards deliver a level playing field for open source and proprietary software solution providers?

Crit_Q09: Does selecting open standards which are compatible with a free or open source software licence exclude certain suppliers or products?

Crit_Q10: Does a promise of non-assertion of a patent when used in open source

software alleviate concerns relating to patents and royalty charging?

Crit_Q11: Should a different rationale be applied when purchasing off-the-shelf software solutions than is applied when purchasing bespoke solutions?

Crit_Q12: In terms of standards for software interoperability, data and document formats, is there a need for the Government to engage with or provide funding for specific committees/bodies?

Crit_Q13: Are there any are other policy options which would meet the described outcomes more effectively?

Chapter 2

Mand_Q01: What Criteria should the Government consider when deciding whether it is appropriate to mandate particular standards?

Mand_Q02: What effect would mandating particular open standards have on improving value for money in the provision of government services?

Mand_Q03: Are there any legal or procurement barriers to mandating specific open standards in the UK Government's IT?

Mand_Q04: Could mandation of competing open standards for the same function deliver interoperable software and information at reduced cost?

Mand_Q05: Could mandation of open standards promote anti-competitive behaviour in public procurement?

Mand_Q06: How would mandation of specific open standards for government IT software interoperability, data and document formats affect your organisation/business?

Mand_Q07: How should the Government best deal with the issue of change relating to legacy systems or incompatible updates to existing open standards?

Mand_Q08: What should trigger the review of an open standard that has already been mandated?

Mand_Q09: How should the Government strike a balance between nurturing innovation and conforming to standards?

Mand_Q10: How should the Government confirm that a solution claiming conformity to a standard is interoperable in practice?

Mand_Q11:   Are there any are other policy options which would meet the objective more effectively?

Int_Q01:   Is the proposed UK policy compatible with European policies, directives and regulations (existing or planned) such as the European Interoperability Framework version 2.0 and the reform proposal for European Standardisation?

Int_Q02:   Will the open standards policy be beneficial or detrimental for innovation and competition in the UK and Europe?

Int_Q03:   Are there any are other policy options which would meet the objectives described in this consultation paper more effectively?

Answer codes

Question set 1

Crit_Q01

0.   I don't know/no opinion/blank
1.   In full (the definition of Open Standard corresponds in full to mine)
2.   Almost (positive/suggest modifications)
3.   Not quite (negative/suggest modifications)
4.   Not at all
99.   Not applicable/relevant

Crit_Q02

0.   I don't know/no opinion/blank
1.   More difficult to use non-open standard software when this is still necessary
2.   More difficult to have a wide range of suppliers/to choose the best supplier
3.   More difficult to use upcoming standards (or open source software) due to a lack of sufficient evidence of implementation
4.   More difficult to adopt open source solutions or to escape vendor lock-in (because of exceptions which allow use of FRAND)
5.   More difficult to adopt Open Source Solutions
6.   Nothing (or nothing but bad practices)
7.   Resist pressure from proprietary vendors to implement their own standards (e.g. OOXML). Risk of vendor lock-in
8.   Nothing, because of the text: "unless there are clear business reasons why this is inappropriate" (negative)
9.   Nothing, because of the text: "unless there are clear business reasons why this is inappropriate" (positive)

10. Nothing, because of the text: "unless there are clear business reasons why this is inappropriate" (unsure)
11. Interoperability problems with bodies other than central Govt (the definition is too narrow)
99. Not applicable/relevant

Crit_Q03

0. I don't know/no opinion/blank
1. Easier
2. Potentially easier, subject to conditions
3. More difficult
4. No difference
99. Not applicable/relevant

Crit_Q04

0. I don't know/no opinion/blank
1. My organisation would benefit from it
2. It would not be sufficient for a benefit, alone
3. It would have a negative impact on my organisation
4. It would not affect my organisation
5. It depends on how it is implemented
99. Not applicable/relevant

Crit_Q05

0. I don't know/no opinion/blank
1. It would improve value for money (it will save public money)
2. Negative effects in the short run, but positive effects in the long run
3. It would have negative effects
4. It would have little impact
5. It would have different impacts, depending on the area/standard
99. Not applicable/relevant

Crit_Q06

0. I don't know/no opinion/blank
1. Yes
2. Yes, under certain conditions/but not on its own
3. No
99. Not applicable/relevant

Crit_Q07

0. I don't know/no opinion/blank
1. Licences/patents support interoperability/Positive on licences/patents
2. Licences/patents prevent interoperability/Negative on licences/patents
3. They do not have any impact on interoperability/it depends on how they are applied
99. Not applicable/relevant

Crit_Q08

0. I don't know/no opinion/blank
1. FRAND will level the playing field (does not specify how/not clear how)
2. FRAND helps, but Royalty-free is better
3. With a better definition of FRAND, accepted by most Standard Setting Organizations
4. FRAND do not level the playing field. Royalty-free is the way forward/It will level the playing field only if FRAND means royalty-free
99. Not applicable/relevant

Crit_Q09

0. I don't know/no opinion/blank
1. Yes, it would exclude some suppliers, if they only rely on incompatible solutions
2. No, it will not
99. Not applicable/relevant

Crit_Q10

0. I don't know/no opinion/blank
1. Yes, it helps
2. No it does not help/it is not sufficient/only if binding/generally suspicious
99. Not applicable/relevant

Crit_Q11

0. I don't know/no opinion/blank
1. Yes (different rationale for off-the shelf and bespoke SW))
2. No
99. Not applicable/relevant

Crit_Q12

0. I don't know/no opinion/blank
1. Yes (funding for committees/bodies)
2. Only for a short period
3. No
99. Not applicable/relevant

Crit_Q13

List of policy options

Question set 2

Mand_Q01

1. Business need attribute
2. Standard attribute
3. Market attribute
4. Business and standard attribute

5. Standard and market attribute
6. Business and market attribute
7. No particular standard should be mandated

Mand_Q02

0. I don't know/no opinion/blank
1. It would improve value for money (it will save public money)
2. Negative effects in the short run, but positive effects in the long run
3. It would have negative effects
4. It would have little impact
5. That depends on the standard
99. Not applicable/relevant

Mand_Q03

0. I don't know/no opinion/blank
1. There are no barriers
2. Pressure from the current suppliers
3. Need for cultural change in procurement/danger if inertia of procurement professionals/need for information and guidance
4. Assertion of IP rights
5. Interoperability with current software
6. EU legislation/regulations/International treaties
7. Accusation of anti-competitiveness
8. Additional costs
99. Not applicable/relevant

Mand_Q04

0. I don't know/no opinion/blank
1. Yes/possibly
2. No/unlikely
99. Not applicable/relevant

Mand Q_05

0. I don't know/no opinion/blank
1. Yes/possibly
2. No/unlikely
3. Depends on the standard
99. Not applicable/relevant

Mand_Q06

0. I don't know/no opinion/blank
1. My organisation would benefit from it
2. It would not be sufficient for a benefit, alone/benefit in the long run/benefit subject to conditions
3. It would have a negative impact on my organisation
4. It would not affect my organisation
5. It depends on how it is implemented
99. Not applicable/relevant

Mand_Q07

    0.   I don't know/no opinion/blank
    1.   Delegate the issue to users/vendors
    2.   Gradually/initially allowing coexistence with previous formats/case by case/leave in place legacy systems and provide an interface with new systems
    3.   Set strict time-scale for compliance/generally strict approach
    4.   Educating users
    5.   Providing incentives for vendors
    99.   Not applicable/relevant

Mand_Q08

    0.   I don't know/no opinion/blank
    1.   Changes in available technology/changes in licensing conditions/appearance of more efficient standards
    2.   When the standard no longer meets the use case
    3.   There should be a periodical review/Standard Boards
    4.   Complaints/concerns from users/vendors/flaws found on the standard
    99.   Not applicable/relevant

Mand_Q09

    0.   I don't know/no opinion/blank
    1.   There is no tension between innovation and standards/standards help innovation/ Govt should take care of standard. Innovation will follow/it is not the Govt role to nurture innovation
    2.   Govt should use up-to-date standards/participating in standard bodies which would help driving innovation/monitoring standards
    3.   By using really open standard/by implementing this policy strictly
    4.   By adopting emerging standards
    99.   Not applicable/relevant

Mand_Q10

    0.   I don't know/no opinion/blank
    1.   Testing/investigating similar solutions (or other action by the Govt)
    2.   Proof of concept/evidence of compliance (or other action by the vendor)
    3.   Testing by third parties (Standard setting organisations/independent agencies)
    4.   Call on public feedback/complaint by users
    99.   Not applicable/relevant

Mand_Q11

List of policy options

Question set 3

Int_Q01

    0.   I don't know/no opinion/blank
    1.   Yes (the UK policy is compatible with EU policy/legislation/regulations)
    2.   No

99.   Not applicable/relevant

Int_Q02

0.   I don't know/no opinion/blank
1.   Beneficial
2.   Beneficial under conditions/depends on how it is implemented
3.   Detrimental
99.   Not applicable/relevant

Int_Q03

List of policy options

Annex 3: Methodology

The research method

A relevant number of responses were received for this open consultation of the Cabinet Office. More than 480 submissions were received (three responses were disregarded as spam received through the online consultation site). A need was recognised not only to identify but also to quantify prevailing themes among responses as well as to identify patterns and links between standpoints and typologies of respondents. Moreover, the analysis attempted to capture any novel or unique viewpoints, as these are just as important for consideration in the policy formulation.

With a relatively large sample, this is best done with quantitative research methods or mixed (quantitative and qualitative) research methods. A questionnaire that provides multiple choice answers is the best tool to provide statistical measurement of the sample. As an alternative, a mixed questionnaire (with mostly closed questions followed by one or few open questions) would also be an effective tool. However, guidance on government consultations states that "analysing consultation responses is primarily a qualitative rather than a quantitative exercise". The questionnaire provided by the Cabinet Office was therefore entirely open, with a rather large question set (27 questions), which attracted a rather large number of responses. Quantitative research methods alone, therefore, could not be applied[7].

Pure qualitative methods, involving an in-depth text analysis or a small sample of respondents, which are therefore considered each as a case study, were not considered appropriate, both for the difficulty of execution and for the target of the analysis (e.g. identify and *quantify* arguments trends among respondents).

A combined approach between ground theory[8] and quantitative research methods was therefore selected as the best methodology[9] to deliver significant findings from the available material.

A partial normalisation of the data provided by the Cabinet Office (the totality of the responses and contributions) was therefore undertaken. As mentioned, the sample was extremely heterogeneous, ranging from academic papers to short email consisting of few

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[7] For the limits of quantitative research, particularly pertinent in our case, see Robson, C. 2003. *Real World Research: A Resource for Social Scientists and Practitioner-Researchers.* Oxford: Blackwell Publishers Ltd, at 32.

[8] Ground theory method is a research method which operates in a reverse fashion from traditional social science research. Instead of beginning with a hypothesis and then collecting data to confirm or deny it, in ground theory we start from data collection, the analysis of which leads to a somewhat reverse engineered hypothesis. Glaser, B., and A. Strauss. 1967. *The Discovery of Grounded Theory: Strategies for Qualitative Research.* Chicago: Aldine Publishing Company.

[9] This is a relatively novel approach to quantitative analysis. See Glaser, B. G. 1994. Theoretical Elaboration of Quantitative Data. In Glaser, B. G. *More Grounded Theory Methodology: A Reader.* Mill Valley (CA): Sociology Press: 197–232; Field, A. 2005. *Discovering Statistics Using SPSS.* London: Sage Publications Ltd

lines, passing by an extremely large set of open answers. Data normalisation was therefore very difficult, and not exempt from imperfection.

However, this type of approach also provided interesting aspects. While in classical quantitative research methods the multiple choice list of answers is provided by the researchers, in our case the multiple choice list of answers was provided by the respondents. The classical approach, in this sense, can leave out some of the arguments, because the effectiveness of the research depends on the thoroughness of the background study performed by the researchers (who attempt to "foresee" the possible answer of the sample). In our case, with an approach close to that of ground theory research methods, we identified the closed list of answers to each question through a direct analysis of the data. The most asserted argument (supported by at least three respondents) were isolated and identified.

However, also in our case this exercise was leaving out a number of isolated comments or remarks that were nonetheless interesting to mention. We therefore provided at the end of each analysis a respondents' grid including all additional comments[10] that were retrieved during the text analysis, in form of a very short summary. These comments represented an addition to a particular standpoint of the respondent, which was already computed in the statistical analysis. The mention of these additional comments was envisaged only to avoid any loss of information.

> The above indicates that this was not a quantitative analysis of data in the classical sense, and therefore no statistically reliable results are provided. The present analysis is mainly qualitative. It was somewhat "transformed" in quantitative analysis, with the help of ground theory methods, because this was the most appropriate tool, in the view of the researchers, to deliver reliable findings from the data available.

Definition of the typologies

A distinction among industry with different lines of businesses (Software, Hardware, Telecom, etc.) was considered, but eventually excluded. The reason is that with the current technological progress, (e.g. in the field of mobile telecommunications) and with the emergence of new products/services (e.g. cloud computing) the difference between software and hardware, and between software and Telecom is becoming more and more nuanced. Moreover, a few companies have mixed lines of business, either directly or indirectly, through their controlled/dependant companies. This would have made the definition of typologies excessively difficult. The commercial interests of the several companies involved therefore may unexpectedly diverge or coincide. In fact, this was demonstrated during the analysis by the different stances adopted by similar businesses.

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[10]   Many additional comments came up again and again in response to several questions. Repetition has been kept to a minimum. In this case, the number of respondents supporting the comment is not relevant, as they are normally very few (one or two). The most supported arguments (three or more supporters) have been computed among the coded answers.

For the definition of SME, we have used the European criteria.[11] However, it was not always possible to identify the number of employees or the turnover of a business. In that case the information provided by the same company on their official website was utilised.

For standard setting organisation, we have considered both formal organisation, established with the main purpose of setting standards, and voluntary industry organization, which have within their mission, but not exclusively, standards setting activity. The latter were classified as "SSO" and not as "BusOrg", because the function of setting standards, in a open standards consultation, seemed more interesting, in the view of the targets pursued.

Finally, voluntary and community organisations included also OSS developers community and social and political movements supporting open source software, because their idealistic commitment to open source software was considered their most relevant feature.

Use of typologies

Typologies have been introduced in the analysis in order to identify patterns in the responses. For the research target, it was important to determine whether to a determined standpoint consistently corresponded to a particular typology of respondent. This was very useful to understand thematic trends within the consultation.

Again, typologies were not provided by the respondents because the questionnaire of the Cabinet Office did not require the respondent to specify the typology of their organization. A piece of inference work was therefore undertaken by the researches, with the help of internet research and company listings. This exercise, it needs to be stated, is not exempt from limitations.

In the "Additional Argument" sections, typologies are indicated only to better understand the argument included in the table. That is why sometimes the indication of the line of business of the respondent (e.g. SW= software vendor, TLC = Telecom, etc.) is provided. This was however not always necessary. These distinctions are not included in the statistical analysis, where more objective criteria are needed for the definition of the categories (see above).

Repetitions in responses and affiliation of the respondents: limits of the analysis

At the outset, it needs to be stated that a few organisations participated in the consultation through different channels (online consultation, email, roundtables) but with different representatives, who gave sometimes slightly different responses to the questions of the survey. Each of these responses has been computed as a separate response.

Moreover, we need to caution that those cited as personal opinion should not necessarily be considered as layman opinions. Many individuals are part or CEO of Expert

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[11] Definition of SME as in COMMISSION RECOMMENDATION of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises, Official Journal of the European Union, L 124/36, 20.5.2003, available at http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2003:124:0036:0041:EN:PDF

Associations or Standard setting organisations, but they respond in a personal capacity (self-declared).

Also regarding the data collected by the online consultation, some warnings have to be made. Many participants to the online consultation copied and pasted responses from other participants. They were computed as independent answers.

Moreover, the questionnaire of the Cabinet Office did not require each respondent to specify if they were submitting their contribution in a personal capacity or as representatives of their organisation. It only required them to state their affiliation. As a result, most respondents (with few exceptions) did not declare whether they were responding in a personal capacity or not. Where possible, an inference exercise was undertaken by the researchers. Respondents who declared themselves a CEO (or equivalent) of the organisation were considered a representative of the organisation, unless otherwise stated. Respondents who declared themselves employees or executives were considered to be private individuals, unless otherwise stated.

However, since the majority of respondents did not declare their position within their organisation, they have been computed as representatives of their organisation (this was normally the case of small SMEs, for which the degree of representation seemed to be somewhat of a good guess).

Participants from an independent survey (held by SquareCows) were also computed in the analysis. The reason is that this survey posed (among others) identical questions to those proposed by the Cabinet Office. The supplementary questions were obviously not computed in the analysis. The sample of participants to this survey seems as heterogeneous as the sample responding to the online consultation of the Cabinet Office. Moreover, it did not indicate any distorting influence, as for example a suggestion of answers from the community (Squarecows is an open source community). The data was therefore considered sufficiently reliable to be included in the analysis.

In addition, in the course of this consultation, the Cabinet Office held seven roundtables, hosting the same categories of participants that we have seen in the online consultation (typologies). In many case, the same organisation responded to the online questionnaire and participated in the roundtable. In some cases, the same representative of a given organisation, who had already responded to the online survey, participated to the roundtable. In few cases, the same organisation or even representative also sent an unstructured contribution via email. The opinions of these participants were cited, where relevant, at every occurrence, but they were computed only once in the analysis.
The possibility of implementing a weighting system, in order to give different weight to responses providing evidence or subjected to peer review was considered by the research team. This possibility was eventually discarded because of the impossibility to identify an objectively measurable weighting method. Each answer of each respondent therefore is computed as one.

Finally, the Cabinet Office held a number of meetings with a number of stakeholders. A

minute was created for each meeting, including a summary of the discussed arguments.