Dual Standards – More Choice, or Less?

A White Paper by OpenForum Europe on the question of whether two or more competing standards in one domain can improve competitive choice, or in fact be detrimental to the user?

May 2007

OpenForum Europe supports open, competitive choice for IT users. It is a strong supporter of Open Standards, and recognition of new business opportunities offered by the OSS/Free Software model. Not-for-profit and independent, it draws its membership from both the user and supply communities, and holds partnerships with many national and other leading organisations across Europe, and increasingly globally. OFE is a member of the ODF Alliance.

OpenForum Europe acknowledges all the input received from its members and partners in the compilation of this document. However, OpenForum Europe does not seek to represent any specific community nor present its opinions as being unanimously supported by its full membership. References given are fully attributed and every effort made to ensure they have been taken in true context.

www.openforumeurope.org Email: info@openforumeurope.org

Number One, Tanner Street,
London SE1 3LE
UK

Avenue de Broqueville, 158, Bte 3
1200 Woluwe St. Lambert
Brussels
Belgium

1. Executive Summary

The benefit of a common standard is already recognised – everyone sees the benefits of a common voltage mains power electrical system, a single gauge for rail track, common screw sizes, plumbing fittings etc. But what happens when suddenly we are offered two competitive standards? Is this good news for the consumer – after all is it not more choice? Maybe not.

Open, competitive choice is a phrase unlikely to be opposed – unlike its alternative – closed, anti-competitive, and restrictive practice. Open Standards provide a key process for the ensuring that the former is achieved , and the alternative avoided. Nowhere is this process brought under closer attention than when a key market is 'offered' two seemingly equivalent open standards. Is the market desire for competition and choice enhanced by this, or is it a 'poison chalice' actually diminishing choice and competition?

This White Paper explores experience and user requirements, identifying scenarios where in the past competing standards were not important, but overall when a strong 'network effect' is apparent it is easy to conclude that it is detrimental for both suppliers and users, and will be actively resisted. Standards in the area of Interoperability, often called interface standards, clearly fall into this case. Such dual Interoperability standards increase cost and complexity for the end user, and can be shown to fragment the market for suppliers, as well as depress the market for innovative services in adjacent and compatible markets. Contrary to first appearance such competition actually reduces end user choice in the form of applications build on a common standard, and increases the probability of lock-in to proprietary solutions.

What is surprising is that a clear unified definition of an Open Standard is not recognised and in common use. Absence has resulted in ineffective debate within the standards bodies, notably ISO, and allowed differing proprietary and commercial considerations to be exercised. The best known definition is that defined by the EC within its European Interoperability Framework, but in some quarters this is hotly contested. Whilst actively supporting this definition in the past, OpenForum Europe within this White Paper offers an updated definition.

But the key components are largely uncontested,

- Openness and independence of it maintenance process
- Retains no proprietary dependencies or extensions
- Openly available
- Does not discriminate against any user or business model
- Multiple implementations

The specific example of Open Document Exchange Formats has been used in this White Paper, both because of the timeliness of the debate, and also because of the level of interest and importance in the outcome. This is no longer an academic debate but one which, as many national governments have already realised, is of critical importance to the national inheritance, legal processes, and business probity. Government and Industry Bodies have an important proactive role to play. Transparency of process, and clarity in terms of measurement is currently deficient.

Overall, the following key conclusions have been made:

1. *The global economy and continuing impact of the Internet and OSS, will ensure the search for open, competitive solutions continues, and increase the pressure on proprietary solution suppliers to maintain or develop open interfaces and remove other aspects of lock-in. Users equally need to recognise the hidden costs of lock-in and maintain the pressure on their prospective and existing suppliers.*

2. *Interoperability of solutions and between individuals is the key to successful open competitive choice. Open Standards are the basis of that interoperability.*

3. *Clear definition of an Open Standard is essential to ensure full interoperability, and to avoid costly lock-in.*

4. *Multiple Open standards in the area of Interoperability are unwelcome, costly and impractical for both users and suppliers, and and will be rejected by the market. Users will get no benefit, suppliers only if they have a commercial proposition to support.*

5. *ODF is already established and approved as a ISO standard, and has both been incorporated into multiple supplier applications, and extensively endorsed worldwide by both government and private sector user organisations. Microsoft and Ecma have not established any core functionality based arguments why OOXML alone is uniquely able to meet specific business needs of legacy preservation. If the only valid reason for the introduction of OOXML is the preservation of proprietary market share, then OOXML simply cannot be justified and approved by ISO.*

6. *ISO needs to rapidly respond to the criticisms made, and if it is to survive as* ***the*** *global champion of valued, independent and truly open standards then it must reassess the transparency of its processes, its relationship with National Bodies, and other standards bodies. In particular it must work with Industry, User bodies and Government to confirm a single, widely accepted definition of an Open Standard.*

7. *Government and the EC has a particularly important role in the industry and in the development of new markets. Direct market intervention is generally not welcome, but in the case of standards development, the EC has a positive role alongside ISO, industry, and user representatives. In the case of Open Document Exchange Formats then the EC should positively respond to the explicit concerns of national governments over two standards, and act decisively in taking a lead in their avoidance.*

2. Open, Competitive Choice

"Open, Competitive Choice (in the IT market) is the mission statement for OpenForum Europe. Most would agree that this a highly laudable statement, but is it realistic, viable or even necessary? The obvious challenge is – why not? Is there something contained here that is damaging, threatening or overtly aggressive? By the response that it generates in certain areas you would certainly think so. But interestingly few would want to be associated with the **reverse** image of that statement – **closed, anti-competitive, and restrictive practice**. So we need to start by looking beyond the rhetoric and examining what this statement delivers in practice and in reality.

Openness is another term widely used, and whilst many have attempted, it is not easy to be define it precisely, or measure it. In many ways it is a feeling of well-being, a nice 'fluffy cloud'. But again the reverse – closed, and 'lock-in' becomes much more meaningful, and **can** be measured. Lock-In may be reached from many different routes. It may well be the use of proprietary formats, it may be the hidden use of proprietary extensions to open standards. It may be dependencies on other products from within the supplier's solutions, or limited choice of operating system, database.....etc. It may even be control over commercial terms or availability of support skills. Each can cause the same result. With the active support and participation of industry and the community OpenForum Europe is introducing Certified Open®, a new accreditation scheme to assist users identify such issues of lock-in.

Ten years ago the industry debated with equal passion 'Open Systems', and whilst there were many differences in the technological focus and solution, the core end user benefits unfortunately remain largely identical – choice, competition and business growth. Ten years ago, however, we lived in a very different IT world – the focus then was on operating systems, and communications protocols. Even then there was recognition of the fundamental importance of standards, and a slow recognition that the dominance of *de jure* standards was being overtaken by the impact of *de facto* standards, due simply to the rate of technology churn – but little thought to how those *de facto* standards should be managed and maintained.

Today we explicitly recognise the impact of a global economy, where competition is seen as a double-edged sword. Certainly it opens up new markets and removes many barriers to market entry, but also for existing market leaders it encourages new competitors, potentially able to either compete head-on on the basis of price, quality or service, or develop new innovative services in adjacent and compatible areas. Nowhere is this more true than the ICT market. To quote from Thomas L. Friedman in his book "The World is Flat[1] "....you had better be good at the touchy-feely service stuff, because anything that can be digitised can be outsourced to either the smartest or the cheapest producer, or both.". The potentially previously protected world of the market leader is under attack, and whereas proprietary lock-in factors could easily be implemented in the past, these are now under direct attack, and short sighted.

Two major market 'discontinuities' have done much to deliver the coup de grace to this closed IT world. Firstly the Internet. Quite simply nobody can argue the innovative influence this has had to both IT users and suppliers. Based on a common, non-commercial set of standards, we have seen a massive change in acceptance, accessibility, and impact in the use of IT. Completely new markets have been created, price-value equations rewritten, and expectations raised. There is little popular understanding of exactly how the Internet works technically, but it does, and people can build new businesses on top without recourse to detailed (and potentially) expensive proprietary skills or products.

Secondly the advent of what may be called either Free Software or Open Source Software (sometimes abbreviated to FLOSS – Free, Libre, Open Source Software). For the purposes of this White Paper we will not go into the differences, but readers will understand the essence of this, determined both by a definition of freedom of use and openness to the source created by the licence, as well as the community method in which they are developed, maintained and enhanced. In the report[2] " Economic Impact of FLOSS on innovation and competitiveness of the EU ICT Sector" written by the UN University – MERIT, Maarstricht, for the

1 The World is Flat, Thomas L. Friedman, page 14 IBSN-13:978_0_374_29288-1

2 http://flossimpact.eu/

European Commission, both the positive contribution to the European ICT sector and its size were confirmed. Quoting selectively from the summary (but in context),

- "Defined broadly, FLOSS-related services could reach a 32% share of all IT services by 2010, and the FLOSS-related share of the economy could reach 4% of European GDP by 2010",
- "Firms have already invested an estimated Euro 1.2 Billion in developing FLOSS software that is made freely available. Such firms represent in total at least 565 000 jobs and Euro 263 Billion in annual revenue",
- "Increased FLOSS use may provide a way for Europe to compensate for a low GDP share of ICT investment relative to the US"
- "By providing a skills development environment valued by employers and retaining a greater share of value addition locally, FLOSS can encourage the creation of SMEs and jobs"

Both the Internet and OSS are intrinsically global, both use ICT in an entirely open manner as an enabler, both depend on standards to ensure interoperability, and both are permanent fixtures in the economy.

Fortunately today, there is a much greater acceptance that the role of ICT is to deliver benefit to the end user, rather than just for the supplier, and there is now a natural focus to describe the benefits in user terms. So for "open, competitive choice" read **"**greater **innovation", "**improved **service delivery" and "**lower **cost".**

Innovation As we have already seen, an open market allows new market entrants, able to quickly deploy new innovative products and advances into markets, without being held back by costly barriers raised simply to protect existing incumbents. The issue is not about stealing or unfairly building on existing intellectual property, but one of being able to market without fear, and able to exploit genuinely new opportunity. In terms of example again look at the impact of the Internet in terms of information, news, publishing and advertising. The whole newspaper industry has been turned upside down by the advent of the Internet. At the launch of FT.com, the then editor openly declared that he had no idea how it was going to be profitable, but he knew they had to do it.

Service Delivery This is not just a by-product of innovation or new technology, or even potentially lower costs, although each may well be a factor. For example,

- In Government we see where OSS, delivered on low cost terminals, has enabled completely new community based models of service to both the general public and local businesses.
- In Finance, the advent of on line banking via the internet from home or office has revolutionalised the whole banking system, both in the branch, and in sales and marketing of value add services. Instead of the banking process being the business, whilst still core, now it is the enabler to a variety of enhanced offerings.
- In Retail again the Internet has allowed a major growth in on line shopping. These opportunities clearly meet the need, based on the exponential take off, but come from the whole integration of solutions – the low cost end user terminals and solutions, the internet as a 'carrier', the fully integrated back end server systems. Individually all are possible in a proprietary, single supplier solution, but together it is only from having an open based solution that permits the business model to work.

Cost Everyone will understand the simple mathematics of business in the market. More competition = more choice = lower prices. It's a fact of life, and merely reflects the reality of supply and demand. The whole OSS model clearly gives potential cost benefit in the area of software licenses, and research confirms probably so in terms of support and maintenance. Yet it is far from simple in practice.

The Total Cost of Ownership model (TCO) recognises that to gain a real comparison of cost it is necessary to compare **all** costs, internal and external – not just the purchase costs of hardware, software services, but also the ongoing costs of maintenance, support, training. Unfortunately this also allows some selective use of TCO, and is well used by analysts and competitive suppliers to illustrate particular outcomes of their desiring, ie the devil is in the detail! Typically a TCO model will take a 5 year view of costs to give a true comparison of ongoing costs, as well as the one off purchase costs. But almost invariably it ignores the **exit cost** from a particular solution. The need to substitute product elements or an entire solution is not only an inevitability, based on either, at one extreme just predictable product upgrades (

eg Windows XP to Vista), and at the other extreme a completely new innovative end user solution (on line banking). Exit costs are not 'just someone else's problem'. So 'lock-in' becomes a fundamental part of TCO. The avoidance of lock-in and maintenance of open interfaces becomes crucial. Yet it is not widely understood at even the most senior CIO level - "we know that we have tied ourselves to a sole supplier, but have done so in order to obtain better TCO than we could manage otherwise ".

It is unlikely that in other more regulated markets, such as Finance with Sarbanes Oxley, that such complacency would be tolerated at Board level. But undeniably cost will be a major factor in any decision, and choice of solution will significantly affect that decision.

Conclusion 1. *The global economy and continuing impact of the Internet and OSS, will ensure the search for open, competitive solutions continues, and increase the pressure on proprietary solution suppliers to maintain or develop open interfaces and remove other aspects of lock-in. Users equally need to recognise the hidden costs of lock-in and maintain the pressure on their prospective and existing suppliers.*

3. Interoperability

Whilst lock-in can occur in many areas, as described above, the whole area of interoperability is crucial in the maintenance of an open environment. The IDA programme (now IDABC) of the EC published in 2005 the European Interoperability Framework for eGovernment Services[3], which has drawn out some key conclusions, but also some vital pointers to success. We selectively quote, " Interoperability is not simply a technical issue…… it goes beyond this to include the sharing of information…. and the reorganisation of administrative processes to support the seamless delivery….". It does not stop at national or administrative boundaries, linking
together organisations, administrations, enterprises or citizens. To be effective it has to cover the three aspects of:
Technical interoperability – definition of open interfaces, protocols etc
Semantic interoperability – meaning of exchanged information
Organisational interoperability – aligning business processes, information architectures

A good analysis that recognises the role of the individual as well as the process and infrastructure.
Technical aspects of interoperability are undoubtedly essential, but as the IDA document points out, they are not sufficient to achieve the interoperability which users are increasingly demanding in an increasingly knowledge dependent society. Given the rapid advance of technology and users' expectations, it is essential that policy makers avoid defining interoperability solely in technical terms.

Ultimately, interoperability should be defined from the user's perspective. "Interoperability" is the fulfillment of users' expectations to exchange and use information among various devices and software products from multiple vendors or service. Technical barriers to interoperability should only be those resulting from limitations in technology or by legal constraint. They should not be intentionally introduced or sustained by vendors or service providers and should not appear as intentional barriers to technical interoperability for the purpose of promoting market advantage for a single vendor.

It is therefore hardly surprising that debate around the definition and use of Open Standards are at their most vigorous when conducted in the area of interoperability. Equally whether such standards used for interoperability should be a profit generator in their own right, or be a basic right of 'free passage' between systems? If we are to see the benefits from open competitive choice, ie innovation, service delivery and cost then this really is self apparent. An Open Standard has to support all business models and not restrict the most disadvantaged. Patents have no part in interoperability, nor has control by individual companies. An Open Standard becomes the single most important enabler in the area of technical interoperability.

The Internet again illustrates the success possible by adopting an open stance to standards. The W3C Royalty free licensing policy has been fundamental to success, and arguably without it the Internet would have been quickly limited by patent claims from holders, seeking to gain from its success.

3 http://europa.eu.int/idabc/en/document/3761

Business success and commercial gain comes from implementation of products or services utilising the Internet, and where functionality of product and innovation of solution are the recognised value differentiators. There is absolutely no reason why this same principle is not adopted on a wider basis.

Conclusion 2. *Interoperability of solutions and between individuals is the key to successful open competitive choice. Open Standards are the basis of that interoperability.*

4. Open Standards

Now that we have identified the importance of Open Standards in the delivery of Interoperability, and as a resulting key factor in delivering open, competitive choice, we need to be more precise in its understanding and definition. Is it possible for multiple standards to coexist in the same domain?

Certainly in the context of the Open Document Exchange Formats, Microsoft would seem to believe so, reported as criticising IBM, one of the supporters of ODF. "The difference in view is that [IBM] are espousing 'one standard fits all', which is hard for us. IBM seems keen for ODF to be the only standard for everyone. The issue is about choice — there's room in the world for more than one open standard. And it's all XML — technically speaking, we speak the same language." [4]

A few points of clarification are necessary. Firstly of course XML is used in many different domains, not just document formats, the very fact that we are talking about a standard for ODEF confirms this point. So the real point is about one standard fitting all, and that to deny the opportunity would somehow limit choice. So the premise here seems to be that multiple standards are all about encouraging choice.

The alternative view is diametrically opposite to this. Here the premise is that choice is made easier by conformance to a single standard making it substantially easier and cheaper to develop a competitive product built on that single, common standard. The competitive choice results from multiple implementations, each adding value in terms of diverse functionality, and allowing users to openly base their purchasing judgement on value and conformance to need.

So the issue for analysis is who is right, where does competitive benefit come from? For both the supplier and user!

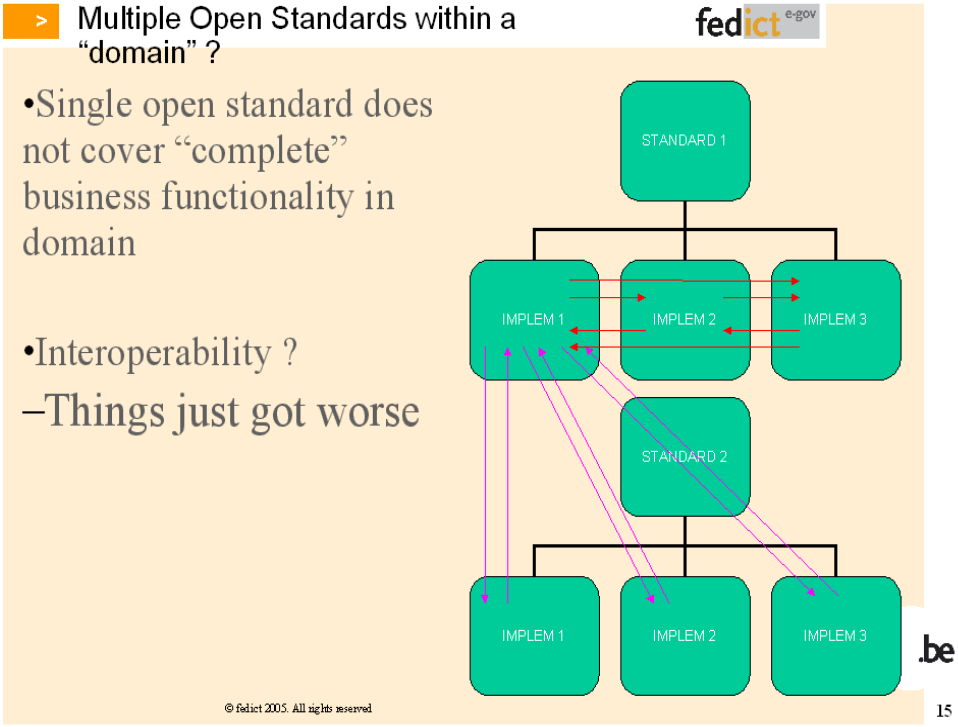
Standards exist all around us – we drive on the same side of the road (at least in the same country!), we run our electrical devices on the same mains supply (but still insist of having different plug adaptors), screw sizes, plumbing fittings,..... In Rob Weir's blog[5] he lists a number of examples of both single and multiple standards, and how some have unified over time and as a result of market pressure. Rob Weir emphasises what is called the network effect to identify reasons why multiple standards can not work in an environment which essentially calls for interdependence of multiple users – buyers or sellers. Multiple standards only flourish where the network effect is weak or non existent, and conversely "a single standard in a domain naturally results when there are strong direct or indirect network effects".Certainly standards in Interoperability, especially ones supporting document exchange, would clearly qualify for high network effect, and empirically we can over time observe the truth in his observation.

Later in this White Paper we analyse the impact on the current debate between ISO 26300 (OASIS ODF) and MS OOXML (Ecma 376), but it is pertinent to note at this point that at a recent workshop[6] run by the IDABC unit of the EC in collaboration with the German Presidency that national government representatives voted top of their concerns the "general dissatisfaction with the prospect of having competing standards" and the need that "Administrations should be able to standardise (internally)on a minimal set of formats". Why?

A series of speakers both from industry and governments presented their views, experiences and conclusions.

4 http://news.zdnet.co.uk/software/0,1000000121,39287024,00.htm
5 http://www.robweir.com/blog/2007/03/case-for-single-document-format-part-i.html
6 http://ec.europa.eu/idabc/en/document/6474

Of particular note was the presentation[7] from Peter Strickx, CTO at FEDICT of Belgium, who illustrated in the following diagram, the unacceptable increased cost and complexity imposed on a user IT department by such dual standards.



Recognising the costs of interoperability between systems needing now to support two standards, few users would willingly choose to follow this route unless a single standard does not cover the full business functionality required in a domain. The validity of this in the case of ISO 26300 and Ecma 376 is evaluated later.

But what about the suppliers of products and solutions in the same domain? How does it affect them? Well firstly all the issues of complexity and cost of testing interworking are equally valid. Can a supplier afford to support two standards? Are there ways of linking the two standards through filters or translators? Why split the market potential unnecessarily?

Again Peter Strickx drew on the example of the GSM market, and the positive business impact of driving GSM as a single standard in the European mobile phone market, compared to the negative consequences of the multiple standards adopted in the US. In the US GSM competed alongside CDMA and TDMA. Not only did this slow the market take up of mobile phones in the US, but divided competition. By Q2 2006 GSM accounted for 82% of the global mobile market[8]. There can be little debate that this standard has stimulated significant competition and innovation in this market.

7 http://ec.europa.eu/idabc/servlets/Doc?id=27858
8 Source GSM Association, http://www.gsmworld.com/news/statistics/pdf/gsma_stats_q2_06.pdf

So to conclude from the lessons learnt, why do we still see attempts to create multiple standards in a common domain? There appear to be only four,

- That the past doctrine of *de jure* standards development in committee may have instigated a parallel route to development, to that of a *de facto* standard that 'emerges' from the market. This is now unlikely in today's climate.
- That the existing standard does not provide the business functionality required
- That the standard imposes unacceptable limits on the user, blocking its use in an open environment
- That the lead developer wishes to maintain competitive advantage or lock-in in its existing market.

The first is already disregarded. The second may come from recognised differences in the market need, and may in many cases actually result in a different definition of the domain. This is actually the position present with use of ISO 26300 (ODF) with Adobe PDF, where the first reflects document formats allowing editing and updating, where the second relates to archive or stored documents. Both can easily be observed to interwork and indeed products such as OpenOffice provide this as an added value feature. Adobe PDF-B is now being submitted to ANSI as a first step towards ISO accreditation.

The fourth is regrettably suspected in more than one submission and is much quoted in respect of the Ecma 376 proposal.

The third requires more debate since it settles on the definition of an Open Standard. To the newcomer there is frequent astonishment that there has not been an attempt to formalise such a definition, and indeed that the multiple recognised standards bodies do not have such a definition. Indeed in some cases there appears to be no formal attempt to have one even internally to assess new proposals, and to rely instead on consensus. In Europe there is an added complication in that the EC directive 98/34 only recognises certain bodies as being able to officially accredit standards which will be approved by the EC. This actually is the prime reason why ODF and now MS OOXML have or are going through the ISO process.

The lack of clear and common definition requires one to differentiate between an Industry approved standard and an Open Standard. The fact that this distinction needs to be made is a nonsense and is an issue addressed later. Whilst the former may be dismissed as 'rubber stamping' the importance is in the definition of an Open Standard. Probably the most quoted example is in the IDABC European Interoperability Framework[9] and can be summarised in four points

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

This definition is currently under review and we understand an additional aspect to cover 'existing multiple product implementations' is under consideration.

Other definitions exist, but more important are the key principles:

- **Openness and Independence of its maintenance** The standard should be adopted and maintained by a recognised independent organisation which openly and transparently further develops the standard, with access open to all. Key here that, if as is likely the standard will have been developed at least in part by industry then it is handed over in its entirety, with no lingering doubts on independence or influence.

9 http://europa.eu.int/idabc/en/document/3761

- **Retains no proprietary dependencies or extensions** The standard must be free of any proprietary extensions or dependencies, or any other proprietary code or formats which might limit the use of that standard. Is the code really independent?

- **Openly Available** The standard is published in full and is freely available, with no legal or technical constraints on use or reuse by any party.

- **Royalty free** If a patent is present then this is irrevocably made available on a royalty free basis, and no royalty bearing licenses are required. This therefore specifically RAND (Reasonable and Non Discriminatory) licensing other than RF RAND (Royalty free version). The term RAND is highly contentious since to many it is exactly the opposite of that. How do you define reasonable when addressing a global market with substantial differences in local GDP? And it does discriminate against for example the FS/OSS licensing. The key requirement for this principal is that it must freely allow all business models.

- **Multiple Implementations** Do implementations of the standard exist in more than one product in general release by more than one supplier? Tests in practice all points above and also their effectiveness.

As part of Certified Open®, OpenForum Europe and Free Software Foundation Europe have constructed the following phrase to tightly encompass these principles:

An Open Standard refers to a format or protocol that is:

a) subject to full public assessment and use without constraints in a manner equally available to all parties;

b) without any components or extensions that have dependencies on formats or protocols that do not meet the definition of an Open Standard themselves;

c) free from legal or technical clauses that limit its utilisation by any party or in any business model;

d) managed and further developed independently of any single vendor in a process open to the equal participation of competitors and third parties;

e) available in multiple complete implementations by competing vendors, or as a complete implementation equally available to all parties.

[Note: Draft - still under final discussion]

Conclusion 3. *Clear definition of an Open Standard is essential to ensure full interoperability, and to avoid costly lock-in.*

Conclusion 4. *Multiple Open standards in the area of Interoperability are unwelcome, costly and impractical for both users and suppliers, and and will be rejected by the market. Users will get no benefit, suppliers only if they have a commercial proposition to support.*

5. Document Exchange Formats

The preservation of data has extended well beyond that of the 'normal' level of technical debate. It is not necessary in this paper to repeat all those arguments in detail. There is now wide acceptance of the national and public need in both the preservation of past records, and in the transition from 'old' to 'new'. The integrity of this data is clearly so fundamental to business, legal, political and cultural interests is such that the debate can not be ignored or undervalued.

The acceptance of the existing W3C standard on XML was clear as the basis for this common approach, but as we have seen already XML needed tighter definition when described in the context of Document Exchange. This requires all the functionality of editing and transmission. It is in this particular that two *de facto* potential standards have emerged – OpenDocument Format (originally defined by SUN Microsystems), and Office Open XML (developed by Microsoft).

ODF was in December 2002 submitted to OASIS, and has for 4 ½ years has operated a fully open development and maintenance process. ODF was submitted to ISO for approval in November 2005, and was formed approved in May 2006, without dissension.

OOXML has been developed solely by Microsoft and was submitted to Ecma in December 2006.
This was formally introduced to the ISO approval process under the fast track process, During the 28 day period allowed for Contradictions, some 19 replies were received from National Standards Bodies, of which the clear majority were negative. Despite this ISO surprisingly have continued, without further debate, with the five month voting process.

Whilst clearly there is a separate and parallel debate on the merits of the Ecma 376 proposal, it is not the purpose of this White Paper to discuss this in detail other to note the concerns raised on independence, complexity, ability to implement, and adherence to existing standards.

What we will discuss are the reasons why a second competing standard is being proposed?

Microsoft are a member of OASIS and have been able to observe throughout the ODF OASIS technical committee so it is reasonable to assume that the two standards haven't emerged in competition by accident, which leaves only two options,

- that commercial pressures and maintenance of market control are viewed as essential, and/or,
- that business functionality can only be delivered this way.

Recent submissions by Microsoft, both at Government hearing, and in response to market criticism have certainly made mention of specific claimed deficiencies in ODF or particular benefits of OOXML. As part of the ISO submission by Ecma critics of OOXML certainly have made a long list of deficiencies, both in validity as an ISO standard and in functionality. However, there appears to be one area of functionality only which would appear might justify to a user the need for two standards – and that is the area of "better backward compatibility with older documents".Quoting the Ecma overview document[10] "OpenXML was designed from the start to be capable of faithfully representing the pre-existing corpus of word-processing documents, presentations, and spreadsheets that are encoded in binary formats defined by Microsoft Corporation".

The CIO from Oxford Archaeology (who have a particular interest in preservation of data) Chris Puttick has analysed these claims in detail and found them wanting. In his document[11] not only does he find fault in Microsofts claims, and identifies that not only does OOXML fail to provide sufficient information to provide 100% fidelity for legacy formats, but the reference implementation also fails to do this.

There is a simple answer,

10 http://www.ecma-international.org/publications/standards/Ecma-376.htm
11 http://www.odf-eag.eu

"If 100% fidelity of legacy documents is what Microsoft are keen to ensure, they need merely to grant licences in perpetuity to all comers for use of these legacy applications and associated environments."

Even more important his paper analyses the real level of need for preservation of files. Rather than a single all-devouring need, it is multi level:

"Another question to be addressed: is 100% fidelity necessary or even useful? For something like CAD, it would seem important. For word processed documents, spreadsheets, presentations? Maybe, but the need is not so clear nor widespread. Let us examine some different audiences interested in preservation of office documents.

Government agencies
Concerns include short- to medium-term access for business and compliance needs. Some proportion of documents retained indefinitely for archival purposes.
Businesses
Concerns include short- to medium-term access for business and compliance needs. Some proportion of documents may be retained indefinitely for archival purposes.
Third sector organisations
Concerns include short- to medium-term access for business and compliance needs. Some proportion of documents may be retained indefinitely for archival purposes. In the academic sector old research may form the basis of new research and so continuing accessibility is important.
Individuals
Concerns include short- to medium-term access for personal and professional needs. Some proportion of documents may be retained indefinitely and even passed on to family members.

For how many of the documents produced by these groups is exact reproduction necessary, rather than preservation of content and meaning? For that small number, would use of PDF/A (ISO 19005-1:2005) be more appropriate? This guarantees a visually identical document in a preservable format, and moreover one for which any number of free readers exist. In fact, in those cases, would a migrated document be acceptable? Surely only a digitally authenticated and author verified PDF/A document, created within the same time-space or a copy of the original application and environment would be deemed acceptable. For the remainder it is only content and meaning that is of interest."

"So in conclusion it seems that:

- *there is almost no need for the preservation capabilities claimed for Ecma Office Open XML;*
- *the 100% legacy support claims are in fact untrue;*
- *planned developments of the existing ISO 26300 standard will shortly provide for the scarce few cases where documents in a legacy format cannot currently be translated into ISO 26300 format without loss of meaning, and finally;*
- *commonly available virtualisation technologies can provide a more effective and safer solution where true 100% fidelity is needed or desired."*

A further area for debate is the use of 'plug-ins' or 'translators' between two formats. These allow for translation or storing of a document from its native form into an external format. They are implemented with an application eg OpenOffice or Microsoft Office, and to many is another way of dismissing the problems and impracticalities of dual competing standards. There can be no doubt that as a short term transition aid they can be invaluable when a user is faced with a specific document problem, but as a long term component of an interoperability strategy they are of very limited value and can not be used as an alternative to selection. Two prime reasons,

- They will never provide full functionality of transition
- They are invariably an add on and require specific user intervention (and maybe downloading)

So is there still time for the two standards to merge, or do we need to see one (or both) being scrapped and rebuilt?

Certainly all technical analysts observe substantial difference in their respective architectures, and we are sure the individual authors would equally resist. But this actually is a decision by the market, and as discussed in Section 3 above all historical evidence is that it is unlikely both will survive long term. The biggest loser would not only be the suppliers but the market. The market actually demands only one, and the key must be that it is 100% Open. The single message must be that the standards authors must meet, not to argue merits of whose is best, but how can the market requirements best be met. But who will take this lead, will market demands outweigh proprietary and commercial pressures.

Conclusion 5.

ODF is already established and approved as a ISO standard, and has both been incorporated into multiple supplier applications, and extensively endorsed worldwide by both government and private sector user organisations. Microsoft and Ecma have not established any core functionality based arguments why OOXML alone is uniquely able to meet specific business needs of legacy preservation. If the only valid reason for the introduction of OOXML is the preservation of proprietary market share, then OOXML simply cannot be justified and approved by ISO.

6. Role of Standards Bodies and Governments

The definition above of an Open Standard (“ recognised independent body that is equally open to participation by anyone”) does not require formal adoption by one of the International standards bodies. In Europe at least the situation is more complex because of the existing of EC Directive 98/34 which currently mandates ISO, CEN, CENELEC and ETSI as required standards accreditation authorities. Note that it does not use the term Open Standard at any point. Nor do the standards bodies themselves. Each of the standards bodies have a charter and it is against this that the accreditation process will have been defined. The current debate on ISO 26300(OASIS ODF) and Ecma 376 (MS OOXML) have given an opportunity to observe their processes inaction.

ISO is a non-government organization that both administers standards development and certifies international standards and conformity assessment systems. Uniquely its voting membership comes from national bodies or private bodies authorised by Governments. JTC-1 is the technical committee administering the OOXML proposal, and this effectively has been subcontracted to ANSI. Indeed it is a common factor that in many ways ISO seems to act more in a supervisorial manner rather than be actively involved in detailed discussion and decision. In JTC-1 draft standards are processed via tracks. Notoriously (and many felt unsuitably) OOXML was submitted by Ecma under fast track, a route more commonly used to allow fast passage of non controversial proposal which had already been developed and discussed under another industry standardisation body (such as Ecma).

Of particular note with ISO that the real decisions lie with the national voting bodies (NBs). The NB reviewers are typically experts in a particular field. They may come from academia, or equally from a commercial company. The indication is that at best they are completely independent from ISO processes, at worst they are not under any degree of conformance, and are open to political or commercial pressure. Each seems to be set up differently.

Ecma and OASIS are both organisations who have a track record of developing and maintaining standards. The OASIS membership and management process seems particularly open and all decisions and discussions at meetings are taken within high openness and transparency. In this way the development of ODF was long discussed with no surprises. Ecma appear to have a substantially tighter membership set of rules, and discussions largely invisible outside the membership and none are available to public view.

One common factor which has been raised is how ISO has reacted to the potential of dual competing standards. This centres on the remit that ISO and JTC-1 commitment to support World Trade Organisation advice, notably, its duty under the Agreement on Technical Barriers to Trade, Article 2 section 2.2:

> Members shall ensure that technical regulations are not prepared, adopted or applied with a view to or with the effect of creating unnecessary obstacles to international trade.

In addition,

> **All** relevant bodies of WTO Members should be provided with meaningful opportunities to contribute to the elaboration of an international standard so that the standard development process will not give privilege to, or favour the interests of, a particular supplier/s, country/ies or region/s.

The background of most of these organisations has traditionally been one of standards creation (*de jure*), and this is evident in the wording of their charters. There is little there to reflect their potential new role in the accreditation of what may be *de facto* standards, or at least potential standards that have emerged from a single or multiple proprietary and/or commercial source. There becomes the strong need for a series of characteristics which are not only visible in practice but can themselves be measured, and recognised.

- **Independence** This is no longer something that can be assumed. There can be no sign of the potential for direct influence. The preferred relationship between ISO and its approved bodies must be beyond question. Why is it that ISO JTC1 Secretariate is subcontracted to ANSI (who themselves may be submitting proposals to ISO)? Were ISO involved in the ANSI decision(on behalf of ISO) to ignore the record number of 'contradictions' raised by National Bodies(NBs) in the Ecma 376 fast track process? Were National Bodies aware of the decision taken to change the rules part way through the fast track process that allowed the submitter of the proposal to effectively ignore these contradictions? Is it politically correct that the Technical Committees in both Ecma and OASIS are chaired by representatives of companies (Microsoft and SUN Microsystems) who were involved in the development of that standard, and in the case of MS OOXML still seem to be heavily involved? What sort of external message does this portray?

- **Transparency** Is the decision making both at national level, and within the technical committees freely open to participation and comment? Whilst some NBs (like the UK BSI) work tirelessly to ensure independence, and deploy technical rigour in their decision making, this may not be the case throughout all the ISO member voting countries. In many it is not even clear that a formal technical evaluation has even been established. Decision making varies, and whatever the actual position, without full transparency it is difficult not to be left with doubts on the independence and rigour employed. Of equal concern is the transparency within the proposing body themselves. The forward development of ODF within OASIS gives confidence in the independence, transparency of all actions and discussions,and participation available in this organisation. Questions remain, however, in the treatment of OOXML within Ecma. Why was Ecma (European Computer Manufacturers Association) chosen rather than ANSI (US based) or OASIS (where MS are a member also)? What message does it send when the head of the OOXML development in Microsoft co-chairs that panel? The Ecma process appears significantly less transparent than most people would expect.

- **Measurable** To be effective and give confidence to the market, it is unsatisfactory that a common definition of an Open Standard is not in use. How can NBs within the ISO process have a common ground for decision making? How does the public know when they are investing in a product based on a standard with genuine aspects of openness and the benefits that openness brings, and not just a piece of proprietary technology with a thin veneer of committee process applied as an afterthought?How can the public be certain that the standard is of the perceived quality? What value is being generated by the 'mark' without one?

- **Leadership** The prospect in any situation of two competing standards in the same domain must be resisted, **prior** to the process of evaluation. The OASIS/ Ecma debate would not have happened if the lead proposers knew that ISO would never have countenanced two standards. Leadership is about acting as technical and political market advisors encouraging debate and cooperation, and not allow other standards organisations to be used as the 'name' to hide potential industry conflict.

It must be clear from this that two options emerge.

Firstly that ISO itself becomes stronger and takes a much tighter control over its approval process, insisting on a common definition, alongside its broader measures. If it is to continue to be perceived as THE primary authority then it has to radically upgrade its processes and definition measurement.

Secondly that we acknowledge that the definition of an Open Standard only requires a 'recognised independent body that is equally open to participation by anyone'. In Europe at least this will require that to be formally approved by Government the current EC Directive 98/34 needs to be updated. This is under debate currently already. Inevitably this would lead to the potential for **more** instances of contradicting standards.

Conclusion 6. *ISO needs to rapidly respond to the criticisms made, and if it is to survive as* ***the*** *global champion of valued, independent and truly open standards then it must reassess the transparency of its processes, its relationship with NSBs, and other standards bodies. In particular it must work with Industry, User bodies and Government to confirm a single, widely accepted definition of an Open standard.*

Government gets much mention above and its role needs further comment. It has two extremely important roles which are fundamental both in the creation and development of new markets. The firstly simply is its buying power. Purchasing decisions made by Government **will** directly influence supplier strategy, investment and product development in a way no other single user can. This power is consistently underexploited, other than when it comes to seeking discounts – then it can be remarkably effective!

The second is in leadership. Government policy at a national level will directly influence policy at a local, state level – but will also directly influence decisions in the private sector, particularly SMEs. In Europe the role of the European Commission is highly respected, both within the EU but also beyond. Units such as IDABC, are mandated to respond to the needs and requirements of member states but have built a strong reputation for strategic advice and practical implementation. In Berlin there was a clear mandate from national government representatives to seek a single standard for ODEF. This **is** different from taking a position of preference for one or entering the debate on the technical validity of MS OOXML. Version 1 of the European Interoperability Framework published by IDABC already provides a strong base for both eGovernment interoperability. The definition of an Open Standard contained within it was fully supported by OFE amongst others, and the updated version due later this year will again be fiercely debated. The point it is that the views of the EC are important and are influential. There appears to be a strong argument for a more proactive stance by the EC.

There is already a highly relevant example of where Government policy, intervention and leadership has provided a positive impact on the market. And that is the development of the GSM standard within the mobile telephony market. This was detailed earlier in this paper, and the market growth in Europe compared to the US where a hands off policy was followed is remarkable.

Conclusion 7. *Government and the EC has a particularly important role in the industry and in the development of new markets. Direct market intervention is generally not welcome, but in the case of standards development, the EC has a positive role alongside ISO, industry, and user representatives. In the case of ODEFs then the EC should positively respond to the explicit concerns of national governments over two standards, and act decisively in taking a lead in their avoidance.*