

LETTERS TO THE EDITOR

Competing Views of Standards Competition: Response to Egyedi & Koppenhol

Joel West, San José State University, USA

Vladislav V. Fomin, Vytautas Magnus University, Lithuania

While we have both known Tineke Egyedi and her work since the first SIIT conference in 1999, we were surprised and disappointed at some of the conclusions in her paper with Aad Koppenhol of Sun Microsystems on ISO standardization efforts for competing document standards (Egyedi & Koppenhol, 2010—hereafter “EK”).

We thank the editor for the opportunity to summarize these concerns in hopes of engendering a debate among the IT standards community, because we believe the issues raised in the original paper extend far beyond the competition between Sun’s Open Document Format (ODF) and Microsoft’s Office Open XML (OOXML) file formats.

The main point of EK is to argue that standards wars among de jure standards do not provide the economic benefits of those among de facto standards. In their rejection of Blind (2008), EK also asserts superior societal welfare for a single de jure standard over multiple competing de facto standards. We believe these conclusions cannot be supported upon consideration of the significant omitted theoretical research and facts of the case.

BENEFITS OF COMPETITION

In arguing that a single de jure standard provides lower costs for end-users, EK repeats a decades-old (and largely abandoned) fallacy that favors an omniscient central decision-maker over the messiness of non-cooperative competitors. As in all such arguments, it objects to the inefficiency of redundant investment and consumers switching costs while ignoring the inefficiency of monopoly.

The theoretical benefits of a single open standard come by reducing switching costs and thus encouraging competition between products conforming to that standard (EK: 49; also West, 2007). Research suggests that the benefits of an open standard are fully contingent upon such competition: if a standard has only a single implementation, then its degree of openness has little practical value.

Today, it seems premature to conclude whether or not either ODF or OOXML will engender meaningful choice of alternate implementations. If not, then the potential adopter is left a choice between the two-sponsors’ respective implementations, each defined by

a publicly available specification. Certainly having two single-implementation standards provides more choice and competition than having one single-implementation standard. In such cases, the “adoption choice” (as defined by Shapiro and Varian, 1999) is more likely to be determined by product features rather than the underlying standard.

However, there are reasons to question whether this even represents a standards contest. As EK brings out, ODF vs. OOXML is not like typical standards contests—VHS vs. Beta, Mac vs. Windows, BluRay vs HD DVD—because each sponsor has indicated an intention to support both standards.¹ This suggests an interesting (but missed) opportunity by EK to extend what we know about standards wars, since so little has been written (Farrell & Saloner 1992 notwithstanding) about converters, their relative scarcity and practical limitations.

Finally, there is reason to question the *de jure* designation in this case, or even its applicability to 21st century standardization. As originally used in the literature (e.g. David & Greenstein, 1990), it presumed a process by which the government objectively chose the superior alternative through an incorruptible process of truth seeking.

Today the so-called *de jure* standardization reflects merely the endorsement by a government (or government-authorized) agency of one or more private interests. As amply documented by EK in the OOXML ISO controversy, this process is highly politicized; even more detail is provided on studies that entirely focus on the internal politics of the standardization process, such as Isaak (2006). Political scientists have long since concluded that legislative outcomes reflect the relative power and skill of competing claimants rather than the merits of their respective claims, so abandoning the pretense of a meritocratic standardization process—for ODF, OOXML or any other *de jure* standard—seems long overdue.

ONTOLOGY OF KNOWING

As active case study researchers, we recognize and enthusiastically support the use of cases to provide rich description, identify possible causal relationship, answer “how” and “why” questions, and suggest avenues for future research. However, case studies are not the appropriate research design for answering “how many” or “how much” questions (Yin, 1994).

EK concludes that “having two overlapping *de jure* standards merely creates extra costs ... without offering anything in return” (p. 49). Whether or not the case is proven for ISO document formats—we believe it is not—that does not mean the evidence from one case can be generalized to all cases of competing standards.

One essential moderator of such claims is whether a given product can support multiple standards. All graphics programs today support multiple file formats, whether BMP, GIF, PNG, JPEG or TIFF. Fax machines will support multiple transmission modes, and dual-mode (analog and digital) mobile phones were common for more than a decade.

Multi-mode support is admitted more difficult due to complexity of the ODF and OOXML document formats, which are perhaps rivaled only by that of PDF (another ISO standard). EK might argue that competing 1000+ page business document formats create extra costs and wastes in a way that competing 10 page photograph formats do not, but instead make expansive claims rather than these more limited (and supportable) ones.

UNBALANCED PERSPECTIVE

EK makes two arguments that exactly mirror the arguments of Sun, IBM and other ODF supporters in seeking ISO rejection of OOXML. First, ODF is an open standard while OOXML

is not, and secondly, that once ISO had approved one document standard, that a second would be counter-productive.

The latter argument is easily disposed of, as it is a familiar one. The same approach was used in the 1990s when supporters of D-AMPS (aka NADC aka IS-54) argued that once the US had a single digital cellular standard, it didn't need the proposed CDMA alternative (IS-95). The Telecommunications Industry Association did consider a second standard, and today CDMA has a majority of the market while IS-54 is almost entirely phased out. Sun and its allies won ISO approval first, so of course they would not see a value in an additional standard: if the roles were reversed, we doubt they would advocate this position, just as we doubt Microsoft would favor a second competing ISO standard.

As for open-ness, no standard is fully open and few are fully closed (Krechmer, 2006; West, 2007)—just as no human being is perfectly good and few are perfectly evil. While the process Sun used to win ODF approval may have been more open than that used by Microsoft with OOXML, the evidence presented is weak and we believe the two standards are more similar than different.

Both standards were written by for-profit corporations to win additional adoption for their respective commercial products: StarOffice and Microsoft Office. (IBM also gained a financial interest in promoting ODF when in 2007 it announced Lotus Symphony, based on the open source sibling of StarOffice.) Both companies promoted their standards through an industry consortium where they had significant influence, and both leveraged that consortium approval to win consideration by the relevant ISO/IEC JTC1 standardization committee.

EK does not offer a measure as to whether the ODF standardization process resulted in greater changes (substantive or otherwise) from Sun's original specification and final ISO approval. A textual compare

tool—such as that provided by Microsoft Office—might be used to generate those metrics. Similarly, there is no comparison of the size of the ODF and OOXML specifications—by external accounts the OOXML specification was larger—or any attempt to determine whether the lengthy OOXML specification was due to a more complex standard, excessively wordy OOXML text, or sparse (or even incomplete) ODF text.

More fundamentally, both original standards were created to formalize the external representation of the internal document representation as implemented by the specific products, i.e. StarOffice and Microsoft Word. The problems of imprecise translation between ODF and OOXML (as mentioned by EK and other sources) reflect the contrasting internal architectures of these two products, just as the differing cognitive maps between German and French (let alone German and Chinese) make it difficult to translate between these with 100% accuracy.

Finally, the criticism of partisans in this standards war appears entirely one-sided, with innuendo such as “Microsoft did not take part,” and “question the sincerity of Microsoft.” Questions about Sun's (or IBM's) motives in this contest could also be found in the industry press, but they are not presented here.

CONCLUSION

The questions of specifying, ratifying and implementing these two standards raise important issues about what we know about standards and standardization. EK provides an important first step in chronicling this story, but in their conclusions they are getting ahead of the evidence developed thus far.

REFERENCES

Blind, K. (2008). A Welfare Analysis of standards Competition: The example of the ECMA OpenXML Standard and the ISO ODF Standard. In K. Jakobs

& E. Söderström (Eds.), *Proceedings of the 13th EURAS Workshop on Standardisation* (pp. 1-17). Aachen, Germany: Wissenschafts Verlag Mainz.

David, P.A., & Greenstein, S. (1990). The Economics Of Compatibility Standards: An Introduction To Recent Research. *Economics of Innovation and New Technology*, 1(1-2), 3-41.

Egyedi, T. M., & Koppenhol, A. (2010). The Standards War Between ODF and OOXML. *International Journal of IT Standards and Standardization Research*, 8(1), 49-62.

Farrell, J., & Saloner, G. (1992). Converters, Compatibility, and the Control of Interfaces. *Journal of Industrial Economics*, 40(1), 9-35.

Isaak, J. (2006). The Role of Individuals and Social Capital in POSIX Standardization. *International Journal of IT Standards and Standardization Research*, 4(1), 1-23.

Krechmer, K. (2006). Open Standards Requirements. *International Journal of IT Standards and Standardization Research*, 4(1), 43-61.

Shapiro, C., & Varian, H. R. (1999). *The art of standards wars*. California Management Review.

West, J. (2007). The Economic Realities of Open Standards: Black, White and Many Shades of Gray. In S. Greenstein and V. Stango (Eds.), *Standards and Public Policy* (pp. 87-122). Cambridge, UK: Cambridge University Press.

Yin, R. K. (1994). *Case Study Research, Design and Methods (2nd ed.)*. Newbury Park, CA: Sage.

ENDNOTE

- 1 The current OpenOffice 3.1 supports, along ODF format, several older proprietary document formats from Microsoft. It is likely to assume that one of the next versions of the software will support OOXML. The same can be expected from Microsoft Word software with regard to ODF.

Joel West is Professor of Innovation & Entrepreneurship at San José State University in Silicon Valley. His first papers on standards were presented at the 1st SIIT conference in 1999, and since then he has published papers related to standards and standardization in First Monday, Information Systems Research, International Journal of IT Standards & Standardization Research, Journal of Engineering and Technology Management, Research Policy, Telecommunications Policy, as well as teaching cases on Qualcomm's standards strategy. His other main research interests are open innovation, open source software and engineering entrepreneurship. He is the author of web logs on open IT strategies, open innovation, cleantech business and engineering entrepreneurship.

Vladislav V. Fomin is a professor at the department of Applied Informatics at Vytautas Magnus University in Kaunas, Lithuania. Fomin's current research interests include studies of development of information and communication technologies (ICT) infrastructure, studies of design and implementation of Information Systems (IS) in organizations, standard making processes in the field of ICT, as well studies of technology innovation. Vladislav has over 60 scientific publications in journals, conferences, and as book chapters, including Journal of Strategic Information Systems, Communications of the Association for Information Systems, International Journal of IT Standards & Standardization Research, Telecommunications Policy, Knowledge, Technology & Policy. Conference publications and presentations include The International Conference on Information Systems, European Conference on Information systems, Hawaii International Conference on System Sciences, Academy of Management, and other.

Reply from Egyedi and Koppenhol

Tineke Egyedi, Delft University of Technology, The Netherlands

Aad Koppenhol, Sun Microsystems, Inc., The Netherlands

We fully agree with our colleagues West and Fomin that the issue of competing committee standards is highly interesting. While largely disagreeing with Blind (2008) on his analysis of the ISO ODF vs. OOXML standards war—and therefore on his conclusions—we compliment him for putting the issue of competing committee standards on the research agenda. In our critique on Blind, we re-analyzed this standards war, first, because his empirical data did not match ours (i.e., based on key ISO committee documents, participant observation of the national Dutch and international ISO process, the BRM included, panel discussions with experts at a Delft seminar 18 March 2008 and the 2008 EURAS conference in Skoevde). Second, there was an urgency to put straight what we feel was an incorrect conclusion because this war promised to have far going

implications for citizens—as software users and tax-payers—and government IT-services.

We also agree that care should be taken in generalizing based on one case.

We, however, disagree with the way West and Fomin misrepresent and selectively extract parts of our article, and suggest they re-read it together with the original article by Blind (2008).

REFERENCE

Blind, K. (2008). A Welfare Analysis of standards Competition: The example of the ECMA OpenXML Standard and the ISO ODF Standard. In K. Jakobs & E. Soederstroem (Eds.), *Proceedings of the 13th EURAS Workshop on Standardisation* (pp. 1-17). Aachen, Germany: Wissenschafts Verlag Mainz.

Tineke Egyedi is senior researcher Standardization. She has participated in several EU projects (the last one was on EU ICT standardization policy, finalised in 2007), industry projects (e.g. Dynamics of standards; Sun Microsystems), and Dutch government projects (e.g. Trends in Standardization). Her current research interests projects include standards and infrastructure flexibility (Next Generation Infrastructures project, TU Delft), and the interaction between international standardization and national innovation projects (Dutch National Science Foundation). She is president of the European Academy for Standardization (EURAS) and chair of the International Committee for Education about Standardization (ICES). She has chaired standardization seminars, workshops and conferences. Currently she is associate editor of the International Journal of IT Standards and Standardization Research (IGI Global) and member of the editorial board of Computer Standards and Interfaces (Elsevier).

Aad Koppenhol is Senior Principal IT Architect and Open Source & Standards driver for Sun in the Netherlands. He has 35 years of experience in ICT sector. During his ICT career he has played different roles. He strongly believes that, in view of the current changing role of the Web towards a Social and Cultural utility, more than ever Human Values need to be protected. In his PhD on Value Sensitive Design and Information Architectures at the Delft University of Technology he argues that technology's first role is to facilitate mankind. His motive is based on co-creation or 'Collaboration & Knowledge Sharing', which are key in many developments. The combination of his interest in Technology and Philosophy feed him with fresh insights. As an IT- Architect he is very conscious of dealing in human values. His broad experience and technical skills are to his advantage and match his relation-building capacities.

APPRECIATION

Professor of Standardization Wilfried Hesser Retires

Henk de Vries, Erasmus University, The Netherlands

Prof. Dr. Wilfried Hesser, professor of standardization in Hamburg, Germany, retired in September 2010. Because of his impact on the development of standardization as a topic of academic research and education, this deserves to get attention in this journal.

Wilfried Hesser (1947) worked in aerospace industry before he received his technical education at different levels until Production Technology at the Technical University of Berlin. He also received his PhD at this university. Research topic was the interrelation between design and standardization (Hesser, 1981).

Wilfried Hesser became professor of standardization and technical drawing at the University of the Federal Armed Forces Hamburg in 1984. Earlier professors had given the topic attention (a forerunner was Prof. Dr. Otto Kienzle, Chair of tool machines, Technical University of Berlin, 1941-1955) but as far as I know he was the world's first professor with standardization as the core topic of research and education. During the years, he has established a research group, see <http://www.pro-norm.de/>. Many dissertations and other publications on standardization have been published, often in German language but several also in English (e.g., Hesser & Inklaar, 1997).

Prof. Hesser put little effort in publishing in top-scientific journals – he preferred to focus

on what is really important for the development of standardization as a discipline. Dissertation topics like company standardization (Adolphi, 1997) and business models of national standardization organizations (Riemer, 2010) are extremely important for the standardization field but will, in general, be out of the scope of scientific journals, except this journal and then the focus on IT can be a problem.

Giving lectures and performing research is a normal activity for a university professor but Wilfried Hesser did more. In order to establish contacts between PhD students and other researchers in the field of standardization, he organized conferences on standardization research. Wilfried Hesser was co-founder of EURAS: the European Academy for Standardization (<http://www.uras.org>). EURAS' aim is to stimulate standardization education and research. Its main activity is the yearly two-day EURAS conference which provides the opportunity for researchers to present their research and get feed-back on it. EURAS is not exclusively for academic people, it is open for participants from industry, standards bodies and other organizations. Wilfried Hesser saw the need for standardization researchers to keep in touch with practice, he played an active role in ANP, the German member body of the International Federation of Standards Users IFAN (<http://www.ifan.org>). Already

an ‘old’ professor, Wilfried Hesser saw the opportunities of modern technology in the dissemination of standardization knowledge. He initiated the e-learning project ‘Standardisation in Companies and Markets’ in which he established cooperation with universities in China, Indonesia, the Netherlands, Sri Lanka and Vietnam to develop teaching modules on standardization. The project has resulted in a book (Hesser et al., 2007) and Internet modules (<http://www.asia-link-standardisation.de>).

Unfortunately, it is the university’s policy not to continue a chair once the professor retires. This implies that the research group will be dismantled. Meanwhile, Prof. Dr. Knut Blind has set up a research group at the Technical University of Berlin, see http://www.inno.tu-berlin.de/menue/ueber_uns/team/prof_knut_blind/parameter/en/. Though its scope, Innovation Economics, is broader than just standardization, this chair pays a lot of attention to standardization, both in education and research, and in that sense it can be seen as a successor of the standardization chair in Hamburg.

Personally, I am very grateful to Wilfried Hesser. First, he provided advice to the Netherlands Standardization Institute NEN when they decided to establish an endowed chair on standardization. Secondly, I enjoyed hospitality in Hamburg during conferences and at other occasions. Third, I am happy to be part of the EURAS community. Fourth, Wilfried and his team supported me in my own PhD research.

And fifth, we cooperated in a research project on product variety management (Hesser et al., 2004) and the above-mentioned education project with Asian partners. We share the personal mission to further develop standardization as a discipline. Therefore, I will miss Wilfried. I wish him and Uschi Uderstadt a healthy and happy new phase in their lives.

REFERENCES

- Adolphi, H. (1997). *Strategische Konzepte zur Organisation der betrieblichen Standardisierung (DIN-Normungskunde Band 38)*. Berlin: Beuth.
- Hesser, W. (1981). *Untersuchungen zum Beziehungsfeld zwischen Konstruktion und Normung (DIN-Normungskunde Band 16)*. Berlin: Beuth.
- Hesser, W., Feilzer, A.J., & de Vries, H.J. (Eds.). (2007). *Standardisation in Companies and Markets (2nd ed.)*. Hamburg, Germany: Helmut-Schmidt-Universität.
- Hesser, W., Hoops, L.-P., Feilzer, A.J., & de Vries, H.J. (2004). *Complexity management and in-company standardisation – Research results from a company inquiry*. Hamburg, Germany: Helmut-Schmidt University and University of the Federal Armed Forces Hamburg.
- Hesser, W., & Inklaar, A. (1997). *An Introduction to Standards and Standardization (DIN-Normungskunde Band 36)*. Berlin: Beuth.
- Riemer, N. (2010). *Netzwerkkoordination als Geschäftsmodell für Normungsorganisationen*. Aachen, Germany: Wissenschaftsverlag Mainz.

Henk de Vries is Associate Professor of Standardization at the Rotterdam School of Management, Erasmus University, Rotterdam, The Netherlands. He is Vice-President of the European Academy for Standardization EURAS, Vice-Chair of the International Cooperation for Education about Standardization ICES, and Special Advisor of the International Federation of Standards Users IFAN.