THE MELTING POT PARADOX OF STRUCTURED DOCUMENTS: NEW TOOLS FOR DIGITAL LEGISLATION

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1 A platform for true action

A seemingly static approach to document management in terms of structured text entities may in fact turn out to be a platform for true action. The platform metaphor is, of course, somewhat risky in that it indicates being left behind when the fast train of modern information communications technology has already left... Nevertheless it is attractive as an expression for the impact of infrastructures.

Sticking to documents as a basis for a discussion on development trends in information society might be regarded as somewhat old-fashioned. But for all the growing impact of multimedia on the legal domain, the document concept still plays an important role as a basis for legal discussions, above all because law is still produced in the form of text entities commonly referred to as documents. Typical document instances are acts and ordinances, decided cases, contracts and clauses, conventions and so forth. Actually, a more appropriate expression in this context would be virtually tangible documents, meaning that these kinds of objects representing law may occur in electronic as well as in paper formats. The introduction and application of IT has, furthermore, led to a state of art where the boundaries of legal documents are not necessarily defined beforehand. The Swedish Principle of Publicity, for instance, is characterised by a right of access to dynamic constellations of data.

This presentation sets out to show that structured documents accomplished by means of standardised markup languages ought to be regarded as a highway route on the map of an information security characterised by security. The somewhat obscure title “The melting pot paradox of structured documents” is chosen in order to capture the embedded and intended contractions in the approach advocated here, viz order achieved by encumbering text with <tags> (mainly elements and attributes) and static views of structures as a basis for dynamic actions.

The grooves and moves in this context are trusted public and business activities in terms of information retrieval, knowledge management, automated decision-making, e-commerce, etc. Trust implies information security conventionally comprising the criteria of availability, confidentiality (secrecy), integrity, accountability and non-repudiation. Clearly, these building bricks of security have legal implications both in terms of system design and management as well as regards applicable rules and regulations. In the

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following it will be sufficient to let these concepts serve as a general framework for the discourse.2

2 The mission

Structured documents, as a tool for legal validity in a security context is the mission. This statement may in itself be regarded as a content-heavy expression that can be the object of an analysis resulting in marked-up elements and attributes. A supporter of standardised markup languages is thus expected to take a dynamic approach to text, while those not yet informed of the potentials of the W3C Recommendation XML (Extensible Markup Language)3, would give priority to representations of key words attached to the beginning of a document or search words inserted in an (inverted) index file.

3 Why markup languages?

3.1 XML explained

It is high time now for a brief explanation of what document markup is all about. An XML document may be well formed or governed by a DTD (Document Type Definition) or schema. A document type definition defines the composition of a set of documents (e.g. laws and cases). It contains information about document elements, the logical order of these elements and their frequency, etc.4 A DTD is expressed in XML and may be stored in a data file outside the document.

There are different ways of explaining the underlying meaning of a DTD. One could focus on the purpose of a DTD as a method of structured information description in context. This implies that a DTD does not necessarily have to be related to a certain type of document but rather to some particular kind of information. A skilfully designed DTD with corresponding markup makes it possible to adjust the use of a particular document to a variety of purposes, i.e. without later having to change the markup. XML then plays the role of an enabling tool, making it possible, for instance, to find information that is of interest on a specific occasion. This is an indication of how important a preparatory document analysis is.

A schema can be generally described as a specification or formal definition of the constraints on the content of an XML document, aiming at both structure

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2 This contribution is based on an the author’s article in “Law and Information Technology: Swedish Views: An anthology published by the IT Law Observatory of the Swedish ICT Commission”. See further www.itkommissionene.se/observ
3 See further http://www.w3.org/XML/
4 Major logical connectors are decided order (all included), optional order (all included), exclusive or and inclusive or. Major occurrence indicators are: one, zero or one, one or more, and zero or more.
and functionality. One way to specify a schema is to use a DTD, but XML schemas can model other kinds of structured data as well and are in principle more expressive. An important feature of an XML schema is the possibility of integrating database functionality and communication between applications. A major purpose of an XML schema is indeed to make it support data typing (integer, date, etc.) and thereby facilitate XML data interchange with conventional database systems. XML schemas are written in XML and have been developed for use on the Internet and are therefore co-ordinated with other W3C specifications.5

A document instance is the encoded document itself containing data (e.g. legal text), markup (document element tags) and a DTD reference (if not present in the document). The markup elements surrounding the text are called tags. In the simple example below the tags are displayed in bold characters. The value of attribute type ID is shown in the ‘article tag’. ‘A3-95-46-EC’ here stands for Article 3 in the EC Data Protection Directive.

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<ARTICLE ID='A3-95-46-EC'>
<ARTTITLE>Scope </ARTTITLE>
<ARTNO>Article 3 </ARTNO>
  <PARA>1. This Directive shall apply to the processing of personal data wholly or partly by automatic means, and to the processing otherwise than by automatic means of personal data which form part of a filing system or are intended to form part of a filing system.
  </PARA>
  ...
</ARTICLE>
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In comparison with HTML, the dramatic difference is that while HTML aims at presentation of text on a (computer) screen, a major purpose of XML is to allow for semantic expressiveness. Furthermore, the HTML DTD consists of a predefined tag set but an application based on XML is open to any kind of customised vocabulary. Of utmost importance is the inherent validation component of an XML application governed by a DTD or schema. In practice this means that a marked-up document is validated against the predefined logical constraints (decided order of elements, all included, optional order, all included, exclusive or, inclusive or) and the frequency occurrences (one, zero or one, one or more, zero or more).

3.2 XML and security

So far so good, but is the XML approach secure and what makes it at all worth investigating in terms of legal implications? The purpose here is to convey a strategy for answering this question. The aim is thus not merely to satisfy curiosity but to make the approach serve more practical interests. A legally founded checklist of XML related security-enhancing factors would no doubt enhance the rule of law and thus promote trust in system design based on XML solutions (see further Section 5.3 below).

One starting point is that modern document management requires coordination in order to meet demands for efficient production, supply and use. Apart from general needs to improve recall and precision when retrieving information, there is also reason to consider, for instance, knowledge management attempts and exchange of business data in networks of various kinds.

XML has a potential to function as a lever and a sound basis for all of these developments in modern information society. In this context it should be mentioned that XML also has a profound impact on substantive law itself, in particular in the fields of contract law, intellectual property rights and privacy protection. For instance, XML-messaging quite often comprises personal data processing in a legal sense (see the EC Data Protection Directive, 95/46/EC). It concerns requirements of consent from data subjects to collect, store and disseminate personal data. Furthermore, modern e-business models make it necessary to consider information duties, e.g. that the identity of a service provider must be clarified according to the EC Directive on E-commerce (2000/31/EC). Liability issues are also relevant in terms of an analysis of who is responsible for damages emerging as a result of the abuse of a transferred authentication.

As indicated above, it all boils down to trust in global digital information and a need for legal information security in open as well as in closed computer-based networks. Every organisation, be it a private enterprise or a public authority, needs to reflect upon the handling of documents governing internal as well as external actions. One highly important question, for example, is how far XML may support message authentication and electronic measures to prevent distortion of (document) content. The concept of authority here covers a wide variety of actions, e.g. authorisations to enter into contract, and law enforcement.

Bearing in mind the initially mentioned checklist approach to be captured in this presentation, the group of addressees or – “who will benefit” – may be

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described in the following way. To begin with, secure use of XML is relevant for commercial actors as well as for representatives for the public sector. This can be instanced with buyers who, in a procurement situation, are dependent on clarification of legal conditions governing a particular situation. In a vendor perspective, the use of a checklist may be regarded as a business opportunity in terms of a legally founded security branding of offered solutions. Enhancing legal awareness among politicians and public officials for the purpose of efficiency, foreseeability, uniformity, openness, etc. is another obvious advantage.

3.3 XML as a tool

The expression “XML as a tool” connotes, to begin with, *markup languages in a broad sense*, not least including SGML (Standard Generalized Markup Language), considering the impact of this ISO standard, dating back to 1986, on applications which are still running today (ISO 8879:1986). A markup language may be utilised for representation of structures and contents, styling and communications. This implies that not only the core XML W3C Recommendation is of interest in this context, but also related standardisation initiatives such as XSL (Extensible Stylesheet Language), SOAP (Simple Object Access Protocol), etc. Bearing this in mind, XML ought to be regarded as a symbol for a *system development approach* commonly including data management in terms of text.

At one stage of the relatively short historical development of this type of applied information technology, the SGML community was a pretty closed one, not particularly amenable to discussions, for instance, concerning the pros and cons of various database technologies. Today the situation has changed in that XML can be said to play a central role in more or less any technical solution involving web technologies, telecommunications as well as conventional electronic data processing and to some extent also techniques having their origin in artificial intelligence.

All of this may no doubt be elementary to the already experienced user of the above-mentioned family of standards. Practical experience has shown, however, that a common misunderstanding at the management level of an organisation, be it a private enterprise or a public agency, is that XML (in the broad sense) involves choosing a particular system design and possibly even software product. Representatives of the industry as well as other promoters of standardised markup languages thus have the educational task of explaining the underlying ideas of a non-proprietary approach to data management. Otherwise there is an obvious risk that such a lack of understanding may turn out to be a major obstacle for widespread use of XML. In fact there may be legal advantages associated with awareness of the inherent capacities of XML. The choice of system development approach as such may have an impact on a court’s assessment, for instance, of whether an organisation’s archival system is to be regarded as accurate or negligent in terms of meeting legal requirements of evidence by keeping track of version-dependent legacy data. The pharmaceutical and vehicle industries are typical examples of branches
heavily burdened by legal requirements of documentation. However, it may not be a trivial task in a litigation situation to explain to a court just how the use of XML manifests a party’s legal awareness.

To summarise, although XML may be described as a tool, it is not just any kind of tool. It is not a physical object like a pen or a paper. Nor may XML be described as a mechanical mechanism resembling, for instance, the functions of a typewriter. XML is instead a tool with strong infrastructural potentials closely interlinked with IT-support for information retrieval, document management and knowledge management. From a legal point of view, this deserves particular attention.

4 Infrastructural changes

The term infrastructure is often used to describe the fundamental functions of society. It can refer to both ‘hard infrastructures’, such as the road system, or ‘soft infrastructure’, such as social systems and various types of information systems. The basic components of a legal infrastructure, which may be regarded as ‘soft’ according to the above-mentioned classification, include various forms of (a) data processing, (b) documentation, (c) communication, and (d) organisational forms.

The introduction of information technology into society has brought about dramatic changes to all these components. For example, data processing, which was a manual activity in the past, was transformed step by step during the 1970s and 1980s into automated data processing of cases. Today, automation of administrative activities, in the sense of legal decision-making based on wholly or partly automated routines, can be said to be a characteristic feature of administrative procedures. Another type of legal data processing takes place in connection with the development and conclusion of contracts. The technical possibilities of electronic conclusion of contracts with the whole world as a market place warrants a discussion in this area concerning the fundamental legal principles underlying offers, acceptance, evaluation of evidence, etc. XML obviously has a role to play here as a tool for improved legal system management considering its potentials for handling version-dependent text units over time.

Earlier generations of lawyers would naturally associate the concept of ‘documentation’ with physically demarcated paper documents, which could be geographically located. In the age of the Internet this view is no longer valid. It is no more obvious that documentation consists of paper documents, but that it may come in different forms of electronic documents, which are in many cases carriers of declaratory acts, proprietary rights, criminal acts, etc. XML clearly mirrors this development. Mention should here be made of such

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initiatives as XML Signatures\textsuperscript{8} that explicitly address the need for incremental signatures, which, for instance, may be of relevance in a situation of successive drafting of contracts.

In a similar way (voice based) analogical communication services are used less frequently in legal work. Both civil servants’ communication with the citizens, and lawyers’ contacts with their clients are increasingly dependent instead on digital and mobile services. In Sweden, for instance, the comprehensive systems for the dissemination and collection of information by the authorities are based on strategy that may be referred to as a kind of XML-labelling. The system for Dissemination and Collection (Sw. SHS) constitutes the public administration’s investment in order to create a general communication link to secure information exchange through the open Internet. In contrast to electronic trading systems, which are usually designed with a focus on business transactions in a certain sector, SHS constitutes a general platform, which has not been especially programmed for a certain sphere of activity.

As regards organisational forms we have a strong tradition of working with nationally well-demarcated larger and smaller entities. This is especially clear as regards the information system of public administration which has developed in harmony with nationally defined government authorities which are divided into central and local organs, etc. Information technology as such and the Internet as a concept have provided leverage for loosening up boundaries between authorities as well as national demarcation lines. The private sector may be characterised by even more all-embracing, network-based and global organisational forms in recent years. It is evident that XML applied supports or rather is an integrated part of this infrastructural shift. Obviously this gives rise to a whole series of substantive law issues, for instance, how to apply privacy legalisation to cross-border flows of personal data.

5 Interaction of law and IT

5.1 Regulatory management from a security point of view

In the era of IT-supported document management there is a growing need for version control in a long-term perspective, not the least in the context of digital legislation. Document markup, including linking techniques of different kinds, is attractive as a general value-adding method. At the same time, the introduction and widespread use of more and more advanced digital document management systems is resulting in a very complex environment for text handling. Furthermore, open systems, where transactions are not predefined in beforehand – which is typical for the Internet – are a major development trend in today’s communications networks. One important concern, therefore, is how best to secure trails of authorisations, alterations included. More

\textsuperscript{8} See further http://www.w3.org/Signature/
precisely, this is a matter of information security policies mirroring the norms that govern an organisation, such as who has a right of access to what, without knowing beforehand who will be claiming this right of availability.

Considering that the major characteristics of normative documents are complex, interdependent text units, shifting in content over time, interpretable only in context, we can extract one key issue, and that is the question of a methodological approach to regulatory management. If the challenge in terms of a required infrastructure is overcome, we can indeed expect the added value so often promised by vendors. There is otherwise an obvious risk of turnback or perhaps even failure.

The cornerstones in a system development approach meeting the fundamental requirements of modern regulatory management are (a) document markup, (b) information security, and (c) legal awareness. XML naturally represents the core method as regards document markup. From the point of view of regulatory management, XML offers vital possibilities of transparent modularity in a structural context. The conventional understanding of information security is that it comprises availability, confidentiality (secrecy), integrity, accountability and non-repudiation. Ongoing work at IETF (The Internet Engineering Task Force) on securing web-based documents will of course serve as an important input. In this context the focus of attention is on the XML Signature and Encryption initiatives. The application of a cryptographic method of progressive (incremental) security enhancement may serve as supplement. Finally, legal awareness is required in terms both of methodological aspects of legal system development and of substantive law issues related to the use of electronic signatures, electronic evidence, etc. The last mentioned perspective might also be expressed in terms of possible legal validity as proof of actions of different kinds.

5.2 Digital legislation – in a broad sense

The term digital legislation is used here in a broad sense denoting needs and methods for adequate and efficient handling of documents containing legal rules. More precisely, how can the study of legal concepts, norm hierarchies (expressing authorisations to issue legal rules etc.) be supported by XML?

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9 Bing, Jon, presents regulatory management as “a technical term used to describe all the development, adoption, revising and amendment of regulations”. He perceives legal information systems as a tool not only for legal research but also for “maintaining a flow of legal communications from authorities to the population. In this perspective, the legal information becomes part of the regulatory management”. See Legal data bases for legal research and regulatory management. In: Nordisk årsbok i rättsinformatik (NÄR) 1994, p. 61-77. Rättlig informationssökning i databaser, Ed. Ari Koivumaa. Stockholm, Norstedts, 1994.

10 This implies that digital legislation here is treated as one central aspect of regulatory management in a broad sense.
First of all, an XML application may contribute to digital legislation with regard to the process of lawmaking itself. The background is that, for instance, the Swedish lawmaking bodies, in particular Parliament ('Riksdag') and Government, require feedback on given authorisations to issue (more detailed) provisions at lower norm hierarchical levels. More precisely, this has to do with the need to obtain more profound knowledge of how these rights to issue rules and regulations are taken advantage of by public authorities.\(^1\)

**Norm analysis** – in general terms – is another view of digital legislation. It may concern a specific target in terms of a certain aspect of a legal regulation with the prospect, for example, of future amendments. In this context XML may play the role of a rule differentiator, which can be more fully illustrated by the following practical example. The situation concerns where public authorities issue legal norms for the purpose of governing certain public-sector-related activities (cf. above). In Sweden, such rules and regulations are, in principle, either binding ('shall') or to be regarded as recommendations ('should').

Owing to problems related to the handling of revisions and amendments it happens, in practice, that responsible public authorities hesitate to issue binding legal norms. This may occur, especially, when only a small part of a legal act of this kind include binding legal rules. In such a situation (i.e. when the provisions consist of a combination of binding and non-binding legal norms contained in one singular document) the legal provisions as a whole may be regarded as binding. This, however, is not a completely true description of the document’s legal status.

By using XML as a tool in circumstances like these the different parts of the provisions could be marked up, for instance, as being of a binding or of an advisory nature. This would facilitate, of course, the management (updating, in particular) of the provisions and thus enabling of the most suitable kind of legal norms, without having to take practical aspects into consideration.

**Rule simplification** has proved to be a controversial aspect. From a general point of view there may be multiple reasons for simplification of normative information. In a broad sense, it concerns an ambition to explain "the law" to the general public. It involves considerations taken to basic languages skills, scholarly background, and user customisation in general.\(^1\) Evidently, it is not

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\(^1\) With regard to the practical aspects of the lawmaking process XML can very well be taken advantage of for the purpose of accomplishing true correspondence between printed paper versions and electronic versions of regulatory information.

\(^1\) The following overall goals are given by Bourcier and Catta: garantir la validité de la transmission de informations; comprendre, apprendre et échanger; éviter les interprétations divergentes; être efficace en terme d’économie.” See Bourcier Daniele and Catta, Elisabeth, L’informatique, l’écriture et la codification des textes juridiques. In: Revue Francaises de finance publiques, No. 57, 1997, pp. 67-80. Administration de l’impot et communications. p.70. It is
the case that an XML encoding of texts automatically leads to results with regard to these kinds of aspects. XML may play the role, instead, of an important enabling tool. Furthermore, a successful strategy must be based on explicit decisions how to apply the descriptive language.

Another area of digital legislation that ought to be mentioned here concerns translation work. The need for European harmonisation of national law as a result of European Community law requires substantive efforts on behalf of the lawmaking bodies in the Member States.

Yet another aspect of XML as a means of improved digital legislation has to do with the growing information exchange between the public and the private sectors. The American motor industry has, for example, developed standards for XML applications in order to comply with legal requirements concerning documentation laid down in environmental regulations. The use of standardised markup languages has proved to be one way of avoiding superfluous documentation when, for instance, different car makes are being repaired (cf. above).

Another possible future application of standardised markup languages concerns the encoding of data which are considered fundamental in public administration, for example, data identifying a natural person.

From the point of view of rule application a few comments should be made also about XML used for the purpose of legal labelling. The administration of intellectual property rights has in general become increasingly more difficult

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13 During the 1980s there was quite an intense debate concerning rule simplification in Sweden. In a doctoral thesis centered on the Co-determination Act (in Swedish “Medbestämmandelagen”) Gunnarsson proposed a theory that pragmatic factors like the perspective and function-orientation of the text are of prime importance for action-oriented comprehension. Gunnarsson, Britt-Louise Lagtexters begriplighet: En språkfunktionell studie av medbestämmandelagen. (Lund: LiberFörlag 1982). As a basis for this argumentation Gunnarsson made a distinction between reading purpose, comprehension level and text level. The analysis resulted in a guide for functionally oriented authoring of law-texts based on her practical attempts to rewrite the above mentioned Act. Gunnarsson’s doctoral thesis was heavily criticised by legal experts. Her point that a more comprehensive use of layout in legal acts would make the text easier to grasp was, for example, not thought of as being based on a sound understanding of the legal system. This criticism appears to be relevant considering the general importance of content-oriented markup. On the other hand, today’s IT-tools make it possible to experiment intensively with the layout of a document. Under certain circumstances this aspect of a legal text in terms of a markup level could be taken advantage of for the purpose of improved legal document management. This is not to say, however, that layout should be permitted to have a normative impact.
to handle. A problem area in itself is the application of copyright laws to computer programs. The development of electronic global networks of information exchange, etc., such as the Internet complicates matters. In these circumstances it seems to be a worthwhile task to look into the possibilities of adding copyright tags to protected material. Such copyright tags would be complimentary to conventional agreements (licences etc.) as well as legislation.\footnote{See further \url{http://www.oasis-open.org/cover/dpdl.html}.}

Quite a special method to accomplish digital legislation would be to regard (and technically define) computer programs, which have been developed by public authorities, as XML documents. In such an attempt, the basis would be the source code before execution. The background of this suggestion can be described, briefly, as follows.

The development of administrative computer systems for the purposes of public administration – including automated legal decision making – often means that the vague criteria characterising legal language have to be transformed into more precise (strict) criteria in the sense of programmable data. This is due to the fact that most computer programs need clear operational facts in order to be executed.

Previous research based on both theoretical and empirical studies have shown that the transformation of legal rules into program code is no trivial task from a legal point of view.\footnote{See further Magnusson Sjöberg, Cecilia: Rättsautomation: Särskilt om statsförvaltningens datorisering. Stockholm, Norstedts juridik, 1992.) pp. 181-243, 269-271.} For instance, in the area of (Swedish) social insurance misinterpretations of applicable statutes have occurred in the corresponding computer programs. A closely related problem concerns that faulty programming methods may lead to ambiguous results even if the outcome of the automatic data processing is not entirely wrong. An important point to be made in this context is that the initial rule transformation will determine the outcome of almost all the following cases, since in practice, the implemented interpretation of the legal rule(s) is made once and for all.

XML may contribute here as a way of describing – marking up – computer programs used for automatic legal decision making in public administration. The program code itself would then be regarded as a special kind of legal document. One major benefit of using XML as a tool for handling this document type would be to facilitate the focusing of attention on legally relevant parts. This in turn would improve the conditions for accomplishing legally correct revisions of legal provisions in the form of program code.
Summing up, the discussion about digital legislation has dealt with the following aspects:

- the process of law making,
- norm analysis,
- rule simplification,
- translation,
- information exchange,
- markup of fundamental data,
- legal labelling, and
- computer programs perceived as XML documents.

All these tasks associated with digital legislation can benefit from XML. This is, in general terms, explained by the fact that the standard allows for expressive markup of document structures and, even more important, content.

5.3 XML related security-enhancing factors

The discussion above boils down to a need for a strategy to handle legal uncertainty characterising the information society of today. This manifested need for a legal strategy may in practical terms be transformed to a focus on XML related security enhancing factors. The table below presents an overview – not an exhaustive list – of what is here referred to as XML characteristics, means and legal incentives.

<table>
<thead>
<tr>
<th>1. XML characteristics</th>
<th>2. Means</th>
<th>3. Legal incentives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-proprietary format</td>
<td>Inherent in any XML application</td>
<td>Public sector: Accessibility in a long-term perspective</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Private sector: Legal requirements of keeping track of legacy data</td>
</tr>
<tr>
<td>Quality assurer in</td>
<td>Validated documents by means of DTDs and schemas</td>
<td>Public sector: Public information supply (possible state responsibility)</td>
</tr>
<tr>
<td>document production</td>
<td></td>
<td>Private sector: Commercial products (avoiding liability)</td>
</tr>
<tr>
<td>Quality assurer in</td>
<td>One single repository as a basis for customising production on, e.g. CD-ROM, on-line, print</td>
<td>Public sector: See above</td>
</tr>
<tr>
<td>document distribution</td>
<td></td>
<td>Private sector: See above</td>
</tr>
<tr>
<td>Container of legal</td>
<td>Markup vocabularies</td>
<td>Public and private sectors:</td>
</tr>
</tbody>
</table>
The approach described above serves as a basis for the so called SLIM Project – Secure Legal Information Management – hosted by the Faculty of Law at Stockholm University that will run during the period 2002-2007. The SLIM project is founded mainly on previous practical and theoretical experiences of using SGML in the legal domain – the Corpus Legis project together with expertise from the Department of Information Theory at the University of Lund and Swedish Institute of Computer Science (SICS).

Because of the early stage of commercial tools that combine XML capability and digital security enhancing techniques, one aim of the SLIM Project is to have an impact on the development of future commercial XML tools for legal purposes.

6 Concluding remarks

This presentation is based on the standpoint that XML may be regarded as a tool for legal validity in a security context. A point is made of the fact that XML ought to be understood broadly and that the tool metaphor has implications beyond trivial physical and mechanical ones. The term “docware” may in this context be used as a label for XML-related technologies clarifying the chosen approach to document management in a given situation.

In terms of general development trends we have reflected upon how XML has become an integral part of modern infrastructures with obvious legal implications. More precisely, this has a bearing on modern means of data processing, documentation, communications and organisational forms.

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16 See e.g. Mac Cann, Sean, It may be secure but is it legal. In: XML Europe 2002, 20-23 May, Barcelona, Conference proceedings, p. 89 (full paper versions published on conference CD, see also xmleurope.com).

17 See further http://www.juridicum.su.se/slim

18 See further http://www.juridicum.su.se/iri/corpus
The fact that there are still so many legal uncertainties in terms of lack of foreseeability concerning legal validity of actions of various kinds calls for special attention. A pragmatic approach is presented in terms of regarding various XML characteristics as security enhancing factors. The attraction of combining XML with conventional security-enhancing methods lies in the need for transparent, content-dependent and context-sensitive management of legally relevant text units over time. Legal awareness in this context may indeed enhance trust in the information society.