EDRMS Standards – a critical evaluation of the benefits of superseding national standards with European models focusing on TNA 2002 replacement by MoReq2

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Abstract

of the Master's Dissertation on "EDRMS Standards – a critical evaluation of the benefits of superseding national standards with European models focusing on TNA 2002 replacement by MoReq2" by Philipp Wilhelm submitted to Northumbria University, UK, in 2008.

This dissertation evaluates the differences between TNA 2002 and MoReq2 and investigates the standards situation in the UK and Europe. The dissertation includes a literature review, a comparison of the standards' texts and qualitative interviews with key stakeholders. This should guarantee an open and multifaceted approach that leads to a differentiated and unbiased evaluation. So far little research has been undertaken in the EDRMS standards field in general and on TNA 2002 and MoReq2 in particular. A critical comparison of different EDRMS standards has not yet been made.
MoReq2 is certainly an adequate replacement of TNA 2002. It draws heavily from the British standard concerning contents, structure and even phrasing. The international editorial board of MoReq2 ensured that there is no British dominance and that international best practice was also taken into account. MoReq2 provides clear and unambiguous definitions of an Electronic Records Management System and defines many ERMS related topics in the optional modules section. MoReq2 is an up to date, comprehensive ERMS standard. The most common criticism by the interviewees concerned the ambitious scope and the length of the document. MoReq2 attempts to regulate many aspects at a very detailed level. This could create a problem if the compliance test framework follows this detailed, prescriptive approach and establishes a high and costly barrier for smaller companies. The true impact of MoReq2 will only be seen once the governance and the compliance testing are decided. At present the European national archives and the European Commission are very hesitant to actively support and mandate MoReq2. This creates a stalemate situation where few IT companies dare to spend money on developing a MoReq2 compliant solution as long as the market for these solutions cannot be estimated.

Glossary

EDRMS Electronic Document and Records Management System is used because this term encompasses all current IT possibilities and does not restrict the functionality to one data type which is implied by the terms ERMS or EDMS.

MoReq1 is only used in this dissertation to emphasize the difference to MoReq2 and enhance clarity. The correct short form is MoReq (2001).

MoReq2 is the official short form for *Model Requirements for the Management of Electronic Records 2008* which is also used in the logo and the Moreq2.eu web site.

Standard is also used for MoReq1 and MoReq2 even though officially they are not standards but guidelines or as their full title defines “model requirements”.

TNA 2002 is the widely used term for the UK National Archives’ “functional requirements for electronic records management systems (ERMS)” in their updated 2002 version. TNA 2002 is also known as “revised PRO” referring to the functional requirements published in 1999 by the Public Records Office.

1 Introduction

The dissertation evaluates the advantages and disadvantages of EDRMS standards in general and MoReq2 and TNA 2002 in particular. The study tries to answer the question if MoReq2 has the potential of replacing TNA 2002 in the UK and becoming a de jure or de facto standard in Europe.

No academic evaluation of the replacement of TNA 2002 with MoReq2 has yet been written. MoReq2 was published in February 2008 and so far has not been the topic of scientific research. Very limited research has been undertaken in the EDRMS standards field in general. A replacement of national standards by a new European model might have political and economical implications. A replacement of the national standard in the UK could also influence decisions in other European countries. Therefore an assessment of the benefits of shifting to a European standard is important beyond the scientific community.

The dissertation scrutinizes the differences between TNA 2002 and MoReq2 and discusses the necessity of separate national standards. The MoReq2 standard and its development are examined to see if it incorporates current European and international best practice or if it was watered down to the lowest common denominator. A text comparison of the two standards and interviews with key EDRMS standard stakeholders should highlight the benefits and problems of moving from a national standard to a European model. The focus lies on the TNA 2002 replacement but arguments made in other European countries are also taken into account. Developments of new national standards in other countries like NOARK 5 in Norway are also briefly examined. The alleged British influence on the two MoReq standards is scrutinized to see if the benefits of a replacement would be higher in the UK than in other countries. The dissertation also investigates the reasons behind the National Archives' decision not to mandate MoReq2 officially and refrain from a national adaptation with a chapter zero.

2 Literature Review[1]

Due to the low number of articles treating EDRMS standards in peer reviewed journals grey literature (e.g. conferences proceedings, articles on organisations' websites) is included in this review. It has to be kept in mind that many authors in this field are affiliated to organisations that

[1] The last day of literature search for this dissertation was 04 August 2008.

are involved in EDRMS standards developments. Their articles are nonetheless important as expert opinions.

2.1 Standards for records management and the legislative environment

In the last two decades a number of national and international standards were published in the records management field. Hofman (2005, p.23) points out that "ISO 15489:2001 is the main and overarching standard for records management. It provides an excellent framework and a broad view of the principles and core issues". Hofman (2005, p.24) highlights that none of the EDRMS standards "is really based on ISO 15489. They are mostly developed within other contexts."

The problem of defining an EDRMS and the differences between EDMS and ERMS are investigated by Johnston and Bowen (2005). They take the National Archives of Australia definition as a starting point and scrutinize it for relevance to end users. They conclude that the products on the market and the workflow in organisations have moved beyond strict EDMS and ERMS definitions. Cain (2002, p.16) points out that "MoReq itself seems to oscillate between two alternative viewpoints. One is that an ERMS is an additional set of functions 'bolted on' to a more traditional document management system. Alternatively, MoReq's authors also appear to consider that an ERMS is an entirely separate application that can capture transactional records".

A whole array of standards exists for metadata and archival description. Herzog and Wiesner (2004) list numerous ISO standards that define elements which are relevant for records management. Kampffmeyer and Risse (2007) mention that especially ISO 23081 (for metadata) ISO 14721 (Open Archival Information System Standard for digital long term preservation) were of importance to the MoReq2 development. Waalwijk (2005) describes the difficulties of standard references at national level. The Dutch standard ReMANO was built on MoReq1 but "on several points, mostly where MoReq refers to ISO-norms, changes had to be made since not all ISO-norms are supported by Netherlands Institute for Standardisation (NNI) or because MoReq does not refer to standards where NNI did have some to refer to".

McLeod and Hare (2004, pp. 59-71) give an overview of the legislation in the UK that has implications for records management. The laws and regulations cover accounting, data protection, public access to information, e-commerce and electronic signatures. "Certain laws and regulations apply to all organisations, for instance, those governing finance, tax, employment and health and safety. In addition, there are then sector specific ones, such as the Public Records Act (2958, 1967) […]". The stricter legal environment is one of the key drivers behind EDRMS implementation in organizations; therefore an EDRMS standard must set a framework to meet the legal requirements (Cimtech, 2007, p.81). Veitch (2008) quotes Mike

Davis from the research firm Ovum who regards the amendments to the Federal Rules of Civil Procedure (FRCP) in the US as a boost to EDRMS worldwide:

> Introduced a year ago, the FRCP amendments bring new rules for the discovery and preservation of electronic records in the US. 'There may be a second blip for RM [after the post-Enron corporate governance rules] through the data losses news, but the big push I see happening in the next two years is FRCP' Davis says. Davis believes that in the same way as the US Sarbanes-Oxley corporate governance law was felt in other countries, FRCP changes could affect other jurisdictions.

Perkins (2007) describes the difficulties of conflicting national and international standards for records retention for multinational companies, "for example, e-mail regulations in SEC rule 17a-4 conflict with European privacy laws."

A current standards project is the UN/CEFACT (2007) lead edited *Record Exchange Standard* that aims to define "the transfer of custody, ownership and/or responsibility of digital records from one system to another in either the public or private sector". It addresses the problem of records stored in various systems inside an organisation and their transfer to internal or external records systems. „The short lifespan of record systems leads to a key challenge in preserving digital records: ensuring that the digital records can be extracted from the record systems that currently store and manage them and be reliably transferred to another system." (UN/CEFACT, 2007) The draft standard states its compatibility with MoReq and ISO 15489.

2.2 Developments in the IT industry

The market for EDRMS is rapidly growing (Cimtech, 2007, p. 81). International companies try to gain market shares by acquisitions (Clarke, 2006) like the takeover of Hummingbird by Open Text for $489 million in 2006 (*Open Text acquires Hummingbird for $489 million*, 2006). A Gartner study from 18 May 2006 (*Open Text leads in ECM Market Share*, 2006) "points out dramatic changes in the ECM industry over the last few years, in particular, market consolidation, and states that about 51 percent of the market, as measured by total software revenue, is held by just four vendors, including Open Text. 'The ECM market is dynamic, marked by technology consolidation, improving software product functionality and performance, and shifting preferences to suites over best-of-breed solutions'". Even the software giant Microsoft seems to move in on the sector with SharePoint 2007. Jeffrey-Cook (2007) points out that the basic version of SharePoint does not yet qualify as proper EDRMS but that it can be developed into an EDRMS that complies with the standards (an example is add-on software from Open Text that makes SharePoint compliant with DOD 5015.2 (*M2 Presswire*, 2007). Stalters (2006) comes to a similar conclusion and declares that "although this move [MOSS 2007] by

Microsoft signals that they are serious about joining the enterprise content management (ECM) market, more work is needed." The current trend seems to move from stand alone EDRMS to more comprehensive or modular business management systems with EDRMS functionality (*M2 Presswire*, 2007). An example of this development is the DOD 5015.2 compliant EDRMS solution by Open Text for the financial management applications of market leader SAP (*Open Text Announces an SAP-Endorsed Business Solution for Records Management*, 18 May 2007). While most organisations are still fighting to capture email and intranet documents, solutions for voicemail, audio and video files as records with automated translation and transcription will be the next frontier for the EDRMS industry (EmTAG, 2007).

2.3 EDRMS standards in the UK

The Public Records Office developed the requirements for ERMS in 1999 (PRO 1999). A second revised version was published in 2002 by the National Archives (TNA 2002). "The Public Record Office (PRO) has developed policies, guidelines and functional requirements which are readily adaptable to circumstances in the private sector" (Cain 2002). Twentyman (2006) describes the impact of the compliance testing both for industry and the National Archives: "As a result, The National Archives' specifications for records management have quickly acquired huge influence, lining the pockets of software suppliers that achieved early certification of their products with TNA standards [...]. Other vendors were soon flocking to the National Archives to certification for their products, hampering the organisation's already over-stretched resources still further [...]". Davis (2005) states that "unsurprisingly as TNA 2002 is a UK standard, the majority of the currently approved solutions come from UK-based vendors." However a Butler Group review (*Records Management in the Public Sector, 2005)* stresses the importance of TNA 2002 approval for international companies: "The respect with which the TNA 2002 standard is held, both for its functionality, and as a necessity for accessing public sector markets, is seen in the fact that there are also approved solutions from two Canadian-based companies - Hummingbird and Open Text - and most recently (July 2007) the approval of solutions from the US companies Vignette and IBM."

Davis (2005) describes the situation in 2005 when TNA announced the end of its compliance test regime in favour of a MoReq2 solution with vendors still waiting for TNA 2002 approval. Davis (2005) claims that "the UK's TNA 2002 is not only the world 'gold standard' for ERMS, by deploying an approved solution shows that the organisation understands what records are and is aware of their value." The compliance testing lies behind the success of TNA 2002 but has created problems for the originating body. "The key strength of TNA 2002 is its testing and compliance regime, which contrasts sharply with MoReq, which lacks such a feature. [...]This

rigorous testing regime has won tremendous respect for the National Archives' standard, but its lack of resources has hampered its ability to complete the job of testing and certification in a timely fashion [...] (*Information Age*, 2006). At the DLM Forum (2004) "the UK National Archives representative described its UK approval organisation, which consists of three full time staff, with over a dozen applications being handled at once, each application using up several dozens of work-days."

2.4 MoReq1

The development of MoReq1 emerged from the DLM Forum which originated from a "resolution on arrangements concerning archives" (Brady, 2005) from the Council of the European Communities in 1991. The European Commission organised the first DLM Forum in Brussels in 1996. An open tender for the drafting of MoReq1 was awarded by the European Commission in 1999 to the private company Cornwell Affiliates plc, UK.

The ownership and management system of MoReq1 is not without problems as the discussion at the DLM-Forum (2004) shows: "the intellectual property of MoReq belongs to the European Commission. If this does not change, DLM Forum will be constrained by the inability of the EC to move quickly and decisively, and will be powerless to make sure that MoReq stays internally consistent and remains a good quality product. [...] We [the DLM Forum] cannot reasonably maintain something which belongs to someone else."

It is important to note that MoReq is a guideline not a standard (Fresko, 2005). Waldron (2003) states that "MoReq takes a major leap forward by not only embracing requirements for good record-keeping of electronic records but the need to also set out the requirements for other electronic document-related functions such as workflow, email, and electronic signatures. Even though developed in Europe, MoReq's guidelines are generic and applicable to businesses anywhere in the world." Kampffmeyer (2007a) states that MoReq1 was used as benchmark in the development of TNA 2002, ReMANO in the Netherlands and NOARK 4 in Norway. MoReq1 has been translated into 12 languages. In the DLM-Forum members meeting (2004) the lack of conformity of these translations was discussed "- for example, some may include the addition of national requirements". Kampffmeyer and Risse (2007) claim that MoReq1 was the most detailed specification for the EDRMS sector in Europe. Hofman (2005, p.24) criticizes that "the current set is still too based upon UK records management practice and needs to be adjusted in order to give it a broader applicability, for instance in Europe". Fresko (2002) mentions that PRO had been "particularly influential" in the drafting process of MoReq1. Cain (2002) evaluates the usefulness of MoReq1 for UK records managers. He repeatedly brings up that the

"excessive length – 128 pages, including 12 pages of annexes – is likely to be a problem" and concludes that "MoReq is simply too long to be a useful evaluation tool for most practical purposes". Cain (2002, p.17) saw MoReq1 as "well designed for teaching purposes" and as a "communication tool" that is useful for "explaining electronic records management issues to IT directors, senior management and other stakeholders […]". Lupprian (2002) states that MoReq1 "is kept so generic, that every user can adapt it to his own traditions and needs." He adds that MoReq1 is detailed enough to be used as a benchmark for the completeness of user developed specifications. Lupprian (2002) reports that MoReq1 was used in the Bavarian State Archives as a benchmark for the development of a metadata catalogue. He observes that the records definition in MoReq1 is static and does not take collaborative workflow or data exchange between institutions into account. "This observation shows the still paper centric view of the digital world" (Lupprian, 2002). Tough and Moss (2003) also criticize the file centric, top down approach of MoReq1 and deduce that "the authors are still locked in a 'file mentalité' rather than one driven by content analysis". On the other hand Rietsch, Chabin and Caprioli (2006, p. 124-126) see several innovative elements in the metadata specifications of MoReq1, for example the metadata inheritance in hierarchical files and hybrid files for electronic and paper records. Waldron (2003) remarks that "MoReq, since it was published in May 2001, has been well received across Europe in the public and private sector". At the DLM-Forum (2004) the missing software compliance testing of MoReq1 and its potential problems are discussed: "There is a lot of demand, from users and from software suppliers, for a MoReq software compliance scheme. "

2.5 MoReq2

MoReq2 was published in February 2008. The British consultancy company Cornwell, that lead the development on MoReq1, won the European Commission contract for drafting MoReq2 (*EC awards €300,000 contract,* 2007) in January 2007. The tender of the European Commission (2006) followed the recommendations of the Scoping Report by the DLM Forum Working Group.

Fanning (2007) outlines the principal aims of the MoReq2 development:

> the European Commission commissioned a project to revise MoReq and update it to include information from ISO 15489; work performed in the archive field by various countries in the European Union; and to ensure compatibility with key standards for metadata and other records management-related issues. Another goal of the revised MoReq is to simplify or improve the user interface to records management applications. This includes reducing the metadata that an end user needs to input for the records management system and simplifying the classification system.

MacFarlane (2006) points out some of the new developments in MoReq2. It allows for national adaptations with a Chapter Zero and also offers optional modules for areas like content management, workflow, case management, e-mail management, and digital rights management. Kampffmeyer and Risse (2007) point out that the modular structure and the country specific Chapter Zero allows for more flexibility that makes the standard better applicable in "diverse environments with different legislation and records management cultures"[2].

A major difference to Moreq1 is the introduction of a regime for compliance testing. Kampffmeyer and Risse (2007) point out the benefits in replacing national standards by Moreq2: EDRMS producers can focus on one European standard instead of taking numerous national standards into account when developing products. Cain (2003) saw the IT industry as "the main beneficiary of an international specification". Archives would profit from "compatibility and long term stability" (Cain, 2003) of the products. Kampffmeyer (2007a) also hopes for falling prices in the future because EDRMS vendors only have to comply with one standard. Kampffmeyer (2007b) remarks that Moreq2 has been very influenced by TNA 2002 so that replacement in the UK would be easy[3].

Veitch (2008) predicts a boost for EDRMS industry sector by MoReq2. He claims that "Moreq2 is expected to change functionality, certification, procurement, auditing and education in the sector". Veitch (2008) quotes an enthusiastic Mark Fresko:

> We're pleased with how it has turned out, Open Text publicly announcing support came as a complete shock as we never lobbied the company. The rest of the leading software companies have supported us through this process, so now it's time for them to put their money where their mouth is [by actively supporting MoReq2]. We have two ex-Soviet bloc countries adopting it as a national standard. It's an international phenomenon and it's already influential in other countries.

Veitch (2008) describes the difficulties of traditional records management in a multi-faceted Enterprise Content Management. "Fresko suggests there is mounting doubt over what exactly constitutes a record. Emails as well as blogs, wikis and other social media can be included, as can voice communications or older, more traditional forms of record such as paper documents, spreadsheets and text files. It all leads to a requirement to save and catalogue far more forms of information." (Veitch, 2008)

[2] Original quote in German, translation by Wilhelm: "Die im MoReq Standard beschriebenen Anforderungen kommen in diversen Umgebungen mit unterschiedlichsten Gesetzgebungen und Records-Management-Kulturen zum Tragen, so dass sie über eine große Flexibilität verfügen müssen, um diesen Ansprüchen gerecht zu werden. Vor diesem Hintergrund wird in MoReq2 eineflexiblere Struktur der Anforderungen geschaffen: zum einen werden nationale Anforderungen in der Spezifikation berücksichtigt, zum anderen wird eine Modularisierung der Anforderungen vorgenommen."

[3] „Zwischen TNA und MoReq wird es dagegen wenig Probleme geben, da MoReq2 sehr von TNA beeinflusst ist"

AIIM Europe supports MoReq2 and Skekkeland (*Compliance-Magazin.de*, 2008), Vice President of AIIM International, expects that "MoReq2 will become one of the most significant records management standards in Europe."[4]

But in summer 2008 there can also be sceptical voices heard: Zöller (Pütter, 2008) from the German IT association VOI is concerned about the compliance test requirements and saw them as a (cost) burden for smaller companies.

2.6 Other EDRMS standards

The standards that are referred to in the literature are predominantly the US DoD 5015.2, European MoReq and British TNA standard. Other national standards are sometimes listed (Kampffmeyer, 2007d) like the EDRMS requirement standards in Canada (RDIMS), New Zealand, South Africa, and Australia (VERS) but no critical comparison of these standards could be found.

2.6.1 USA

DoD 5015.2 was developed on the basis of the "functional requirements for recordkeeping" that were developed in a research project by the University of Pittsburgh that started in 1993 and can be considered one of the first standards for EDRMS (Barry, 1997; Schwalm, 2004).

Besides TNA 2002 the US Department of Defense standard DoD 5015.2 (1997) can be regarded as the only national standard with an international reputation (*Records Management in the Public Sector*, 2005). DoD 5015.2 was initially developed for the use in the Department of Defense but was endorsed by the US National Archives and Records Administration (NARA) for use in all US federal agencies (Gable, 2002). The importance of the standard partly stems from the fact that big international EDRMS vendors are based in North America (Open Text, EMC) and that they market their solutions with DoD 5015.2 compliance. This is underscored by the fact that the Gartner report, which is also used as a marketing tool by these companies, only scrutinizes solutions compliant with DoD 5015.2 (Chin, 2007). While often mentioned in the European literature on the EDRMS subject no deeper evaluation of DoD 5015.2 can be found. For example Waalwijk (2005) states that for the Dutch standard initiative DoD 5015.2 is "too 'American' to be useful, and besides in our view focused too much on software applications and on electronic records only". Clouner and Grey (2007) also see DoD 5015.2 as "not really suitable for use in

[4] Original quote in German, translation by Wilhelm: „Auch Atle Skjekkeland, Vice President, AIIM International und ehemaliger General Secretary des DLM Forums, betont: "Wir erwarten, dass MoReq2 einer der bedeutendsten Records-Management-Standards in Europa wird."

Europe". They make a comparison between ISO 15489 and DoD 5015.2 and conclude that the US standard "is focused on core electronic records management software functionality".

2.6.2 Europe

Many European national state archives have developed and published EDRMS standards (Kampffmeyer, 2007c). Most of them have not found broader recognition outside their countries or language regions. In Germany, Austria, Switzerland and Norway the standards have been developed specifically to meet the requirements of the public administration (Schwalm, 2004). They include more specifications for administrative workflow and case handling than TNA 2002 or MoReq2. The impact of the standards on EDRMS procurement vary from country to country, for example legislation in Norway requires public bodies to use NOARK 4 (1999, the Norwegian EDRMS standard) compliant solutions while on the other hand the Federal State Archives in Germany only have an advisory status and regional (16 Bundesländer) and local public archives are not bound to the DOMEA standard. The French standard NF Z 42-013 (1999) is used both in the private and public sector but applies only "to computer systems using WORM optical disc technology" (Waldron, 2004). The French standard is used as a basis for ISO standard WD 18509 *Electronic archival storage* (not yet published).

Norway

The situation in Norway is of special interest because the new version of the NOARK standard has been developed in parallel to MoReq2 and was published 04 July 2008. Although Norway is not part of the EU Anne Mette Dørum from the National Archives of Norway was a member of the MoReq2 editorial board. NOARK 5 (2008) explicitly refers to MoReq2 and ISO 15489. While taking these standards into account NOARK 5 (2008) was developed to fit Norwegian law, case management and administration traditions and to be compatible with the predecessor standard NOARK 4 (1999). The National Archives of Norway will not adopt MoReq2 but it was an objective in the drafting process to align NOARK 5 to MoReq2 and the core elements are very similar (NOARK 5, 2008, c.3.5). NOARK 5 also states that NOARK 5 is to be considered the official Norwegian version of MoReq2 (NOARK 5, 2008, c. 3.5).[5] One main difference that needs to be taken into account is that NOARK 5 is by law an obligatory compliance standard for the Norwegian public sector.

The hearing in the draft process reveals some interesting statements by the Norwegian stakeholders. The documents of the hearing process including the letters from the reviewers were published on the website of the National Archives. Most of the answers (National Archives of

[5] Original quote, translation by Wilhelm: "Noark 5 er å betrakte som den offisielle, norske versjonen av MoReq2"

Norway, 2007) to the hearing draft version of NOARK 5 focus on specific mandatory requirements like metadata, case management and the compatibility with NOARK 4. Some stakeholders raise the question of national versus international standards. For example the Norwegian EDRMS company Software Innovation (Gudim, 2007) criticizes in its statement the separate national standard ("spesialstandard") and points out that a MoReq2 based solution "would increase the possibilities for Norwegian vendors abroad"[6]. The company also points out that an international standard would open the Norwegian EDRMS market for more "competition/more potential vendors" (Gudim, 2007).

2.6.3 International

The initiative of the International Council on Archives for an international EDRMS standard that is currently developed by the Archives New Zealand has not been reviewed in the European scientific literature. Jackson (2008) describes the project as based on the EDRMS standard of New Zealand which "is a simplified version of the European Union MoReq standard" and not a mandatory compliance standard.

3 Text comparison of TNA 2002 with MoReq2

3.1 Methodology for the text comparison

The comparison of the two standards is carried out in the hermeneutic tradition. This method guarantees an open minded examination with a focus on the texts. The text comparison is facilitated by the fact that the master version of MoReq2 is written and published in English. The aim of the text comparison is to give a clear overview of the similarities and differences of the two standards.

A second methodological layer will be the interpretation of the differences from an organisational stance. Where appropriate, considerations of the requirements from the perspective of a user in a generic European organisation will be included. This view point should also highlight potential benefits and problems of moving from TNA 2002 to MoReq2.

[6] Original quote, translation by Wilhelm: "NOARK-5 kontra internasjonale standarder. Det er positivt at man i utkast til NOARK-5 har koordinert krav med internasjonale standarder. Men vi syns ikke det er tilstrekkelig begrunnet hvorfor man ikke bare bygger NOARK-5 kjernen på MOREQ –med de nødvendige tillegg og unntak som en mener er nødvendig for å ta hensyn til norsk spesifikk lovgivning, tradisjon og behov. Høringsutkastet påpeker jo selv at MOREQ åpner for dette. Med en slik strategi ville man kunne oppnå en videreutvikling av standarden på internasjonalt nivå, og man ville åpnet for større konkurranse/flere mulige leverandører til det norske "NOARK-markedet". Samtidig tror vi at en MOREQ basert løsning (evt med fornuftige utvidelser) også ville øke mulighetene for norske leverandører i utlandet. Her har vi som mangeårig leverandør av denne type systemer utenfor Norge praktisk erfaring. En "spesialstandard" fra Norge har ikke de samme muligheter."

3.2 The National Archives' publications

The comparison is based on the standards and drafts published on the web as of 01 August 2008. While the core specifications of TNA 2002 were published in 2002 the *optional module B.4* was only published in 2005. It is peculiar why the TNA 2002 *Reference document* needed a revision in 2007 after the end of the compliance regime was already announced in 2004. The explanation given in the foreword is not totally convincing: "The document was first published in 2002 but with the closure of the related software testing scheme in August 2006 an opportunity has been taken to revise and extend the Reference Document." (National Archives, 2007, p.6). Another odd parallel to MoReq2's development is the publication of the consultation draft of TNA's XLM schema in 2007 and in a revised version in February 2008 (National Archives, 2008a). The announcement made on TNA's website concerning TNA's position to EDRMS standards (National Archives, 2008b) is half-hearted. It begins with general doubts about the usefulness of EDRMS, then describes the role of TNA in the DLM-Forum and the MoReq2 review group to conclude:

> Because of our position on the wider role of EDRM systems in meeting the needs of public sector records management, The National Archives does not expect to mandate the use of the final version of the standard in the UK public sector. We recognise, however, that previous standards such as TNA2002, MoReq and indeed US DoD 5015.2 have been helpful to users and vendors, and we would acknowledge that there is the potential for MoReq2 to be applied by these organisations in order to assist with the procurement and implementation of records management systems. (National Archives, 2008b).

This position looks even more awkward when seen in the light of previous statements on the TNA website which were more enthusiastic about the development of MoReq2 (National Archives, 2008c). And on the web site of TNA's Records Management Advisory Service (National Archives, 2008d) the following statement can be found in August 2008: "Collaboration with the Document Lifecycle Management (DLM) to develop the revision of the EU Model Requirements (Moreq2), which, drawing heavily on the 2002 Functional Requirements, is intended to supersede this standard."

3.3 Length and terminology

The most obvious difference is the length of the standards. The functional requirements of TNA 2002 including optional modules and the reference and implementation parts amount to 148 pages (in the PDF version) and approximately 46900 words. MoReq2 in comparison musters 241 pages (in the PDF version) and 73900 words. The metadata annexes show a similar proportion: 35 pages and 9300 words for TNA 2002, 92 pages and 18000 words for MoReq2. The increase

in volume is considerable but the presentation and layout of MoReq2 in one volume makes it appear bulkier than it really is.

Both standards refer to ISO 15489 in their terminology definitions and both standards use the concept of record versus document as a basis which is not directly translatable to several other European languages (e.g. Romanic languages, German). Both standards also make a clear distinction between ERMS and EDMS and only treat the latter in the optional modules. The key terminology is nearly the same in both standards. MoReq2 uses “disposition”, the same term that is used in ISO 15489 (2001, c.3.9) instead of “disposal” (TNA 2002). The phrasing of definitions often is strikingly similar. A difference in terminology with the potential for confusion is the term “folder” (National Archives, 2002c, p. 10) which in MoReq2 is called “file” (MoReq2, 2008a, c. 3) as well as “part” (National Archives, 2002c, p. 10) that changes to “volume” (MoReq2, 2008a, c. 3).

3.4 Level of detail

MoReq2 is clear and very descriptive in its language. Its definitions are well formulated and can be easily used for binary compliance testing. The introductions at the beginning of each chapter and sub chapter are helpful in explaining the context and terminology but of course also add to the word count and can be perceived as a distraction from the core definitions.

A random example of the differences in the level of detail is the requirements for storage back-up. TNA 2002 summarizes the requirements under “Disaster recovery“(National Archives, 2002a, c.A9.11-9.17) and six points are sufficient to treat the subject. On the other hand MoReq2 gives an introduction in the chapters “4.3 Backup and Recovery” and “4.4 Vital Records” which treat the subject of back-up. MoReq2 explains that back-up might also be carried out outside the ERMS: “Regular automated backup and recovery can be provided by the ERMS, by integration with the services of an Electronic Document Management System (EDMS), by a database management system operating with the ERMS, or by some other software.” (MoReq2, 2008a, c. 4.3). This introduction shows the different options but does not really add clarity. The definitions themselves are very similar, sometimes nearly identical (MoReq2, 2008a, c.4.3.2 and TNA 2002a, c. A9.13 for example). MoReq2 goes beyond the requirements of TNA 2002 in prescribing separate back-up operations for all data and vital records. Several sentences explain how a full back-up restoration should be carried out. In the end MoReq2 needs more than four times as many words as TNA 2002 to define back-up methods (word count 216 (TNA 2002) compared with 916 (MoReq2). The motivation for the separate back-up procedure for vital records that could lead to considerable extra IT effort remains unclear.

The meticulous prescription of ERMS functions can be seen in another example of MoReq2. In the non-functional requirements there is an extra chapter on “ease of use” (MoReq2, 2008a, c. 11.1) with definitions that can be tested. If the introduction itself is user friendly and helpful is questionable: “When considering non-functional requirements in developing an ERMS specification, these must include the degree of ease of use required, and how it is to be specified. This will depend on the kinds of user for whom the system is intended, and the amount of training that is to be undertaken. Examples of requirements for ease of use are listed below” (MoReq2, 2008a, c. 11.1). The following definitions include points like “The online help in the ERMS should be context-sensitive” (MoReq2, 2008a, c. 11.1.4). These points appear to be more a wish list to software developers than definitions of a core ERMS. The number of desirable and mandatory requirements sometimes makes it more difficult to attain an overview of important features. The definitions are not wrong in themselves, for example 11.1.16 “The ERMS should allow users to select sound and volume of audio alerts, and to save modifications into their user profile” or 11.1.29 “The ERMS should provide help which provides visual guidance” but they can hide points that are more relevant (to organisational use) like the possibility to “copy records from the ERMS into other working environments, such as a ‘desktop’ folder, using ‘drag and drop’, without this action resulting in any change to the record or its metadata” (MoReq2, 2008a, c. 11.1.29).

The differences in terminology and language are minor and language wise MoReq2 can be seen as a more detailed upgrade of TNA 2002 with more clarity, definitions, and background but on the other hand also more prescriptive descriptions and length.

3.5 Classification

One of the biggest content differences between TNA 2002 and MoReq2 is the classification. Whereas TNA 2002 prescribed a clear hierarchy in the classification and a mandatory attribution of a record to a folder MoReq2 gives more choice in the structure and allows records to be directly attributed to a class. The direct attribution of a record to a class is a considerable breach of the classification concept of TNA 2002 that follows a classic approach that evolved from paper archives traditions. The folder is an important organisational unit for the records management with TNA 2002 because metadata and life cycle management including disposal is managed at that level. MoReq2 gives users the choice if they want to keep to the traditional folder approach or go for a direct records registration in the class. The later would entail changes in the management of metadata and life cycle either at records level or class level. The direct registration of a record to a class might prove useful for fully automatic bulk registration of electronic records (for instance for financial companies with strict legal requirements).

Another novelty of MoReq2 is the mandatory requirement of sub-files. Users are familiar with sub-files in Microsoft Windows Explorer and some organisations might have (electronic) archives with sub-files structures. In TNA 2002 the lowest level is a file in a folder. MoReq2 attempts to explain the need for sub-files in the introduction (MoReq2, 2008a, p.16). The general necessity to make sub-files a mandatory requirement is not really convincing. On the other hand it certainly adds more flexibility to the standards but at what IT costs is hard to determine.

3.6 Search and display

The definitions of the search in TNA 2002 and MoReq2 are similar. MoReq2 includes more mandatory requirements. For example in TNA 2002 a Boolean search was highly desirable while in MoReq2 it is mandatory to have the basic Boolean operators. MoReq2 also indicates the ISO thesaurus standards which should be used if a thesaurus is incorporated (MoReq2, 2008a, c.8.1.17). MoReq2 adds more details to the definitions of search results for example relevance ranking (MoReq2, 2008a, c.8.1.31). But it does not include for example the highlighting of the searched word in the display of the full text.

An example for the descriptive style of MoReq2 is the desirable specifications for natural language in the time interval definition:

> The ERMS should allow the use of time intervals specified either as dates (e.g. 24 Dec 2008 – 5 Jan 2009) or in natural language, e.g. “last week”, “this month”, as search terms, allowing the use of at least the following words and/or their equivalents in other languages:
>
> - last;
> - this;
> - next;
> - week;
> - month;
> - quarter;
> - year;
> - names of days of the week;
> - names of months.(MoReq2, 2008a, c.8.1.29)

The requirements for partial match and wild card are described with examples in MoReq2 including truncation at the beginning of the word. MoReq2 is more specific in its definitions than TNA 2002. MoReq2 also regulates more aspects than TNA 2002 like the time definitions mentioned above or the display of search results.

> The ERMS should allow users or administrative roles to configure display of the search results, including:
>
> - • the order in which the search results are presented;

- • the number of hits displayed on the screen per view from the search;
- • the maximum number of hits for a search;
- • which metadata elements are displayed in search result lists. (MoReq2, 2008a, c.8.1.30)

MoReq2 has a tendency to define in detail also elements that might be nice to have but which are not essential.

3.7 Retention and disposal

The requirements in both standards are very similar and some definitions are nearly the same like the import and export of disposal schedules (TNA 2002a, c.A4.6; MoReq2, 2008a, c.5.1.9). MoReq2 adds more detailed options to the disposal requirements. For instance TNA 2002 demands the following disposal actions: “review, export, transfer, destruction” (TNA 2002a, c.A4.12) while MoReq2 is more specific “retain permanently, present for review, destroy automatically, destroy after authorisation from an administrative role, transfer to an archive or another repository”(MoReq2, 2008a, c.5.1.25). MoReq2 grants the option to set different retention periods for records in a file (MoReq2, 2008a, c.3.3).

3.8 Life cycle model

Both TNA 2002 and MoReq2 follow a traditional life-cycle model compared to the more modern approach of the records continuum model. Both standards do not explicitly endorse a model but the provisions made for records capture, retention and disposal make it clear that the standards use the life cycle model as a basis. One reason is that they adhere to a strict separation between ERMS and EDMS (document management is only treated in the optional modules) which in the electronic environment in many organization and many EDRMS software products has become far less distinct.

3.9 Metadata

The number of defined metadata is much higher in MoReq2 than in TNA 2002. The size of the metadata annexes (TNA 2002: 31 pages; MoReq2: 90 pages) is slightly misleading because TNA 2002 does not treat all metadata definitions in its annex and MoReq2 creates a separate definition for each metadata segment. For example TNA 2002 gives one definition for record type (National Archives, 2002b, c. 8) whereas MoReq2 needs four definitions (splitting the metadata up into four elements: “abstract, title, system identifier, retention & disposition schedule” (MoReq2, 2008b, c.M029, M028, M027; M087). In this example the definitions by MoReq2 are clearer and can easily be checked in a binary mode. On the other hand for the organisational user the TNA 2002 metadata annex is easier to browse because it focuses on 17 key aspects. The

structure of the MoReq2 metadata annex seems to aim more at software developers and the compliance test regime than to users in an organisation.

A new desirable requirement in MoReq2 is that "[t]he ERMS should be able to export records and their metadata in the form of a Dissemination Information Package as defined in Appendix 7 of the OAIS standard, ISO 14721" (MoReq2, 2008a, c.11.7.12. and c.5.3.4). This definition seems rather ambitious for instance in the light of the report *Assessment of UKDA and TNA compliance with OAIS and METS standards* (Beedham, H. et al., 2005) that shows a number of problems when trying to match ERMS data to ISO 14721.

3.10 Access control

Access control of MoReq2 follows the spirit of TNA 2002. Many descriptions are very similar but MoReq2 is more exhaustive. It gives a narrative introduction which can be understood as a general guideline to the subject, for example explaining that access rights should be attributed to roles and not individuals (MoReq2, 2008a, c.4.1). MoReq2 is also more specific in its definitions (especially c.4.1.23 gives four specific options and explanations). The scope here seems to attempt to cover all contingencies. The chapter on Access Control is an example of the attempted scope of MoReq2. It follows concept and language wise in the steps of TNA 2002 but adds extensively guidance, specifications and explanations. And it also describes in detail provisions for ERMS usage that is not common like the display of inaccessible objects (MoReq2, 2008a, c.4.1.23). On the one hand it adds clarity by giving more details and specifications but on the other hand leads to more complexity and less user friendliness.

Table 1 Access control definitions for search results

MoReq2 (2008a)	TNA 2002 (National Archives, 2002a)
4.1.22 If a user performs any search that includes content searching (typically, but not necessarily, a full text search or free text search), the ERMS must not include in the result list any record for which the user does not have the permissions to access.	A.5.51 (HD) The ERMS should include a configuration option which defines the behaviour of the access control mechanism so that: either a user who is not allowed access to a class, folder or record can never find out that it exists by means of the ERMS (i.e. the user can never see its metadata, in a search result list or at any other time) or a user who is not allowed access to an class, folder or record can find out that it exists by means of the ERMS (i.e. the

	user can see its metadata in a search result list) even though the user cannot access the contents of the record.
This requirement is needed to prevent users employing text searches to investigate the contents of documents to which they are not allowed access.	A.5.52 (M) The ERMS must ensure that a user who is not allowed access to an electronic record or folder cannot receive any information about the record or folder as a result of a full-text search on record content, which that user would not receive through searching on metadata.
4.1.23 If a user requests access to, navigates to, or searches for, without searching for content, any object such as a record, volume, sub-file, file or class which the user does not have the permission to access, the ERMS must provide one of the following responses (the response to be selected at system configuration or at a later time): • provide no information about the object, thus providing no indication of whether the object does or does not exist; • confirm the existence and (optionally) the owner of the object (display its file or record identifier) but not its title or other metadata. • display title, type of entity (class, record etc.), date of creation and owner only; • display title and other metadata of the object.	
The option in the first bullet of this requirement specifies the same outcome as for content searches (see 4.1.22). The other three options intentionally offer other possibilities, appropriate in some organisations; they are shown here in order of decreasing security. They should be configured by administrative roles.	
This requirement applies only to access attempts that do not involve searching on record content. Searches on record content are addressed in 4.1.22, with which this requirement should be read.	
4.1.24 The ERMS should allow the responses specified in 4.1.23 to be selected for a class	

as an alternative to a system-wide setting at configuration time or later.	

3.11 Print and scan functions

Print out

While TNA 2002 mentions printing only three times and prescribes that the records stored should be printable MoReq2 dedicates a whole chapter (MoReq2, 2002a, c.8.3) with 19 definitions to specific print issues. Most of the definitions are mandatory. It can be questioned if the number of mandatory details is really necessary especially when export functions to other application for instance for the classification are also mandatory. TNA 2002 prescribes only the basic requirements whereas MoReq2 appears to try to cover all possibilities.

Scanning

MoReq2 prescribes in the core module the basic requirements for scanning software. TNA 2002 just describes that scanned images can be captured (National Archives, 2002a, c.A2.1, c.A9.8). Where TNA 2002 defined too little, MoReq2 goes to the other extreme. On three pages MoReq2 (2008a, c. 6.5) tries to cover the general features of a common scanning product. Even though the introduction points out that these requirements only apply to fully integrated ERMS the placement in the core module makes it quite authoritative. Some of the definitions cover common basic ERMS scan requirements like OCR (MoReq2, 2002a, c. 6.5.8) while other desirable requirements prescribe details like thumbnail images (MoReq2, 2002a, c.6.5.22).

The scanning needs of organisations vary tremendously from a few pages a day to thousands of pages per minute. The format types can also vary considerable depending on the organisation and sector (e.g. engineering, architects). And there are popular ERMS products on the market like Meridio which do not offer an integral scanning option. A requirements recommendation in the annex would probably have been more appropriate than making a dozen mandatory requirements in the core area.

3.12 Optional modules

All the optional modules of TNA 2002 are taken up by MoReq2. The optional modules are included in the main text of MoReq2 which is one of the reasons why the standard has become quite bulky. The requirements of the optional modules can also be part of the test framework of MoReq2.

The MoReq2 definitions are often more detailed than six years before. For example MoReq2 gives an introductory explanation of one page that describes the technological and legal basis for the definitions. Many of the TNA 2002 definitions are only slightly rephrased. One novelty is the provisions made for the capture of metadata from electronic signatures in email. MoReq2 also addresses in more detail distributed, offline and remote work modes which have become common place in organisations in the last years.

Many of the optional modules treat features of modern EDRMS usage for example electronic signatures and encryption. While some areas might be easily definable like fax integration other areas like workflow and case management can only be addressed in a general basic way. Workflow and case management definitions in TNA 2002 were published in a separate document and the National Archives explicitly states that "[i]t is not intended to form a part of any future generic functional requirements testing by TNA." (National Archives, 2002d). MoReq2 (2008a, c.10.4, c.10.5) definitions draw heavily from the TNA 2002's. Many phrases are very similar. But TNA 2002 focussed on the British public sector. If workflow and case management that varies so much from organisation, sector and country should be defined in a European compliance standard that appeals to public and private sector alike could be put to discussion. The user in an organisation should primarily focus on the specific needs and scrutinize the products accordingly. The MoReq2 definitions of workflow and case management can certainly form valuable background information but to create an (optional) compliance threshold for these features seems rather ambitious. There is a certain danger that this might create a blind trust of users in the compliance seal without them properly scrutinizing their needs and software options. The IT market is developing fast in this area so that a compliance standard might exclude innovative software. Workflow and case management should rather be left to national adoptions because the main differences of for example DOMEA or NOARK to MoReq2 lie in that area.

3.13 XML Schema

The XML schema of MoReq2 is one if not the biggest improvement to TNA 2002. With the help of this schema the export and import of records and their metadata between ERMS should be enabled and standardized. The importance of data exchange and migration has risen since 2002 because of the growing dependency on electronic records and databases in general and more data exchange inside and between organisations. At the moment (August 2008) only a draft version of the XML schema is available and the (technological) consequences cannot be assessed. The draft version reflects the wide scope and the level of detail of the functional and metadata requirements.

3.14 Limitations of the text comparison

Only general organisational considerations were made. Each organisation depending on its sector, size, legal requirements, and existing software would evaluate an EDRMS standard differently.

An in depth scrutiny of the technical requirements by independent EDRMS software experts would be interesting. Special IT knowledge is needed to scrutinize the technical implications of some requirements and to determine how difficult and expensive it would be to create compliant software for these points. The same is even truer for the test framework. But if the introductory survey on the official MoReq2-Serco website by Project-Consult concludes that ”test framework of MoReq2 is very complex” and ”[d]ue to the complexity the test performance is very time consuming” (Project-Consult, 2008, p. 10) then one must assume that MoReq2 penchant for regulating details persists in the test framework. Expert knowledge from existing EDRMS compliance test authorities would be needed to evaluate exactly the practicality and usefulness of the MoReq2 test framework.

A table mapping the TNA requirements to MoReq2 was not completed because it would have been influenced by personal interpretation and would not have shown the level of congruence of related requirements. The mapping would need to be carried out by the National Archives to be authoritative.

TNA 2002 (National Archives, 2002a, c.A.10) lists several UK national standards with which the ERMS must comply or support compliance. In the given framework no research could be carried out if this standards’ compliance would change with MoReq2.

3.15 Conclusion of the text comparison

MoReq2 is in the tradition of TNA 2002. Language and style are often very similar. The key concepts of ERMS are the same. MoReq2 can be seen as an evolution of TNA 2002 that for good or bad defines more requirements in a more detailed way. MoReq2 embraces technological changes and allows for different classification methods. The main point of criticism is the scope and length of the standard. It encompasses a variety of potential requirements that might only apply to certain sectors or organisations. It also adds to the length of the standard that long introductions, explanations and the optional modules are included in the core document.

On the whole MoReq2 would certainly be a state of the art replacement of TNA 2002.

4 Interview with key stakeholders

4.1 Methodology for the interviews

The choice of methodology is clearly qualitative. For the aim of determining the benefits of a European EDRMS standard the qualitative method is seen as the most valuable research method. A number of reasons can be given for this choice:

- the aim is to unravel different national, cultural, and economical view points
- the research should reveal previously not described problems or benefits in the standards' texts and compliance regimes
- the number of well informed persons who can contribute is very low
- the European EDRMS model MoReq2 was only published in February 2008
- the procedures for software compliance testing are still under development in summer 2008

A quantitative survey of the reactions to the European standard MoReq2 is not yet worthwhile because of the short time that has elapsed since the publication. There has not yet been any broad implementation with organisations and EDRMS vendors who could answer to a quantifiable questionnaire. Few people know about EDRMS standards and the recently drafted MoReq2. Those having knowledge of the standard are usually involved in drafting or applying these standards and are expected to have partisan opinions. The information gathered has to be carefully evaluated and categorized to show the potential bias of the interview partners. The sample for quantitative study would be too low and the interests of the different stakeholders cannot be adequately analysed by the quantitative method. Furthermore no clear "theoretical framework" (Pickard, 2007, p.18) suitable for the development of a hypothesis had emerged at the beginning of the research. The qualitative method allows for an inductive approach and snowball sampling that might lead to unexpected information and angles of the research topic. To discover the different opinions of the EDRMS stakeholders and gain additional, not yet published information on EDRMS standards the open approach of qualitative interviews was deemed best.

The aim, stated in the dissertation proposal, was to carry out interviews with at least one representative of the key stakeholders:

- MoReq draft consultancy company (Cornwell Management Consultants plc which was acquired by Serco in 2007)
- MoReq Editorial board members
- MoReq review panellists
- UK Nationals Archives
- British RM organisations
- EDRMS vendors (UK, international – option for written email questions)
- If valuable and accessible EDRMS consultancy companies in the UK and an official from the European Commission

In the given time frame about a dozen interviews seemed manageable. The aim was to find interview partners that agree to non-anonymous, quotable interviews but considering potential political or economical interests anonymity and the confirmation of quotations would be granted. Other ethical problems were not expected during research because those who consent to interviews are well aware of the topic and context of the dissertation. The interview partners were informed in writing and orally about the ethical research guidelines of Northumbria University. They were briefed on the taping of the conversation and that all potential quotations would be sent in a draft version to them for approval.

The willingness to discuss the questions was high. The chief editor of MoReq2, Marc Fresko from Serco, agreed to be interviewed as well as five out of eight MoReq2 editorial panellists. This is a very good result considering the work schedule of these experts. To reach EDRMS specialist, user and vendor stakeholders the list of *MoReq2 panellists* (2008) was scrutinized. 22 panellists, who fitted the categories of key stakeholder as defined above, were addressed of whom 13 replied. Some did not reply themselves but forwarded the request to experts in their organisations. All in all 17 approved interviews and one email contributions were included in this dissertation. Dørum commented only on the situation in Norway by email. Many interviewees were extremely helpful and provided the author of this dissertation with contacts or background documents. The snowball sampling of the qualitative method both on the level of contacts and information worked well. Relying on persons that in one way or another contributed to MoReq2 could be considered a biased selection. But the matter of EDRMS standards is so complicated that easy one-dimensional answers and partisan opinions should not dominate. Nearly all interviewees approved their contribution with their name and professional affiliation, only one asked for anonymity. A reference list of biographical details can be found at the end of

the dissertation. The reader should be aware of the potential professional interests of the interview partner. The use of the panellists' list had also practical reasons. In the given time and word frame the aim was to carry out a dozen interviews. The review list was a good starting point because one could assume that the persons have knowledge and might have interest in contributing to research in the field. The return rate proves this assumption.

All interviews were taped and key points noted in writing. The list of questions was used during the interview to check and focus the discussion. Nearly all interviews were carried out by telephone due to the geographical distribution of the interview partners and the geographical remoteness (Denmark) of the interviewer. Nonetheless most interviewees quickly grew warm with the telephone situation and elaborated quite freely. The time of the interviews varied between 25 minutes and one hour.

The questions shown in Annex 1 have been carefully drafted to avoid any bias and allow for open reflection and answers. These written questions were sent together with the dissertation proposal, the ethics form of Northumbria University, and the invitation by email to the potential interview partners. The sending of the questions and information on the dissertation beforehand proved to be valuable because it showed potential interview partners the seriousness and trustworthiness of the researcher and enabled them to reflect on the questions. Few people can ad hoc elaborate on EDRMS standards and the possibility to reflect on written open questions reduced the risk of influencing by the interviewer. After the first few interviews additional questions emerged which were then added. These questions addressed

a) the scope and length of MoReq2

b) the classification

c) the future in the EDRMS standards field or the personal vision for the next standard.

4.1.1 Methodological limitations

It is difficult to find interview partners that are not in one way or other professionally involved with creating or using standards. This extends to the scientists at universities who often are panellists or advisors to standard bodies. The consultancy companies may profit from the fact that there is no standard or that there is a very complicated standard. With more time more neutral candidates might have been found. In this case the snowball effect of previously interviewed persons could blemish the neutrality. The number of interviews had to be limited given the time frame. It is probable that an extension of the number of interviewees would have led to one or the other additional insight. The interview partners were chosen with respect to the

focus on TNA 2002 and MoReq2. With the information gained in the interviews it could be very interesting to investigate the EDRMS standards situation in Eastern Europe and the states of the former Soviet Union.

One technical limitation was the use of the telephone. In a pan-European research the telephone is inevitable but naturally the conversation is often not as long as in personal interviews and less chatty meaning less information is given unintentionally. A personal interview creates more room for small talk or diverging discussion that leads to new points. On the other hand one could argue that telephone interviews are more impartial and that the analysis is easier because telephone interviews have less conversational diversion and gaps.

Another limitation lies in the recent date of the MoReq2 publication. This means that while writing the dissertation the situation and opinions in European countries are changing. But not only discussion, conferences and translations of MoReq2 are currently taking place but the compliance process for MoReq2 is still under development. While this limitation holds true for the whole dissertation it should especially be kept in mind with the interviews because of the different information access of the interview partners.

4.2 Analysis of the interview data

The structure of the analysis is derived from the list of questions (see Annex) that was put to the interview partners. Not all interview questions provided rich, valuable answers. A few main points of the discussions crystallized that are reflected in the sub chapters.

When directly asked about shortcomings of MoReq2 few interviewees brought up content elements but many criticized the scope and especially the length of MoReq2. Few examples of problematic or erroneous standards definitions were given. Some topics like the length of the standard had not been considered beforehand as a question but quickly were taken up in the question catalogue.

The interviews provided rich qualitative data. On the limited basis of 18 interviews there is a wide variety of opinions. The broad range of opinions can be seen as a confirmation of the chosen methodology. It is also a snapshot of the different levels and pieces of information available in summer 2008 to different stakeholders.

I want to point out that some of the interviewees stressed that their view is a personal one and not necessarily their employer’s.

4.2.1 Standards in general

Most interview partners agreed on the usefulness of standards. Several interviewees (e.g. Fresko, 2008a; Blake, 2008) regarded standards as necessary for the development of appropriate software in the 1990s. According to Fresko (2008a) it was important to explain the concept of records management to the software vendors because the first products in the field were "rubbish". John (2008) stated that standards can facilitate software development and also increase user acceptance of standard compliant products. Guercio (2008) claimed that standards are vital for quality control.

Kampffmeyer (2008a) pointed out the following advantages for the end users: more comparable products in the market, higher compatibility even in the case of standards migration and less work in drafting procurement specifications. Kampffmeyer (2008a) saw the advantages of a European EDRMS standard especially for the European companies who would not need national adaptations of their products anymore.

Chabin (2008) explained the necessity of standards with technical and organisational reasons. According to Chabin (2008) standards enable the exchange of electronic data and the compatibility between users as well as the organisation of information.

Joerling (2008) gave a number of advantages: "standards are essential tools helping today's businesses stay innovative, reduce costs, improve quality, and market their products or services. Standards break down barriers to trade, provide industry stability and encourage commerce."

Blake (2008), Meatyard (2008) and Foscarini (2008) saw a danger that users do not scrutinize their own needs, contexts and infrastructure sufficiently but rather rely on the standards definition which might not be the best solution for their specific problems. Blake (2008) and Meatyard (2008) claimed that a number of EDRMS projects failed because end user demands focussed on TNA 2002 without understanding or defining their needs or intention behind the standard's content. Foscarini (2008) criticized the standards as too focused on an engineering approach. In her opinion the standards should encompass the problems of human interaction and implementation. Foscarini (2008) gave as an example of the different records management cultures that are not reflected in international standards by mentioning the dichotomy of record and document which does not easily translate into other languages and traditions.

4.2.2 MoReq2

Several interviewees like Helm (2008) valued MoReq2 as a very good, comprehensive and modern standard. Joerling stated that "MoReq2 seems to be more generic in its approach to managing electronic records, and is usable in all size organizations, public or private."

John (2008) saw points for discussion in the data exchange definition after OAIS in MoReq2 and the XML scheme although it is not yet published in its final version. On the whole John (2008) valued MoReq2 as a comprehensive catalogue of criteria that has the potential to become a de facto standard in the private sector.

Several interviewees criticized the drafting process for lacking transparency and lack of feed back to contributors. John (2008) drew up a more differentiated picture. He also missed comprehensible comments to the panellists' input but pointed out that vendors and users could at least participate which is not always the case in standards drafting processes.

Jones (2008) explained the lack of comments by the time constraints and available resources. He compared the process with the drafting of ISO 15489 which took three years (one year for MoReq2). The constraints were bigger in MoReq2 because a single company had to produce it in a given time frame. But Jones (2008) could understand the desire for more transparency because no responses were given to rejected user ideas.

Fresko (2008a) pointed out that there had been 5000 review entries and with the given budget, resources and schedule the drafting team was unable to comment individual suggestions.

Several interviewees indicated a potential conflict of interest with the MoReq2 editors. The participation of private consultancies in the drafting process was also criticized. The web site hosting of MoReq2[7] by the private company Serco can be seen as a sign of conflicting interests.

Meatyard (2008) lauded MoReq2 for breaking with paper archives traditions in the specification of the classification.

Duranti (2008) questioned some aspects of MoReq2, such as the use of the OAIS standard as a basis for EDRMS, being a standard focused on preservation, rather than on recordkeeping. She also argued that the authenticity requirements are not sufficient. She explained the difficulty of drafting requirements like MoReq2, which must be consistent with other existing standards (e.g. the records management ISO standard) that are at the same time under revision.

[7] http://www.moreq2.eu/

Several interviewees (Horsman, 2008; Anonymous2, 2008; Foscarini, 2008) favoured national compliance standards with a smaller scope fit for specific purposes and traditions. Horsman (2008) added that "of course these standards can use MoReq2 as a reference model".

4.2.3 MoReq2's scope and length

"It is too long" (expressed by several interviewees).

The main and most common point of criticism was the length of the standard. Many interview partners criticized the sheer size of the standard. It is "far more extensive than DoD" (Blake, 2008) and considerably longer than TNA 2002 that itself had been criticized for its length when it was published. Fresko pointed out that considering the word count (MoReq2: 91500 to TNA 2002: 63000) MoReq2 is less than 50% longer than TNA 2002. He defended the length by explaining that removing any requirements would introduce a risk for insufficient software. He gave as an example the requirement to print out search results and asked if one could do without it. "Some people would say it is obvious that there is no need to say that but then again some people make software that cannot print properly" (Fresko, 2008a). Fresko (2008a) explained that the length stems less from the content but from the need to describe requirements in an unambiguous language. According to Fresko (2008a) "this is necessary to allow for the testing and to make the standard generic and applicable to all public and private sectors".

Lövblad (2008) indicated that the length of the standard encumbers its use in procurement and practical use. Some interviewees like Chabin (2008) not only criticized the length of the standard but the number of mandatory requirements put to compliance testing.

The opinion that MoReq2 is too lengthy paradoxically was often not reflected in the opinions about the scope of standard. John (2008) used the German saying of "two hearts beat in my chest"[8] to explain his point of view that oscillated between the advantages and disadvantages of the broad scope and prescriptive definitions. Several interviewees appreciated the scope of the standard but could see at the same time that the conciseness of the core requirements is weakened by all the additional points.

Jones (2008) gave a balanced opinion on the scope and length of MoReq2. He dismissed the length criticism as "slightly unfair". He conceded that it is "a very long document" but pointed out that the impression "depends on what the intended use of the document" is. Jones (2008) argued that would it be shorter, there would be criticism that it is "not comprehensive". Like

[8] Original quote „Zwei Herzen schlagen in meiner Brust" meaning that one is torn between two equally worthy interests or feelings.

with other technical specifications or standards it “is not intended to be read in its entirety” (Jones, 2008) but its various parts can be used at different stages of a process.

Helm (2008) also did not think that MoReq2 is too long or overly regulative and mentioned that it is a European compromise. But in fact advanced technologies need to be used to prevent getting the user exposed to the complexity (Helm, 2008).

Horsman (2008) would have preferred a standard that focuses on the core records management areas and is more concise. He also criticized the limited approach of MoReq2 on records management applications. In his opinion more and more users turn to software with add-on records management features and these EDRMS software add-ons to applications are not properly covered by MoReq2.

An anonymous software vendor (Anonymous2, 2008) and Meatyard (2008) criticized the too academic and very prescriptive style. Meatyard (2008) found the level of detail in the functional description highly unusual for a software standard and thought it is detrimental to innovation. According to Meatyard (2008) vendors and users should have a broader choice in reaching the desired results. Lövblad (2008) thought that the editors aimed too high in their desire to encompass all possible areas. Instead they should have concentrated on the core functions without prescribing all technical details.

Gibney (2008) pointed out that MoReq2 includes its descriptive rationale in the main part and therefore appears bulkier than TNA 2002 which published the rationale separately.

No interviewee mentioned important EDRMS related areas that were not but should have been covered by MoReq2.

4.2.4 MoReq2’s optional modules

Guercio (2008) emphasized the usefulness of the optional modules for the development or improvement of software. Kampffmeyer (2008a) thought that the optional modules are of interest to vendors because these features would give their software products an additional selling point. In his opinion the “optional modules are very important, because they extend the scope from traditional records management to a broader understanding of the complete lifecycle of records including workflow, electronic signature, document management, electronic archival and other features” (Kampffmeyer, 2008a) . Kampffmeyer (2008a) saw the special value of MoReq2 in the enhanced perception of records management as integral part of any information system.

Jones (2008) and Meatyard (2008) did not see the need to define case management as an important part of an EDRMS because other software might be more suited to this task. Jones (2008) saw a danger that the presence of the case management option in the standard creates an expectation with end users that all EDRMS should have one. In Meatyard's (2008) opinion case management is too client and sector specific to be regulated by a standard.

Chabin (2008) recommended publishing the core mandatory requirements of the standard and the optional modules in separate volumes. Chabin (2008) saw a risk that users are confused with the scope of the optional modules.

4.2.5 MoReq2's classification

The Italian and the French interview partners strongly advocated the obligatory hierarchical classification of records against suggestions that it could be possible to do without such requirement, due to the easy retrieval provided by technology. Indeed, all agreed that the classification is not essential anymore for retrieving records, but the Italian interview partners (Guercio, 2008; Duranti, 2008; Foscarini, 2008) argued that classification is necessary to determine and demonstrate the context of a record. Chabin (2008) added that the context is needed to determine the retention period.

Fresko (2008a) explained that the option to have records in a class without a file is a necessary function "for some large businesses". Foscarini (2008) and Blake (2008) found this feature problematic as it creates the potential for unmanageable volumes.

Fresko (2008a) stated that the requirements for the import of a classification scheme are much more definitive and solid in MoReq2 than in TNA 2002.

One software vendor (Anonymous2, 2008) sharply criticized the requirement of a back up based on classification which would need huge product development resources without gaining additional benefits to other existing back up methods

4.2.6 Diversity or chaos: Chapter Zero

Kampffmeyer (2008a) said that in the Chapter Zero the definition of the terminology is important. It should also include referencing to national legislation e.g. the legal value of documents and what different consequences the standard has for the public and the private sector. Kampffmeyer stated that Chapter Zero is probably the most important part of MoReq2 to make it adopted all over Europe. "Chapter Zero is the bridge between the pan-European standard and the national requirements" (Kampffmeyer, 2008a). Kampffmeyer (2008a) believed that there

will not only be a need for a Chapter Zero for national public sector requirements but also for industry requirements like financial, pharmaceutical, or others.

Foscarini (2008) indicated that a description of the national legal context in a Chapter Zero would be useful. Guercio saw the Chapter Zero as an opportunity to create awareness at national level and to develop e-government in a structured way.

Several interviewees were afraid that the Chapter Zero is used for different national adaptations with different contents specifications. These national diversifications could lead to different compliance demands which would be detrimental to the idea of a common European standard.

4.2.7 Governance

Governance officially lies with the DLM-Forum. But even to the vendors who are members of the DLM-Forum the current situation was not clear in summer 2008. Kampffmeyer (2008a) pointed out that the DLM-Forum is a loose network and that the executive body of the DLM-Forum is the DLM EEIG which stands for DLM Network European Economic Interest Group. To organize the process of compliance testing there will be "a governance body" (Kampffmeyer, 2008) that should also coordinate the translations and the Chapter Zeros. Kampffmeyer (2008a) indicated that there is no financial support from the European Commission for the dissemination, maintenance process[9], and the compliance regime. He saw the companies Serco, Imbus AG, his own company Project Consult and AIIM as the only drivers in the compliance process right now.

Blake (2008) perceived the DLM-Forum as very democratic because "it is open to everybody, companies and private bodies alike, and is not a vendor driven institution". The constitution of voting rights is currently changing so that the national archives would not have an advantage anymore.

4.2.8 Economic implications of standards on the EDRMS market

The initial supposition was that national EDRMS standards favour local companies which would oppose any European or international standards that could lead to increased competition. This assumption was based on the politics of using technical standards as a tool of protectionism (Purcell, 2005) in other sectors.

The opinions of the interviewers varied significantly and no clear answer could be derived on this question. A MoReq2 vendors' panellist (Anonymous, 2008) viewed the costly and complex compliance testing as a hurdle for smaller and medium companies. He assumed that the Big

[9] Original quote "Weiterpflege", translation by Wilhelm

Three (ECM, IBM, Open Text) would profit from a difficult and expensive compliance testing. One EDRMS vendor (2008) saw a negative effect on market competition if the compliance hurdle is put too high. John (2008) from the medium sized software company Saperion saw only a theoretical advantage for the bigger companies. John (2008) and a software vendor (Anonymous2, 2008) agreed that the big market players might have more resources to influence the drafting of a standard and that a technical standard could have an effect of a market barrier for smaller companies. One EDRMS vendor (Anonymous2, 2008) and Meatyard (2008) described the significant resources that big companies have in accompanying standard developments. According to John (2008) the small and medium sized German software companies do not consider an EDRMS standard as problematic depending on the costs of the compliance testing in relation to the potential market. One software vendor indicated that budget constraints can be higher in big companies than in small specialist companies. Fresko (2008a) acknowledged that the standard creates a market barrier that could be problematic to small companies. John (2008) stated that the efforts for compliance testing made by all involved parties are only worthwhile when the market is known and that e.g. the Slovenian market itself would not be valuable enough to justify compliance testing, at least for smaller vendors. Helm (2008) speculated that if the UK National Archives would officially mandate it for the British public sector there would be a sufficient market volume for software vendors. John (2008) estimated that for Saperion and other German software vendors adaptation of their products to MoReq2 compliance would only be “a step requiring limited efforts”.

Jones (2008) remarked that vendors in the UK already claim that they are MoReq2 compliant or that it would be fairly easy to adapt their software. Jones (2008) observed that MoReq2 has already entered the advertising documents of the vendors in the UK. Jones (2008) noted that with recent developments (big takeovers) in the vendors market “there are a lot less smaller companies in the market place than 10 years ago” regardless of the standards situation. One EDRMS vendor (2008) saw the “too theoretical” and “prescriptive” requirements as a deterrent to innovations. A MoReq2 vendors’ panellist (Anonymous, 2008) pointed out that even big companies will not make all their products MoReq2 compliant but will have to select certain solutions from their suite.

Kampffmeyer (2008a) mentioned that Open Text has committed to MoReq2 while IBM waits for the development in the market. Kampffmeyer (2008a) believed that smaller companies can react quicker to market or standards changes than the big players. Kampffmeyer (2008a) stated that MoReq2 could be an asset for vendors in selling their product to multinational European companies.

At the moment there are only estimates available on the cost of software adaptation and testing. One EDRMS vendor (Anonymous2, 2008) expected that the adaptation of one software product can cost several hundred thousand Euros. The actual cost of testing procedure would then be just a tiny fraction of the overall costs.

For one MoReq2 vendors' panellist (Anonymous, 2008) the potential return on investment is crucial for the decision if a company puts its products to compliance testing. A big IT company can calculate that a DoD compliant solution would cost a certain amount and that the market for DoD compliant solutions has a certain size. At the moment with MoReq2 there are no market estimates available which is one of the reasons why companies are hesitant to produce a compliant solution (Anonymous, 2008).

Horsman (2008) did not see a protective element of the Dutch standard because American software vendors have already sold their products in the Dutch public sector. Horsman (2008) pointed out the negative economic effect of standards in general on consultancies that specialize in drafting tender specifications.

Gibney (2008) indicated that an international EDRMS compliance standard would be valuable especially at a time when Microsoft is moving into the market with SharePoint which in its off-the-shelf version is not compliant with EDRMS standards. An internationally accepted standard could encourage large vendors to offer products that fulfil common EDRMS requirements. Gibney (2008) also saw a need to make EDRMS standards compliance easier for vendors. EDRM systems need to be able to compete with the low cost and market clout of Microsoft SharePoint.

4.2.9 MoReq2 compliance testing

Most of the interviewed could not say too much about the compliance testing scheme as its procedures and the executing bodies were still not determined when the interviews took place. Compliance testing was seen as crucial for the success of MoReq2. Joerling (2008) believes "it is imperative for MoReq2 to provide compliance testing, especially if it is to replace national standards in this area". Schram (2008) stressed the importance of a fast decision on the testing process. He assumed that unclear liability problems have delayed a decision by the DLM-Forum. One interviewee warned that the complexity and the costs of compliance would make it impossible for small and medium vendors to enter the market. At the moment of the interviews only a rough estimate of the costs was available. Fresko (2008a) estimated that test cost will be between 20000 and 40000 €. That would be higher than the 12000 British Pounds that the National Archives charged (which was only covering part of the costs encountered by the

National Archives according to Blake (2008)). Based on an informal notice from the company Imbus, which developed the test framework, Kampffmeyer (2008a) reckoned that “the cost for the testing of the basic and obligatory modules of chapter 3 to 9 will be around 20000 € and the testing of the complete basic and optional modules of chapter 10 will around 40000 to 50000 €”.

Meatyard (2008) indicated that the testing should be carried out by records managers otherwise the testing would take longer and with the product live cycles in the software industry hinder market entrance of innovative products or versions.

Blake (2008) saw a danger that the scope of MoReq2’s compliance requirements can have a negative effect on “small innovative companies” because they would not be able to fulfil all aspects of the core standard. As an example of the “too rigid” mandatory requirements he gives the sub-file definition which might reflect the Windows structure but poses heavy architectural problems for some software and is not a necessity for many users. “As these requirements are embedded within the mandatory core requirements it is a potential disincentive to some developers” (Blake, 2008).

Gibney (2008) argued that a percentage score for each chapter of requirements instead of binary results would be fairer to vendors and allow for variation in functional requirements between sectors.

One EDRMS vendor (Anonymous2, 2008) claimed that self-certification by the industry would be a better approach with customer panels that can name and shame non-compliant vendors. One EDRMS vendor (Anonymous2, 2008) reported that with the DoD 5015.2 different testers interpreted the standards differently and that the MoReq2 testing regime has to be careful not to do the same.

A MoReq2 vendors’ panellist (Anonymous, 2008) warned that different countries should not be allowed to define different compliance requirements. The MoReq2 vendors’ panellist (Anonymous, 2008) also recalled difficulties with the TNA compliance regime that did not reflect real life usage. He criticized requirements like the retention schedule of one minute which might be useful for one customer but not needed by the majority of users and can create big problems for software developers. One EDRMS vendor (Anonymous2, 2008) warned of a potential conflict of interest if private companies which took part in the standards drafting are involved in the testing regime. He favoured a testing that is carried out by impartial government employees like with DoD 5015.2 and TNA 2002. Other interviewees were also concerned with the potential conflict of interest of MoReq2 editors.

Duranti (2008) saw the usefulness of MoReq2 as a recommendation to users to check their solutions against the requirements. In her view, to use it as a vendor standard is not appropriate and, for users to buy a complete system that is fully compliant with Moreq2 required and optional modules would be too expensive and unnecessary. Moreq2 can possibly be regarded as some sort of standard vendors must comply with only in the public sector or sectors with highly regulated liabilities like the financial (Duranti, 2008). She pointed out that a combination of different products including open source solutions can add up to a MoReq2 compliant solution in the end user system.

4.2.10 English dominance?

The initial assumption was that there had been a dominant influence by the English in the drafting process of MoReq2 because the master version is in English, the chief editor and the drafting consultancy are English, a high number of the panellists is British (37%) and the National Archives in the UK have been the first to give up their national standard in favour of MoReq2 (even though without an official mandate). Fresko (2008a) made clear that he was not in any way favouring English panellists but that under the time pressure of the project and the limited resources he turned to contacts he had known before or experts who participated in records management discussion lists in English. Fresko (2008a) pointed out that the feed back from professional records societies in other European countries that he had addressed was modest.

All of the interviewed editorial panellists strongly denied a British dominance in the drafting process. Guercio (2008) pointed out that English is now the lingua franca of international projects like MoReq2. Kampffmeyer (2008a) said that English is the language of the IT sector and that the MoReq1 translations often were of poor quality.[10] Several editorial board members convincingly reported that concepts that follow continental European traditions were also taken into account. For example the establishment of the classification as a core element of MoReq2 shows rather an Italian and German influence (Guercio, 2008). Kampffmeyer (2008a) described the transformation of English concepts to an international level as one of the key tasks of the MoReq2 editorial board. He stated that 28 review panellists were English compared to 3-4 Germans. . Blake (2008) views MoReq2 as a European venture and feels it is not dominated by a British viewpoint as the document had to be inclusive of all jurisdictions requirements and for example drew attention to the “substantial” input from Germany and its DOMEA standard. Helm

[10] Kampffmeyer gives as an example of the awkward translation style the German term ”Schriftgutverwaltung” (which is not common at all and sounds very administrative and formalistic – annotation by Wilhelm) for records management.

(2008) mentioned the English influence in the DLM-Forum at the time that MoReq2 was developed.

4.2.11 MoReq2 in comparison to TNA 2002

For Fresko (2008a) the main difference between MoReq2 and TNA 2002 is the language. MoReq2 is formulated better and clearer than TNA 2002. Fresko (2008a) gave some examples of definitions in TNA 2002 that in his opinion are meaningless and "opaque": A 9.1 (TNA 2002) "must provide a robust and flexible architecture" or A 9.7 (TNA 2002) "should provide an interface to scanning systems". Fresko (2008a) regarded MoReq2's definitions as much clearer and far less ambiguous. Secondly he saw the modular structure as an improvement. The main technical differences according to Fresko (2008a) are the requirements for sub-files, record types, and the possibility to store directly to a class not a file. Gibney (2008) reported that even with TNA 2002-compliant systems many users have chosen to deviate from TNA 2002 by implementing EDRMS with sub-files.

Kampffmeyer (2008a) saw all TNA 2002 requirements covered by MoReq2 also because of the input from the high number of English panellists.

One EDRMS vendor (Anonymous2, 2008) favoured the more pragmatic approach of TNA 2002 in comparison to the "too theoretical" style of MoReq2.

Gibney (2008) pointed out that there are differences in terminology that can cause confusion: in TNA 2002 the terms "folder" and "part" are used whereas MoReq2 speaks of "file" and "volume". Gibney (2008) also stated that the metadata requirements of MoReq2 look very different from and require mapping to the TNA 2002 and the UK e-Government Metadata Standard (e-GMS).

4.2.12 Situation in the UK

Blake (2008) from the National Archives explained that the statement relating to MoReq2 on the National Archives' web site needs to be updated. The core information given is still valid. "The National Archives supports the adoption of de-jure and de-facto standards where they are relevant but it is not appropriate for the Archives to attempt to mandate the adoption of any one standard such as MoReq2" (Blake, 2008). There will also be no Chapter Zero for the UK because in the understanding of Blake (2008) the Chapter Zero was primarily created to explain terminology problems of translations. As an example he gave the Portuguese translation of MoReq1 which needed to explain the concept of record that does not exist in many non-English

languages. Blake (2008) therefore saw no need to draft a Chapter Zero for the UK because the master version is in English.

Jones (2008) said that the National Archives "need to take a lead" in the MoReq2 adoption and should "write a Chapter Zero in a conclusive way with contributions from other parts of the public sector": An adapted standard would heighten the consistency in the public sector. According to Jones (2008) an official mandate would also raise the reputation of the National Archives. "The TNA 2002 raised the profile of the National Archives in the public sector tremendously" (Jones, 2008).

Gibney (2008) advised that the Chapter Zero should contain a mapping of the MoReq2 requirements to TNA 2002 and the UK e-Government Metadata Standard (e-GMS).

Blake (2008) explained the cautious approach of the National Archives first by the fact that MoReq2 is not a formal standard that is issued by a formal standards body like ISO or BSI and secondly by the experience with the EDRMS standard of the National Archives since 1999. He mentioned that the experience in the UK was that some public procurers did not examine the specific requirements of the public body but simply asked for TNA 2002 compliance.

> Some procurers also put all optional requirements of the standard as mandatory without examining the real needs. In summary the existence of the EDRMS standard was misused by some users who relied on it to define their business needs but did not scrutinize their specific needs and implementation requirements. This not only led to disappointment at the implementation stage on the user side but demanded additional features from software developers which were not based on actual customer needs but on the optional standards requirements which many organisations chose to make mandatory in case they might need the functionality at a later date (Blake, 2008).

Several interview partners see personal and political changes in the National Archives as the main reason behind the half-hearted approach towards MoReq2. Especially the change of the chief executive a few years ago seems to have led to a more standard sceptic approach.

Jones (2008) gave a more positive picture of the user experience with TNA 2002. For example "less market research for procurement was needed because users had a list of certified products that was fit for the general purpose" (Jones, 2008). Jones (2008) perceives MoReq2 as the "better document" and he would not have any problems of using a European standard because more and more EU regulations apply to council level. Jones (2008) saw an advantage that MoReq2 was developed at a later stage than TNA 2002 and could include "technological advances", and adds that now the "knowledge of users is more mature" than in 2002. He added that users in the regional and local bodies in the UK are already aware of MoReq2.

Blake (2008) saw the initial impact of PRO 1999 on the EDRMS market as very positive. He stated that PRO 1999 established a market with several sound solutions and helped vendors to develop appropriate EDRMS. “This was embedded by the development of the later TNA 2002 requirements and associated testing scheme” (Blake, 2008).

Blake (2008) indicated that the compliance testing ultimately absorbed important resources of the National Archives which needed to be liberated for other projects (e.g. Web 2.0 in the public sector). He explained that the price put to testing did not cover the full costs as the organisation originally was still concerned to stimulate the market and did not wish to discourage small developers.

One of the criticisms against MoReq1 was the absence of a compliance regime so the presence of test scripts and the proposed establishment of a MoReq2 compliance testing process are now crucial for its impact according to Blake (2008).

Jones (2008) had the opinion that compliance testing could become a key advantage of MoReq2 over TNA 2002 because the “chances for a more robust testing regime are higher” and more resources could be made available than in the state archives. The National Archives had not been well suited and did not have the adequate resources for compliance testing. (Jones, 2008)

4.2.13 The EDRMS standards situation in other countries

The trend at the moment is that West European countries are more hesitant about adopting MoReq2 while East European countries (especially Slovenia) seem more eager to use the standard. Duranti reports interest in MoReq2 from Singapore and wider Asian and South American countries. Several Canadian organizations are trying to implement MoReq2 requirements in their recordkeeping systems (Duranti, 2008).

Norway

Fresko (2008a) stated that the work on the new version of the Norwegian standard NOARK started before the work on MoReq2. MoReq2 and NOARK 5 editor Dørum (2008) explained that NOARK 5 is in line with MoReq2 but is drafted as a separate standard to take into account special requirements. Dørum (2008) stated:

> There are some main differences between Noark-5 and MoReq2. We have designed the classification scheme in a different way (due to backward compatibility with Noark-4-systems), and we have a set of requirements for:
>
> - ingest and transfer to archival repositories,
> - transfer (migration) between Noark-5-systems, and
> - integration with other applications and systems

> We are very aware of not making requirements which is against requirements in MoReq2. Our goal is that any system with a MoReq2-certification, which also fulfils our national requirements due to classification scheme, ingest, transfer and integration, will be certified as a Noark-5-system. And I think that from the way Noark-5 has developed (and it has changed quite a lot since we began in September 2005 thanks to the contact I have had we the MoReq2-process) Noark-5 can be figured as the Norwegian MoReq2. The main difference is that our "chapter zero" is not a specific chapter; it is an integrated part of the Noark-5.

Germany

Helm (2008) explained that DOMEA should not be compared directly to MoReq2. DOMEA's main focus is case management for the public sector and only at the second level records management. According to John (2008) the impact of the German DOMEA has been limited outside specific governmental projects. 11 companies certified for the first version of DOMEA but only five companies certified for the second version. There are no plans to officially mandate MoReq2 in Germany.

Italy

Guercio (2008) explained that there is a lot of detailed legislation for paper and electronic records in Italy. Guercio (2008) said that there are plans for an Italian Chapter Zero. She mentioned the risks of misunderstanding in the translation of crucial terms like records and files. One regional private company that works for the public administration, CSI-Piemonte, checked its solution against the MoReq2 requirements in 2007 (Guercio, 2008).

Netherlands

Horsman (2008) reported that the new Dutch EDRMS standard NEN 2082, which was influenced by MoReq2, was published in June 2008. He thinks that MoReq2 is too generic and too comprehensive to be useful for the Netherlands. He also criticized the detailed prescriptive style of the MoReq2 requirements. He specially pointed out that the new Dutch standard is much shorter and adapted to the Dutch traditions and legislation. As a main difference Horsman (2008) described that the Dutch standard defines "requirements for records management software in applications and not requirements for records management applications like MoReq2".

France

Chabin (2008) explained that the French standard NF Z42-013 does not define records management but only electronic archiving and storage. A new version of the standard will be published at the end of 2008 with a wider scope but according to Chabin (2008) is still not a proper records management standard comparable to MoReq2 or DoD 5015.2. An official French translation of MoReq2 is planned to be finalized in November 2008. The French translation and the French Chapter Zero are driven by the Direction des Archives de France. Chabin (2008) did

not expect an official mandate for MoReq2 in France but saw good possibilities for the standard's use in the private sector.

European Commission

Schram (2008) explained that the European Commission financed and managed the development of MoReq2 and the test scripts in close collaboration with the DLM Forum. Now that the project is completed, the DLM Forum is responsible for MoReq2 governance and the establishment of a compliance testing regime. The European Commission holds an observer's post in the executive committee of the DLM-Forum and will be represented on the MoReq2 governance committee. The EC is also the copyright licence holder of MoReq2 including translations. Schram (2008) said that the drafting of MoReq2 was supported not only to maintain and extend the status achieved with the first MoReq but also because the EC wants to promote interoperability between ERMS as well as greater market integration for ERMS software that would result from the use of MoReq2 in different EU member states.

International

The initiative of the International Council on Archives for an international EDRMS standard that is currently developed by the Archives New Zealand has not been reviewed in the European scientific literature and was only mentioned by Meatyard. Jackson (2008) describes the project as based on the EDRMS standard of New Zealand which "is a simplified version of the European Union MoReq standard" and not a mandatory compliance standard.

4.2.14 Current situation of MoReq2

One of the main problems that many interviewed persons raised was the unclear situation of MoReq2 in summer 2008. Neither the governance nor the compliance testing had been settled when the interviews took place. On 11th August the minutes of the DLM Forum Executive Committee (2008) meeting from 3rd July were published. The Executive Committee concludes that the Imbus AG that drew up the test scripts will run compliance testing for a trial period of one year. "The DLM Forum will set up a limited liability entity", most likely as a foundation in the Netherlands. It was also decided that the "governance committee should be a sub committee of the executive".

Many interviewees saw the "potential of MoReq2 to become a widespread and useful standard" (Jones, 2008), depending on the development in the vendors and user markets and the position of national archives. At present there seems to be hesitation on all sides to move first. Kampffmeyer (2008a) stated that personal and financial interests play an important role in the defence of national standards.

4.2.15 Vision

Fresko (2008a) stated that the next generation EDRMS standard should be a “single, world wide endeavour”. He gave the example of a global company with 200 locations worldwide that needs to fulfil different national requirements for EDRMS. And Fresko (2008a) could understand the problems of software vendors who have to produce different versions for different markets. He claimed that the EDRMS standards are structurally different but basically the same. In the long term future Fresko (2008a) can imagine an ISO standard for EDRMS, maybe as an ISO 15489-3.

Kampffmeyer (2008a) saw MoReq2 as a chance for Europe to create a broad industry standard like DoD 5015.2

One interviewee (Anonymous, 2008) indicated that DoD also needed some years to be accepted by the market and that the US National Archives were “educating the market and explaining the benefits”.

Joerling (2008) mentioned that “currently, there is work being done by the Object Management Group (OMG) that is developing an Enterprise Information Architecture that may supplement or replace the value of MoReq2, DoD 5015.2 etc.” but adds that this is still a few years away.

Gibney (2008) hopes for one international compliance standard that becomes a global industry standard. Gibney (2008) raised the issue of Web 2.0 and foresaw the need to address the capture and management of Web 2.0 data in a future revision of MoReq2.

5 Limitations

Under the restrictions of time and resources the choice of interview partners was good. But during the interview process it became more and more clear that most people with an opinion on the EDRMS standards topic have a personal interest. Additionally many of the interview partners seem to belong to a circle that has known each other for years. Financial and political interests play a crucial role in the informal or official reaction to MoReq2. Traditions and academic ambitions influence the stance of representatives from the national archives and universities. The dissertation could only give a limited overview of the opinions and personal interests in the ongoing standards’ debate. Due to the tight dissertation schedule and word limit the opinions of end users and smaller and medium software companies have not found the attention they should have gained. The same limitation is true for the key stakeholders in Eastern Europe who seem to embrace MoReq2 more readily than the ones in the West European countries. Due to the limited sample of interview partners no genuine trends for certain stakeholder groups could be

established. On the contrary some paradox statements could be registered for example the warning that only big companies would profit from a compliance regime was not at all shared by the representative of a medium sized company. The assumption that MoReq2 is too long to be useful for the end user was not confirmed by the one interviewed end user in a regional English public body. It seems that some interviewees clad their own opinions in a protective pose for other stakeholders' interests.

A limitation of the dissertation is certainly its date. In summer 2008 the compliance procedure as well as the future governance of MoReq2 is still not decided. MoReq2 was only published in February 2008 and has in the last months been the topic of conferences and information events. The same dissertation approach with the same interview partners could provide a very different picture in a year's time. It would be valuable to put more focus on small and medium sized vendors and users to see what kind of benefits and problems arise from the MoReq2 usage at that level. A valuable angle to future research could be the developments in Eastern Europe and the international EDRMS standard initiative by the International Council on Archives, the Australasian Digital Recordkeeping Initiative and the Archives New Zealand.

Another limitation is the restricted size of the dissertation. The low word limit does not allow a thorough discussion of all the elements of EDRMS standards that are considerably longer than this dissertation.

6 Conclusions

The data analysis of the qualitative interviews provides a wide range of heterogeneous opinions. The pros and cons of MoReq2 are fiercely debated and no clear trend can be traced from the limited number of interviews.

Very few interviewees (2 out of 18)[11] pointed out advantages of TNA 2002 over MoReq2. Some (3 out of 18) were sceptic about the general usefulness of standards. The majority criticized the length of MoReq2 but not necessarily the scope (only 4 out of 18 defended the length). The optional modules were contentiously debated, some saw them as a good opportunity for software development and national adaptations others saw a danger of confused users with overwrought expectations and unrealistic demands to software. Many interviewees from the vendor side (4 out of 5) sharply criticized the length and the detailed prescriptive style of software functions. Some interviewees suggested that a different structure of MoReq2 with a clear separation of mandatory

[11] The statistics is only shown for areas which were discussed with all interviewees. Some questions like the governance of MoReq2 only emerged at a later stage of the research and could only be raised in the last interviews. And not all interviewees had an explicit opinion on each question area.

core elements and desirable functions and optional modules would be better for users and the marketing of the standard.

The crucial question is how the compliance test regime will be developed and how the EDRMS users and vendors in Europe will react to it. In summer 2008 there seems to be a stalemate situation in most countries with more interest for MoReq2 in East European countries. At the moment there is no big driving force like a national archive behind MoReq2.

The economic impact of the standard on the market in general and differently sized software companies in particular seems to be unclear. This will be highly determined by the compliance test regime. Some interviewees (4 out of 18) saw a danger that the compliance will favour the big companies over smaller innovative companies. Others (3 out of 18) saw an advantage for smaller companies because they are more flexible and specialized.

Several interviewees emphasized the importance of democratic and effective governance of MoReq2. The DLM-Forum currently favours national archives but a revision of its constitution is under way. Some of the interview partners suggested that other bodies like ISO would wield more neutrality and authority.

An English dominance in the drafting process could not be discovered but the influence of TNA 2002 on MoReq2 was considerable. Of course some concepts like “records” do not translate well into most other languages.

A potential conflict of interests of standards stakeholders was mentioned by several interviewees (4 out of 18). Besides the length the main problems of MoReq2 seem to have less to do with contents but with politics, traditions and protection of particular interests as well as the MoReq2 governance and compliance test procedure. MoReq2 is certainly an adequate replacement of TNA 2002 and provides comprehensive, up to date definitions for all aspects of ERMS. The only substantial criticism that could be made is that its scope was too ambitiously set and the number of desirable and optional requirements might be too high.

7 Reflection

The chosen research approach for this dissertation proved successful in so far that new angles and opinions on the EDRMS standards subject could be gained. The combination of text comparison and qualitative interviews made a good evaluation of the title question possible. The main restraints lay in the word limit and the ongoing development of MoReq2. The text comparison could only highlight the key differences but not provide an in-depth analysis of all

standards' requirements. In summer 2008 it remains unclear which countries will officially mandate MoReq2 and what the impact of the European standard on the EDRMS market will be. Three main areas for future research emerged that could not be sufficiently covered in this dissertation. First the (personal) politics that stands behind national and European EDRMS standards decisions which has nothing to do with the contents of the standards involved. The history of the UK National Archives' approach to MoReq2 in the last six years could be an interesting study topic. The other area is the potential impact of the standards' requirements on software and difficulties in the compliance testing. This would require advanced IT knowledge in the field of EDRMS. Thirdly it would be worthwhile to carry out an economic assessment of the EDRMS market in European countries and the market impact of standards. The qualitative research approach will continue to be the method of choice until MoReq2 has gained a broader recognition with records managers.

8 Personal opinion

One lesson learnt from the dissertation is that the evaluation of a standard's length and scope has more to do with personal predilections than with scientific justification. Why someone prefers a short, concise standard to a long, detailed, comprehensive standard depends so much on the particular situation, needs and interests of the person that I will not try to generalize my personal point of view. My opinion is based on the dissertation research and 13 years practical experience as a records manager in different sectors with a number of more or less successful EDRMS procurements and implementations.

I think MoReq2 is a logical development of TNA 2002 and MoReq1. Most of the core requirements are clearly defined and the ERDMS concepts used are widely accepted.

In my opinion EDRMS standards should define the basic necessities of electronic records management like authenticity and access control. EDRMS implementations will remain difficult and users should be aware of the risks and their own responsibility instead of solely relying on a standard regardless of how much it regulates. The scope and length and the very regulative approach of MoReq2 might stem from the wish for more security for a wide variety of EDRMS installations in different sectors. Nonetheless the success of an EDRMS implementation is in no way guaranteed by a detailed standard. The end user still needs to scrutinize his needs and specify the procurement requirements. A standard should be an entry barrier but not regulate all possible features of software. Depending on the compliance regime the ambitious requirement scope of MoReq2 might lead to few and expensive compliant products. The end user might have to pay the bill for features that he does not need. And more comprehensive software might

produce installation problem of its own by its complexity. It is crucial that the compliance regime is developed in such a way that will guarantee a wide range of innovative products also from smaller companies.

If there is not an official mandate by the EU or the national archives of a country with a critical market volume it might be necessary to consider a lighter, more concentrated version of MoReq2 with a concise core area of basic mandatory requirements and a second document with desirable requirements and optional module definitions. This does not mean a full blown revision but more a change in form to enhance marketing. A shorter MoReq2 that concentrates on its key strengths, compliance testable definitions of basic EDRMS requirements, would have the potential to become a general de facto standard in Europe. The wavering and ambivalent stances of key stakeholders in the MoReq2 process namely the European Commission and the UK National Archives is a shame. In my opinion after the end of TNA 2002 compliance regime the UK National Archives needs to set a consistent and long term EDRMS standards strategy, even if it does not mandate MoReq2. The future governance of MoReq2 must take into account that most national archives that have a dominant say in the DLM Forum are currently not willing to mandate MoReq2.

Hopefully future developments will continue as international projects, best under ISO auspices and integrating the US and ICA standards.

9 References

Anonymous (2008) *Interview with anonymous MoReq2 vendors' panellist*. By Philipp Wilhelm. 07 July, by telephone.

Anonymous2 (2008) *Interview with anonymous MoReq2 vendors' panellist*. By PhilippWilhelm. 09 July, by telephone.

Aalst, W.V.D. and Hee, K.V. (2002) *Workflow Management. Models, Methods, and Systems.* Cambridge, USA: MIT Press.

AIIM (2007) *Analysis, Selection, and Implementation of Electronic Document Management Systems (EDMS) – Recommended practice.* Silver Spring, USA. Available at: http://www.aiim.org/documents/standards/arp1-2007.pdf (Accessed 08 July 2008).

Archives New Zealand (2008) 'International e-recordkeeping standards' *Government recordkeeping news from Archives New Zealand.* March. Available at: http://continuum.archives.govt.nz/government-recordkeeping-news-archives-new-zealand-march-2008.html (Accessed 23 July 2008).

Beedham, H. et al. (2005) *Assessment of UKDA and TNA compliance with OAIS and METS standards.* Available at: http://www.jisc.ac.uk/media/documents/programmes/preservation/oaismets.pdf (Accessed 02 August 2008).

Blake, R. (2008) *Interview with Richard Blake*. By PhilippWilhelm. 09 July, by telephone.

Brady, F. (2005) 'European Commission Introduction: the DLM-Forum, MoReq and the European Commission'. *DLM-Forum*, Budapest, October. Available at http://dlmforum.typepad.com/History_of_DLM_Forum_and_MoReq.pdf (Accessed 24 March 2008).

Bundesarchiv (Germany) (2008) *DOMEA, MoReq & Co. – der praktische Nutzen von Normen und Standards für die Schriftgutverwaltung, Informationsforum im Bundesarchiv*, Koblenz, 5 June. Available at: http://www.bundesarchiv.de/service/behoerdenberatung/01664/index.html (Accessed 03 August 2008).

Bundesministerium des Innern (Germany) (2005) *DOMEA Anforderungskatalog 2.0*. Available at: http://www.verwaltung-innovativ.de/cln_117/nn_1006118/DE/Organisation/domea__konzept/anforderungskatalog/anforderungskatalog__node.html?__nnn=true (Accessed 20 August 2008).

Cain, P. (2002) 'MoReq: a critical evaluation' *Records Management Journal* 12(1) pp. 14-18.

Cain, P. (2003) 'MoReq: the standard of the future?' *Information Management Journal*, 01 March.

Chabin, A. M. (2008) *Interview with Marie-Anne Chabin*. By PhilippWilhelm. 18 June, by telephone.

Chin, K. (2007) *MarketScope for Records Management*. Gartner, 30 January. Available at: http://mediaproducts.gartner.com/reprints/oracle/145243.html (Accessed 29 March 2008).

Cimtech Ltd. (2007) *Managing information and documents: The definitive guide*. Available at: http://www.doconsite.co.uk/Guide%20Pages/Guide_home.htm (Accessed 01 March 2008).

Clarke, S. (2006) 'Open Text completes Hummingbird acquisition' *CBR online*, 3 October Available at: http://www.cbronline.com/article_news.asp?guid=6C1E8532-4F7B-4E73-8D62-A04CB439AE15 (Accessed 26 February 2008).

Clarke, S. (2007) *The future of ECM*. Butler Group Review Article, 01 February.

Clouner, P. And Grey, C. (2007) Document Management and long term storage – Technology is not the end.*ABD-BVD 60th anniversary*, Brussels, 19 November. Available at: http://www.abd-bvd.be/documents/60/PRES_20071119_CGR_PCL_V0_1_5-EN.ppt. (Accessed 4 April 2008).

Compliance-Magazin.de (2008) 'MoReq2 als neuer Standard in Europa'. Available at: http://www.compliancemagazin.de/gesetzestandards/eueuropa/aiim190508.html (Accessed 01 August 2008).

Connolly, T. and Begg, C. (2005) *Database systems. A practical approach to design, implementation, and management.*(4th ed.) Harlow, England: Pearson Education Ltd.

Coult, G.R. and Fresko, M. (2002) 'Finger on the pulse: MoReq' *Managing Information.* 9 (1) p. 6.

Cumming, K. (2007) 'Purposeful data: the roles and purposes of recordkeeping metadata' *Records Management Journal* 17(3) pp. 186-200.

Davis, M. (2005) 'Records Management in the UK public sector' *Butler Group Review*, September, pp. 5-7. Available at: http://www.diagonal-solutions.co.uk/assets/records_management_uk_public_sector.pdf. (Accessed 01 March 2008).

Dearstyne, B.W. (ed.) (2008) *Leading and managing archives and records programs. Strategies for success*. London: Facet.

Dearstyne, B.W. (ed.) (2002) *Effective approaches for managing electronic records and archives*. Scarecrow Press, London.

DLM Forum and MoReq2. A community of Public Archives and interested parties in archive, records and information management throughout the EU. Available at: http://dlmforum.typepad.com/dlm/ (Accessed 01 March 2008).

DLM Forum 1999, 2002, 2005. Proceedings and Programmes. Available at http://ec.europa.eu/transparency/archival_policy/dlm_forum/index_en.htm (Accessed 01 March 2008).

DLM Forum (2004) Members Meeting, Working Group B (Chair: Hornfeldt, T.), *MoReq – Further development and certification for the Model Requirements for Electronic Document and Records Management Systems (EDRMS)* ,Dublin. Available at:

http://dlmforum.typepad.com/Summary_Working_Group_B_Paper.pdf (Accessed 24 March 2008).

Document and Records Management, Technology Evaluation and Comparison Report (2005), Butler Group, 1 February.

DoD 5015.2-STD (2002, 2007) US Department of Defence: *Electronic Records Management Software Applications Design Criteria Standard*. Available at: http://jitc.fhu.disa.mil/recmgt/standards.html (Accessed 02 March 2008).

Dreier, V. (1994) *Datenanalyse für Sozialwissenschaftler*. München: Oldenbourg Verlag.

Duranti, L. (2008) *Interview with Luciana Duranti*. By PhilippWilhelm. 27 June, by telephone.

Dørum, A. M. (2008) *Answers to interview questions of Philipp Wilhelm by email.* 28 February.

EC awards €300,000 contract to Cornwell Management Consultants to develop international information management standard (15 January 2007) aiim Europe. Available at http://www.aiim.org.uk/news/db/newsmore.asp?id=301 (Accessed 29 February 2008).

Emery, P (2005) 'Specifications, Certifications, and Compliance: There is a difference' *CMS Watch*, 15 December. Available at: http://www.cmswatch.com/Feature/136-Records-Management (Accessed 01 March 2008).

EmTAG (Emerging Technology Advisory Group, AIIM) (2007) 'Future Trends Forecast' Aiim *edoc magazine*, September/October, p. 64.

European Commission (2005) *Report on archives in the enlarged European Union. Increased archival cooperation in Europe: action plan*. Luxembourg. Available at: http://ec.europa.eu/transparency/archival_policy/docs/arch/reportarchives.pdf (Accessed 20 March 2008).

European Commission (2006) *Invitation to tender No. SG/2006-02/PO*. 12 July. Available at: http://ec.europa.eu/transparency/archival_policy/moreq/calltender_en.htm (Accessed 02 August 2008).

Fanning, B. (2008) ‘A Smorgasbord of Standards’ *Aiim edocmagazine*, August 22(4) pp. 58f.

Fanning, B. (2007) ‘Standards to Manage Electronic Records’ *Aiim edocmagazine*, November/December, pp. 60-61.

Foddy, W. (1993) *Constructing questions for interviews and questionnaires*. Cambridge, UK: Cambridge University Press.

Foscarini, F. (2008) *Interview with Fiorella Foscarini*. By PhilippWilhelm. 11 July, by telephone. The quotations are her personal opinion and not the official opinion of her employer.

Fresko, M. (2008a) *Interview with Mark Fresko*. By Philipp Wilhelm. 16 June, London.

Fresko, M. (2008b) ‘MoReq2: The New Model for Developing, Procuring Electronic Records Management Systems.’ *Information Management Journal* 42 (4) pp. 62-65.

Fresko, M. (2007) ‘A very non-standard standard’ *Bulletin - Records Management Society*, 137, pp. 6-7.

Fresko, M. (2005) *MoReq and beyond*. Available at: www.bccservices.com/Actions&Events/Events-2005/051123-Meridio/**MoReq**-&-Beyond.ppt (Accessed 26 February 2008).

Fresko, M. (2002) ‘MoReq metadata – beyond Europe?’ *DLM Forum 2002*, Barcelona 6-8 May 2002. Proceedings, pp. 465-477. Available at http://ec.europa.eu/transparency/archival_policy/dlm_forum/doc/dlm-proceed2002.pdf (Accessed 01 March 2008).

Gable, J. (2002) ‘Everything you wanted to know about DoD 5015.2’ *Information Management Journal*, 1 November.

Gibney, A. (2008) *Interview with Alison Gibney*. By PhilippWilhelm. 08 August, by telephone.

Gouanou, M. and Marsh, M. (2004) 'Imploding technologies – driven by the records management requirements?' *Records Management Journal*, 14(2), pp. 62-64.

Gudim, K.-E. (2007) *Kommentarer til høringsdokument for NOARK 5 fra Software Innovation ASA.* Available at: http://arkivverket.no/noark-5/sw_innovation.htm (Accessed 4 April 2008).

Guercio, M. (2008) *Interview with Mariella Guercio*. By PhilippWilhelm. 21 June, by telephone.

Gunnlaugsdottir, J. (2006) *The implementation and use of ERMS*. PhD dissertation. University of Tampere, Finland. Available at http://acta.uta.fi/pdf/951-44-6763-9.pdf (Accessed 10 April 2008).

Healy, S. (2001) 'ISO 15489 Records Management – its development and significance'. *Records Management Journal*, 11(3), pp. 133-142.

Helm, L. (2008) *Interview with Ludger Helm*. Interview by Philipp Wilhelm. 18 July, by telephone in German. English translation of quotations by Philipp Wilhelm.
The quotations are his personal opinion and not necessarily the official opinion of the company.

Herzog, G. and Wiesner, H.-J. (2004) ‚Normung'. In: Kuhlen, R., Seeger, T. And Strauch, D. (eds) (2004) *Grundlagen der praktischen Information und Dokumentation*. 5th ed. K.G. Saur.

Hofman, H. (2005) 'The use of standards and models', in McLeod, J. and Hare, C. (ed.) (2005) *Managing Electronic Records*. London: Facet, pp.18-33.

Horsman, P. (2008) *Interview with Peter Horsman*. By PhilippWilhelm. 12 June, by telephone.

Hynd, S. (2005) 'TNA approval for EDRM software: What does it mean now and in the future?' *Information Management and Technology*. 38 (2) pp. 60-62.

*Information Age (*2006*)* 'Standard practice' 10 February.

Information Management Journal (2008) 'MoReq2 approved' June, 43(3), p. 22.

International Council on Archives and Australasian Digital Recordkeeping Initiative (2008) *Principles and Functional Requirements for Records in Electronic Office Environments.* Draft versions, February. Available at: http://www.adri.gov.au/content.asp?cID=3 (Accessed 25 July 2008).

ISO 14721 (2003) S*pace Data and Information Transfer Systems* – Open Archival Information System – Reference Model, Geneva, Switzerland, International Standards Organisation.

ISO 15489-1 (2001) *Information and documentation – Records management. Part 1: General.* Geneva, Switzerland, International Standards Organisation.

ISO 15489-2 (2001) *Information and documentation – Records management. Part 2: Guidelines.* .Geneva, Switzerland, International Standards Organisation.

ISO 23081-1 (2006) *Information and documentation - Records management processes - Metadata for records - Part 1: Principles* Geneva, Switzerland, International Standards Organisation.

ISO 23081-2 (2007) *Information and documentation - Records management processes - Metadata for records - Part 2: Conceptual and implementation issues.* Geneva, Switzerland, International Standards Organisation.

Jackson, R. (2008) 'Record keeping standards confuse users, vendors' *Computerworld New Zealand*. Online edition. 31 January. Available at: http://computerworld.co.nz/news.nsf/news/8B079055B5E15667CC2573DB000CD91C (Accessed 23 July 2008).

Jeffrey-Cook, R. (2007) 'SharePoint Server 2007' *Bulletin – Records Management Society* (136) p. 21.

Joerling, K (2008) *Answers to interview questions of Philipp Wilhelm by email.* 27 June.

John, V. (2008) *Interview with Volker John*. Interview by Philipp Wilhelm. 08 July, by telephone in German. English translation of quotations by Philipp Wilhelm.
The quotations are his personal opinion and not necessarily the official opinion of the company.

Johnston, G.P. and Bowen, D.V. (2005) 'The benefits of electronic management systems' *Records Management Journal*, 15(3) pp. 131-140.

Jones, P. (2008) *Interview with Philip Jones*. By Philipp Wilhelm. 10 July, by telephone. The quotations are his personal opinion and not necessarily the official opinion of his employers.

Kampffmeyer, U. (2008a) *Interview with Kampffmeyer*. By Philipp Wilhelm. 12 June, by telephone in German. English translation of quotations by Philipp Wilhelm.

Kampffmeyer, U. (Ed.) (2008b) *Records Management & MoReq2 Roadshow 2008*. PROJECT CONSULT, Hamburg, July. Available at: http://www.doxtop.com/magazines/MoReq2-2008.aspx (Accessed 08 August 2008).

Kampffmeyer, U. (2008c) *MoReq2 Roadshow – Review. Summaries of the presentations and discussions of the MoReq2 Roadshow 2008*. PROJECT CONSULT, Hamburg. Available at: http://moreq.niniel.org/2007/08/02/roadshow-2008-review/ (Accessed 08 August 2008).

Kampffmeyer, U. (2007a) 'Compliance and information management compliance' *Compliance-Magazin.de*, 14 December . Available at: http://www.compliancemagazin.de/fachbeitraege/hintergrund/projectconsult141207.html (Accessed 01 March 2008).

Kampffmeyer, U. (2007b) *MoReq.de Records Management Q & A*, 10 October. Available at: http://moreq.niniel.org/2007/09/10/records-management (Accessed 01 March 2008).

Kampffmeyer, U. (2007c) *MoReq2 und Records Management*, Seminarband, November. Available at: http://www.project-consult.net/Files/Seminarband%20MoReq2_TN2007.pdf (Accessed 4 April 2008).

Kampffmeyer, U. (2007d) 'Records management – welche Standards für welchen Zweck?' *Documanager.de*, August. Available at: http://www.documanager.de/magazin/artikel_1541.html (Accessed 4 April 2008).

Kampffmeyer, U. and Risse, S. (2007) *MoReq Update*. February 2007. Available at: http://www.project-consult.net/Files/MoReq-Update_20070206.pdf (Accessed 01 March 2008).

Kuhlen, R., Seeger, T. And Strauch, D. (eds) (2004) *Grundlagen der praktischen Information und Dokumentation*. 5th ed. K.G. Saur.

Laudon, K. and Laudon, J. (2006) *Management Information Systems: Managing the digital firm*. 8th edn. Pearson/Prentice Hall.

Lövblad, H. (2008) *Interview with Håkan Lövblad*. By PhilippWilhelm. 30 June, by telephone.

Lupprian, K.-E. (2002) MoReq- ein Modell für Anforderungen an elektronische Dokumentenmanagement-Systeme auf europäischer Basis. *EDV-Tage Theuern*, 25-26 September. Available at: http://www.edvtage.de/vortrag.php?kapitel=2002_05 (Accessed 22 March 2008).

Macfarlane, I. (2006) 'Managing Electronic Records: Standards and their Use in Practice' VII *European Conference on Archives Warsaw*, May 18-20, 2006. Available at: http://archiwa.gov.pl/repository/wz/VII%20Konferencja/Papers/I_Macfarlane_Managing%20Electronic%20Records_Standards....pdf (Accessed 05 February 2008).

Marchand, D.A.,Davenport, T.H. and Dickson, T. (eds) (2000) *Financial Times: Mastering information management*, Financial Times/Prentice Hall.

McKemmish, S., et al. (2005) *Archives: recordkeeping in society*. Centre for Information Studies, Charles Stuart University, New South Wales, Australia.

McLeod, J. and Childs, S. (2007) 'Records management capacity and compliance toolkits: a critical assessment' *Records Management Journal* 17(3) pp. 216-232.

McLeod, J. and Hare, C. (ed.) (2005) *Managing Electronic Records*. London: Facet.

McLeod, J. and Hare, C. (2004) *How to Manage Records in the e-Environment.* 2nd ed. London: Routledge.

Meatyard, G. (2008) *Interview with Gareth Meatyard*. By PhilippWilhelm. 16 July, by telephone. The quotations are his personal opinion and not necessarily the official opinion of the company.

MoReq (2001) *Model Requirements for the Management of Electronic Records.* Available at: http://www.cornwell.co.uk/moreqdocs/moreq.pdf (Accessed: 01 March 2008).

MoReq2 (2008a) *Model Requirements for the Management of Electronic Records. MoReq2 Specification.* Available at: http://www.moreq2.eu/downloads.htm (Accessed: 12 August 2008).

MoReq2 (2008b) *Model Requirements for the Management of Electronic Records. Appendix 9 to the MoReq2 specification: metadata model.* Available at: http://www.moreq2.eu/downloads.htm (Accessed: 12 August 2008).

MoReq2 (2008c) *Model Requirements for the Management of Electronic Records. XML Schema.* Available at: http://www.moreq2.eu/downloads.htm (Accessed: 12 August 2008).

MoReq2 (2008d) *Model Requirements for the Management of Electronic Records. Test modules.* Available at: http://www.moreq2.eu/downloads.htm (Accessed: 12 August 2008).

MoReq2 panellists (2008) Available at: http://www.moreq2.eu/MoReq2_Panellists.pdf (Accessed 22 July 2008).

M2 presswire (2006) Open Text Corporation: Open Text obtains additional U.S. Department of Defence Certifications for records management. 13 November.

M2 presswire (2007) Open Text: Open Text announces an SAP-endorsed business solution for records management. 20 April.

National Archives, The (UK) (2002a) *Requirements for Electronic Records Management Systems. Part 1: Functional Requirements. 2002 revision.* Available at: http://www.nationalarchives.gov.uk/documents/requirementsfinal.pdf (Accessed: 01 March 2008).

National Archives, The (UK) (2002b) *Requirements for Electronic Records Management Systems. Part 2: Metadata standard. 2002 revision.* Available at: http://www.nationalarchives.gov.uk/documents/metadatafinal.pdf. (Accessed 01 March 2008).

National Archives, The (UK) (2002c) *Requirements for Electronic Records Management Systems. Part 3: Reference document. 2002 revision.* Available at: http://www.nationalarchives.gov.uk/documents/referencefinal.pdf. (Accessed 01 March 2008).

National Archives, The (UK) (2002d) *Requirements for Electronic Records Management Systems. Optional module B.4: Case management and workflow. 2002 revision.* Available at: http://www.nationalarchives.gov.uk/documents/b4casemanagement_workflow_v10.pdf (Accessed 01 March 2008).

National Archives, The (UK) (2004) *Requirements for Electronic Records Management Systems. Part 5: Reference document. Implementation guidance. September 2004.* http://www.nationalarchives.gov.uk/documents/implementation.pdf (Accessed 01 March 2008).

National Archives, The (UK) (2007) *Requirements for Electronic Records Management Systems. Part 3: Reference document. July 2007 revision.* Available at: http://www.nationalarchives.gov.uk/documents/revised-reference-document-v2.pdf. (Accessed 01 March 2008).

National Archives, The (UK) (2008a) *Revised XLM schema.* Updated February 2008. Available at: http://www.nationalarchives.gov.uk/electronicrecords/xml-schema.htm (Accessed 04 August 2008).

National Archives, The (UK) (2008b) *Beyond the 2002 functional requirements.* Available at: http://www.nationalarchives.gov.uk/electronicrecords/beyond2002.htm (Accessed 04 August 2008).

National Archives, The (UK) (2008c) Search results for site search with “MoReq2”. Available at: http://www.nationalarchives.gov.uk/search/search_results.aspx?&queryText=moreq2&queryType=ALL (Accessed 04 August 2008).

National Archives, The (UK) (2008d) *Records Management Advisory Services* Available at: http://www.nationalarchives.gov.uk/archives/advisory.htm (Accessed 04 August 2008).

National Archives of Norway (2008) *NOARK 5.* Available at http://www.arkivverket.no/arkivverket/lover/elarkiv/noark-5.html (Accessed 04 August 2008).

National Archives of Norway (2007-2008) *NOARK 5 høring* [hearing]. Available at http://www.arkivverket.no/arkivverket/lover/elarkiv/noark-5.html (Accessed 04 April 2008).

National Archives of Norway (2007) *NOARK 5 Norsk arkivsystem*. Høringsdokument.[draft version]. 28 June. Available at: http://riksarkivet.no/noark-5/utsendt_noark-5-horingsversjon_2007-2806.pdf (Accessed 02 March 2008).

National Archives of Norway (1999, 2000 for English version) *NOARK 4*. Functional requirements for electronic recordkeeping systems used in public administration in Norway. Available at http://riksarkivet.no/english/electronic.html (Accessed 02 March 2008).

Open Text acquires Hummingbird for $489 million. (2006) MarketWatch: Global Round-up; September 2006, Vol. 5 Issue 9, p169-170.

Open Text Announces An SAP-Endorsed Business Solution for Records Management. (18 May 2007) Aiim. Available at: http://www.opentext.com/news/pr.html?id=1872 (Accessed 22 March 2008).

Open Text leads in ECM market share, According to Top Analyst Firm (31 May 2006). Aiim. Available at: www.aiim.org/article-pr.asp?ID=31476 (Accessed 08 March 2008).

Pember, M. (2006) 'Sorting out the standards: what every records and information professional should know' *Records Management Journal*, 16(1), pp. 21-33.

Perkins, B. (2007) 'Records retention: Who cares?' *Computerworld*, 16 April, p. 40.

Pickard, A. (2007) *Research methods in information*. London: Facet.

Project-Consult,Unternehmensberatung Dr. Ulrich Kampffmeyer GmbH (2008) *MoReq2 – Survey of the test framework.March.* Available at: http://www.cornwell.co.uk/moreq2/MoReq2_Survey_Test_Certification_Process_PROJECT_CONSULT.pdf *(Accessed 02 August 2008).*

Public Record Office Victoria (Australia) (2003) Management of Electronic Records PROS 99/007 (VERS) (Version 2). Available at: http://www.prov.vic.gov.au/vers/standard/ (Accessed 25 June 2008).

Purcell, D. E. (2005) *Global Technology Standards – a bridge to the future. PowerPoint presentation.* Available at: www.ieee.org/portal/cms_docs/education/setf/newsitems/globaltechstds.ppt (Accessed 06 July 2008).

Pütter, C (2008) 'EuroSox: Verband der ECM-Anbieter VOI bei MoReq2 skeptisch' *CIO IT Strategie für Manager. Available at: http://www.cio.de/knowledgecenter/rm/856274/index1.html* (Accessed 04 August 2008).

Records Management in the Public Sector. Butler Group. 1 September 2005

Rietsch, J.-M., Chabin, M.-A., Caprioli, E. (2006) *Dématérialisation et archivage électronique*. Paris: Dunod.

Robson, C. (1993) *Real World Research*. Oxford, UK and Cambridge, USA: Blackwell.

Schram, J. (2008) *Interview with Jef Schram*. By PhilippWilhelm. 17 July, by telephone.

Schwalm, S. (2004) *Die Einführung eines Elektronischen-Records-Management-Systems in der Landesverwaltung des Fürstentums Liechtenstein – Archivische Anforderungen an die elektronische Aktenführung*. Diploma paper at the University of Applied Science, Potsdam, Germany. Available at: http://home.arcor.de/cuba-libertad/downloads/diplomarbeitsteffenschwalm.pdf (Accessed 29 March 2008).

Shepherd, E. and Yeo, G. (2003) *Managing records.* London: Facet.

Sirevåg, T. (2003) 'Nye ISO- og EU-standarder for "Records Management"', *Manuskript til Arkivråd*, No. 4.

Smith, L. (2007) Cornwell bags EC e-guidance update. *Information World Review*. 5 February, p.4.

Stalters, R (2006) 'Does Microsoft finally get records management?' *Aiim edocmagazine*, July/August, pp. 20-21.

Stanford Encyclopedia of Philosophy. *Hermeneutics*. Available at: http://plato.stanford.edu/entries/hermeneutics/ (Accessed 24 February 2008).

TNA 2002, seeNational Archives, The (UK) (2002).

Tough, A. and Moss, M. (2003) 'Metadata, controlled vocabulary and directories: electronic document management and standards for records management.' *Records Management Journal*, 13(1), pp. 24-31.

Twentyman, J. (2006) 'Negotiating the RM standards maze' *ei magazine*, 3 May, 2(10). Available at: http://www.eimagazine.com/xq/asp/sid.D8051677-225E-41B6-97DB-441B50699162/articleid.FFE698DA-7E67-4C87-AC3C-2DB84445C8A6/qx/display.htm (Accessed: 23 February 2008).

UN/CEFACT (United Nations Centre for Trade Facilitation and Electronic Business) (2007) *Record Exchange Standard. Business Requiremenst Specification.* Version 0.3.4 *(18 December).* Available at: http://www.ica.org/sites/default/files/Records%20Exchange%20Standard.pdf (Accessed 17 April 2008).

Veitch, M. (2008) 'E-records get back on track', *Information World Review*, February, p. 19.

VERS, see Public Record Office Victoria.

Waalwijk, H. (2005) '"How normal is normalisation?" On the use of MoReq as starting point for a Dutch standard on "specifications for Records management functionality within software"' *DLM Forum 2005*. Available at:

http://ec.europa.eu/transparency/archival_policy/dlm_forum/doc/14bis_waalwijk.pdf (Accessed 26 February 2008).

Waldron. M. (2004) 'Adopting electronic records management: European strategic initiatives' *Information Management Journal*, 1 July. Available at: http://www.thefreelibrary.com/Adopting+electronic+records+management:+European+strategic...-a0119570068 (Accessed 29 March 2008).

Waldron, M. (2003) 'MoReq: Model Requirements for the Management of Electronic Records' *Aiim edocmagazine*, 2 January.

Waldron, M. (2004) 'Adopting electronic records management: European strategic initiatives'. *The Information Management Review*, July/August, pp. 30-35.

Whiting, J. (2006) 'Beyond 2002: Life after TNA testing' *Records Management Bulletin.* 134, pp. 15f.

Wikipedia *Hermeneutics*. Available at: http://en.wikipedia.org/wiki/Hermeneutics. (Accessed 20 February 2008).

World Trade Organization (WTO) (1994) *Agreement on Technical Barriers to Trade.* Available at http://www.wto.org/english/docs_e/legal_e/17-tbt_e.htm (Accessed 06 July 2008).

Zahnhausen, V. (2008) 'MoReq bzw. MoReq2' *DOMEA, MoReq & Co. – der praktische Nutzen von Normen und Standards für die Schriftgutverwaltung, Informationsforum im Bundesarchiv*, Koblenz, 5 June. Available at: http://www.bundesarchiv.de/imperia/md/content/abteilungen/abtb/bbea/02_moreq_2_vortrag.pdf (Accessed 02 August 2008).

Biographical details of the interviewees and the interviewer

I want to point out that some of the interviewees stressed that the view they expressed during the interview is a personal one and not necessarily their employer's.

Blake, Richard. Head of the Records Management Advisory Service, The National Archives, UK.

Chabin, Marie-Anne is director of Archive 17 (www.archive17.fr), an archival experts and advisory firm. Graduate of the École nationale des chartes, with a thesis on 18th Century Russia, Marie-Anne Chabin first gained experience as an archivist in the public sector (Direction des archives de France) before deciding to broaden her professional experience by joining a private firm as an EDM consultant, and later the Institut national de l'audiovisuel (INA) as administrator of the Vidéothèque d'actualités. In 2000, she decided to set up her own firm, Archive 17, as an expert in records management and electronic archiving, to help companies to promote records management policies and guidelines, retention schedules, requirements for records management systems and training. She is also appointed as a teacher in some schools and universities (records management training program). Marie-Anne Chabin has been involved in the translation into French of ISO 15489, MoReq, OAIS and MoReq2.

She published a set of archival method-related articles, two essays (Je pense donc j'archive. L'archive dans la société de l'information L'Harmattan, 1999 and Archiver, et après? Djakarta, 2007) and a treaty, Le management de l'archive (Hermès, 2000).

Duranti, Luciana. Member of the MoReq2 editorial board. Professor at the School of Library, Archival and Information Studies, University of British Columbia, Canada.

Dørum, Anne Mette. Member of the MoReq2 editorial board. Chief editor of NOARK 5. Senior adviser in the Records Management Department of the National Archives of Norway.

Foscarini, Fiorella. Member of the MoReq2 users review panel. PhD candidate at the School of Library, Archival and Information Studies at the University of British Columbia, Canada, and member of the InterPARES Project. Senior archivist at the European Central Bank.

The quotations are her personal opinion and not necessarily the official opinion of her employer.

Fresko, Marc. Chief editor of MoReq2 and MoReq1, editor to PRO 1999 and TNA 2002, employed by Serco (until 2007 Cornwell), UK.

Gibney, Alison. Member of the MoReq2 users review panel. Alison Gibney is Deputy Managing Director of Cimtech Ltd, an independent consultancy specialising in information management. Cimtech is owned by the University of Hertfordshire and has been operating commercially for nearly 30 years. Alison had over 15 years of experience in the IT industry before specialising in the information management field, first in a technical then in an advisory role. For the last 10 years she has been an active consultant in document and records management, assisting a wide variety of clients including government departments and agencies, local authorities and private sector companies. Her expertise covers the whole information management programme from early strategy studies and information governance reviews to the design, procurement and implementation of solutions combining technology, records management and cultural change. She is a frequent contributor to Information Management and Technology and an occasional contributor to the Records Management Bulletin.

Guercio, Maria is a full professor in archival science and ERM at the University of Urbino since 2000. For twenty years she worked as State archivist for the Ministry of Cultural Heritage where she cooperated with the State Authority for information technology to define the Italian legislation for ERMS. Chair of ICA Committee on current records (1990-1992), member of ICA Committee on program management she has been the chair of the Italian team for InterPARES projects (1999-2011). Co-director of the European project ERPANET and partner for the DELOS digital preservation WP, she is partner for the European project CASPAR on digital preservation (2006-2009). Since 2002, she is the director of the journal Archivi & Computer. She has chaired masters in archival sectors for University and for Italian Scuola superiore della pubblica amministrazione. For the next three years she will chair the national technical committee for the archival sector within the Ministero per i beni e le attività culturali.

Helm, Ludger holds the appointment of IBM Leader ECM Government Solutions across the geographies in Europe, Middle East and Africa. Before he joined IBM through the FileNet acquisition he was FileNet's marketing director for the public sector in EMEA (Europe, Middle East, Africa) since March 2004. Before his appointment in this PanEuropean role he was responsible for FileNet's Central European government initiative. In this position led the efforts to build FileNet Government for D-A-CH (a case management application for the German speaking governments) and managed successfully the process gaining the German government's DOMEA certification. With more than 10 years at FileNet he held different marketing and consulting positions. Even before joining FileNet we was engaged in the document creation and document management area with various industries, thus bringing a wealth of fifteen years of experience in document management and related process management. Helm holds a diploma degree in science of education of the Johann Wolfgang von Goethe University, Frankfurt, Germany.

The quotations are his personal opinion and not necessarily the official opinion of the company.

Horsman, Peter. Member of the MoReq2 editorial board. Co-editor of the new Dutch EDRMS standard NEN 2082 . Archiefschool (Netherlands Institute for Archival Education and Research), The Netherlands.

Joerling, Kevin. Senior manager, standards and records management at ARMA International, USA.

John, Volker. Member of the MoReq2 vendors' review panel. Director Product Management, SAPERION AG, Germany

The quotations are his personal opinion and not necessarily the official opinion of the company.

Jones, Philip is Head of Information Governance at Staffordshire County Council where he has corporate responsibility for records and information management, information legislation, information security and SCC corporate EDRM programme. Voted UK Records Manager of the

Year in 2000, Philip Jones is also currently President of the International Records Management Council and has served as Director and Chairman of the Records Management Society (GB). Philip Jones is a co-editor of ISO 15489 International Records Management Standard and written two books on records management most recently BIP 0025 Effective Records Management. Part 4: How to comply with BS ISO 15489-1. He is currently Chairman of the BSI Archives & Records Management Committee (IDT 2/17) and Chairman of the ISEB Panel on Freedom of Information. (ISEB is the examining arm of the British Computer Society). In November 2000 he was appointed the first ever UK Visiting Professor of Records Management by the University of Northumbria. He has lectured in the UK, USA, Italy, Sweden, Australia, Japan and South Africa on a wide variety of information related topics.

The quotations are his personal opinion and not necessarily the official opinion of his employers.

Kampffmeyer, Ulrich. Member of the MoReq2 editorial board. Member of the board of Managers of the DLM Network EEIG, Worcester, UK. General Manager of the consulting company PROJECT CONSULT Unternehmensberatung Dr. Ulrich Kampffmeyer GmbH, Hamburg, Germany.

Lövblad, Håkan. Member of the Archives Review Panel for MoReq2. Riksarkivet/National Archives, Sweden.

Meatyard, Gareth. PSR - Archiving and Compliance Products EMEA, Content Management and Archiving Group, EMC Corporation, UK.

The quotations are his personal opinion and not necessarily the official opinion of the company.

Schram, Jef. Policy Officer for archives and records management policy, European Commission Secretariat General.

Wilhelm, Philipp. Document Management Officer at the European Environment Agency in Copenhagen, Denmark, since 2005. He used MoReq1 as a basis for the technical specifications of an EDRMS public tender in 2007. From 1998 to 2005 he worked in the text archives of the German newspaper Süddeutsche Zeitung in Munich. Before 1998 Wilhelm worked in the archives or information centres of the TV station ProSieben, the management consultancy Roland Berger and the insurance company ARAG in Germany. Wilhelm earned a master's degree in literature in 1994 at the Freie Universität Berlin. He started the course Records Management at Northumbria University in 2006.

Annex 1: Questions for interview on MoReq2

Qualitative research for the dissertation “EDRMS Standards – a critical evaluation of the benefits of superseding national standards with European models focusing on TNA 2002 replacement by MoReq2” by Philipp Wilhelm for the Northumbria University’s Records Management course with Professor Julie McLeod

- What do you perceive are the benefits or disadvantages of having no standards? What are the benefits or disadvantages of a national standard (for example for the public archives)?
- What are the benefits or disadvantages of an international standard?
- What are the main differences between MoReq2 and your national standard (e.g. TNA 2002002)?
- From your perspective what would be the main advantages or disadvantages for replacement of national standards by MoReq2?
- What is the approach to MoReq2 in your country (adoption, influence, none)?
- What should be included in the Chapter Zero (the additional national specifications of MoReq2) for your country?
- How would a common European standard influence your national EDRMS market (procurement/vendors)?
- What would be the consequences of a MoReq2 adoption for the national archives institutions in your country?
- Is MoReq2 future proof? For example does MoReq2 make enough provisions for new records formats (e.g. voicemail, video) and the exchange of records between different database systems?
- MoReq2 was first published in English. Does the need for translation of the English MoReq2 master version influence the attitude towards national adoption in your country?
- What is your opinion on the optional modules of MoReq2 (e.g. work flow, case management)?
- MoReq2 compliance testing: what are its advantages or disadvantages (compared to national standards compliance)?