LEOS study
European Parliament - 3rd May 2012
Identifying benefits deriving from the adoption of XML-based chains for drafting legislation
Clémentine Valayer
Agenda

- Context
- Aim of Project
- Description of work
- Solutions overview
- Case studies
- Conclusions and recommendations
ISA: ‘Interoperability Solutions for European Public Administrations’ supports and promotes

... Creation and improvement of common frameworks in support of interoperability across borders and sectors;

...Improvement of existing reusable generic tools as well as the establishment, provision and improvement of new reusable generic tools.

http://ec.europa.eu/isa/workprogramme/index_en.htm

Legislative editing open software - Action 1.13 - Trusted Information Exchange
Aim of project

• Get a better understanding of the way public administrations address the issue of drafting their legislations

• with a view to identify best practices, improvements and areas where common efforts and developments are possible.

• Current phase: to identify trends of existing practices (As Is) and planned initiatives in Member States regarding legislative editing software.

• Next phase: to be defined at the outcome of this study
Aim of project

• Mapping of the As Is of usage methods and tools for legislative editing software.

• Lessons learned adequacy and efficiency - use of off the shelf editing software

• On-going efforts and their outcomes for common frameworks for structure of legal texts

• Recommendations for future actions
Task 1: Preparation
- Questionnaire elaboration
- Identification of stakeholders
  - Expert networks:
    - ISA national experts
    - National parliaments
    - National publications offices (OP network)
  - Desk search
    - Research projects, published papers, ...

Task 2: Feedback analysis
- Questionnaire replies
- Case studies (in-depth analysis)
- Workshops
- Overview for potential future actions
Description of work

- **Overview:** a mapping of various characteristics
  1. Usage and users of the solutions
  2. Type of text produced
  3. Level of constraint on user’s input, level of structure of information, interoperability
  4. Analysis of Functionality (Editing, Checking, Metadata, archiving, signing, importing, formats, content, Multilingualism, other)
  5. Re-usability of the solution
  6. Advantages and disadvantages
  7. Future developments

- In depth case studies
• Context
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... ideally:

- User friendly interface and possibility to be used by general user (legislative author) without specialize IT knowledge
- Structuring of legal documents according to drafting rules and possibility to check of formal and legislative validity.
- Structure (schema) based on standards to allow maximum of interoperability.
- Covering needs of legislative process from initial draft to promulgation.
- Change management including drafting in consolidated version and (semi)automatic consolidation of legislative texts.
... solutions actually implemented: a wide diversity in usage, coverage of needs and technology used.

- Fully integrated systems from the initial drafting to the publication / specific tool only for amendments
- Custom developments based on off-the-shelf software (office tools or XML editors) / complete custom development.
- For some: drafting and publishing is linked to the use of a structure based on standards (XML schema)

=> Features vary in terms of: functionality, user-friendliness, efficiency of drafting and quality of the text, the need for additional resources to check texts after drafting, re-usability of data, etc.
**Solutions overview**

- **Text editors based on word processors**
  - Existing word processors (MS Word, Open Office, etc.)
  - Internal format (.ODT, DOC, DOCX, etc.),
  - With custom development (add-ons, macros etc...)
  - They *can also* provide semantic check of the document, convert and validate it according to the chosen XML schema and import and export XML files.

- **Editors based on a native XML editor**
  - Editors check at all times for compliance with the rules of the standard XML schema.

- **Web-based editors**
  - Text editors on the Web with XML markup.
• Editors based on word processors
  - Not using XML (or only export)
    Šablony.CZ / PTJ.FI / .UK-N.le / BAS.UK-Sc / .LT / .CH / eNorm.DE
  - Using XML
    AF.UK / eRecht.AT / LexDania.DK / LWB.IE / LWB.UK-Wa

• Editors based on a native XML editor
  • VexPro.EE / xmLegesEditor.II / Wetseditor.NL

• Web-based editors
  • AT4AM.EP, Wetseditor.NL.
• 70% of the solutions are based on word processors
• 70% of the solutions use XML
• There is a move of all solutions towards using XML.
• Word processors using XML are mature solutions, and some cover all needs.
• XML editors - a priori validation, use not widespread
• National schemas exist, do not comply to an international standard
• An emerging international standard: Akoma Ntoso (OASIS LegalDocML)
  - Tries to provide for all documents
  - Basic structures and needs covered
  - Needs improvement
Solutions overview

- Solutions based on word processors
  - Disadvantage:
    - miss validation during drafting
  - Advantages:
    - import and export XML files
    - semantic check of the document
    - convert and validate it according to the chosen XML schema.
    - use of an internal format (e.g., ODT, DOC, DOCX, etc.): different XML standards at the conversion stage;
    - user-friendly interface;
    - drafting without interruption by error messages
Editors based on a native XML editor

Disadvantages are:
- limitation of the end-user work (no freedom / innovation)
- the user must mark up following the logic on which the XML standard is based.

Advantages are:
- Constant check of the structure: changes made to a correctly structured text produces a correctly structured text

Web-based editors

Disadvantages are:
- dependent on the Internet, no offline,
- Are currently used for limited functionality

Advantages are usability, clear interfaces and ease of use
• Context
• Aim of Project
• Description of work
• Solutions overview
• Case studies
• Conclusions and recommendations
1. Analysis of structure management in two tools based on word processors: eNorm (DE) and Lex Dania (DK)
2. XMLisation methods and processes, the need for them, desktop tools and their re-usability.
3. Bungeni, desktop - legislative mark-up (Open Office)
4. SOLON II (FR) open source desktop editor and DMS supporting the legislative process
5. Vexpro (EE): a desktop XML editor for editing legislative texts
6. Wetseditor (NL) - a Web XML editor for amendments
eNorm

- Applying the eNorm structure
  - Functional aspects (user guidance, document structure check, cross referencing)
  - Technical aspects (design principles, supporting another structure)

- Benefits and trade-offs
  - User-friendliness (User guidance, freedom of drafting, word processor)
  - Structure not imposed (ensuring the use of the tool, no a priori validation)
  - Adapting the tool and the structure to users’ new needs (supporting exceptions, support of a National standard - xNorm)

- Annex: eNormDocument Quality Check

Case Study 1: Analysis of structure management in tools based on word processors
Fertigkeiten, die der Planung oder Durchführung einer der in Absatz 1 genannten Straftaten dienen.

2. Waffen, Staffe oder Vorrichtungen der in Nummer 1 bezeichneten Art herstellt, sich ein oder anderen verschafft, verwahrt oder einem anderen überlässt,

3. sich Gegenstände oder Staffe verschafft oder verwahrt, die für die Herstellung von Waffen, Staffen oder Vorrichtungen der in Nummer 1 bezeichneten Art weSENTLICH SIND.

4. für deren Planung oder Durchführung nicht unerhebliche Vermögenswerte sammelt, entgegennimmt oder zur Verfügung stellt.

(3) Absatz 1 gilt auch, wenn die Vorbereitung im Ausland begangen wird. Wird die Vorbereitung außerhalb der Mitgliedstaaten der Europäischen Union begangen, gilt dies nur, wenn sie durch einen Deutschen oder einen Austräger mit Lebensgrundlage im Inland begangen wird oder die vorbereitete schwere strafrechtliche GeWalttat im Inland oder durch einen Deutschen begangen werden soll.

(4) In den Fällen des Absatzes 3 Satz 2 bedarf die Verfolgung der Ermittlungen durch das Bundesministerium der Vervollkommnung. Wird die Vorsehung in einem anderen Mitgliedstaat der Europäischen Union begangen, bedarf die Verfolgung der Ermittlungen durch das Bundesministerium der JusTiz, wenn die Vorbereitung durch einen Deutschen erfolgt, noch die vorbereitete schwere strafrechtliche GeWalttat im Inland oder durch einen Deutschen begangen werden soll.

(5) In minder-schweren Fällen ist die Strafe Freiheitsstrafe von drei Monaten bis zu fünf Jahren.

(6) Das Gericht kann Führungsaufsicht anordnen (§ 86 Abs. 1), § 73d ist anzuwenden.
Case study 1: Analysis of structure management in tools based on word processors

- Lex Dania
  - Lex Dania schema and user interaction
    - Schema, User-friendliness, Lex Dania in the European context
  - Benefits and trade-offs
    - Reduced errors
      - working in a structure,
      - learning to use a structure,
      - broad variety of users,
      - adapting the structure to users’ needs,
      - ensuring the use of the tool and the structure
  - Using word processors
    - functionality from Word processors,
    - formats and Vendor lock-in issues
Case study 1: conclusion

- Both provide user guidance through a structure
- eNorm: a framework for applying a structure
  - extensive user guidance through functionality, freedom of drafting, structure compliance during drafting by developing functionality to support the user
- Lex Dania - an approach to imposing a structure
  - drives the user directly into the structure, reduced drastically the structural error rate.
  - Users are not imposed to use the tool - can outsource (and pay) the conversion to the XML schema.
- Common challenges:
  - vendor lock-in, maintenance
  - constant adaptation to users’ needs (new functionality, new document types, new schema).
Case study 2: XMLisation (1)

- **Sdu XMLisation process**
  - Overview of the publication workflow of legislative documents
  - Converting to XML
  - The need for XMLisation after drafting
  - Developing the XMLisation heuristics
  - Efficiency of the XMLisation process

- **The XMLisation process for European Parliament amendments**
  - Overview of the amendment workflow
  - Converting to XML
  - Benefits and efficiency
Case study 2: XMLisation (2)

- The mark-up of a document with the Norma Editor
  - Converting to XML
  - Re-usability

- The mark-up of a document with xmLegesEditor
  - Converting to XML
  - Efficiency - accuracy evaluation
  - Re-usability
    - An architecture designed for adaptability and contribution
    - xmLegesCore: a generic and application independent Visual XML editor
    - Use of open standards
Case study 2: XMLisation conclusion

• Need and benefits for XMLisation in the context of publishing, amending and legacy management.
  • Various techniques highlighted
  • Re-usability - one of them: best practice
    - sound architecture design, use of open standards,
    - no vendor lock-in to ensure adaptability of the tool to a large user base.
  • Challenges linked to language dependency of solutions (some mark-up techniques are based on probabilistic heuristics: the machines need to learn from correct documents).
  • Expertise and time needed, experience to be built with the specific documents to be XMLised and with the specific schemas to be used.
Case study 3: Bungeni, an open source desktop editor for legislative mark-up based on Open Office

• Applying the structure
  - Functional aspects (a mark-up tool, the editor user interface)
  - User-guidance for applying the structure (Various document types, creating a document, checking a document)
  - Technical aspects (structure with high granularity, creation of the structure, managing document types, conversion to Akoma Ntoso, use of Open Document Format, architecture)

• Benefits and trade-offs
  - Structure not imposed
  - Desktop application
  - New project (small user base, expert contributors, enhancement of functionality and architecture)
  - Customizable and re-useable (customisation, Open source project, Multilingualism, Use of open standards
  - Use of a word processor
NATIONAL ASSEMBLY

OFFICIAL REPORT

Wednesday, 13th July, 2011

The House met at thirty minutes past Two o’clock.

[Mr Speaker in the Chair]

PAPERS LAID

The following Papers were laid on the Table:


Annual Report and Accounts of Jomo Kenyatta University College of Agriculture and Technology for the year ended 30th June, 1990 and the Certificate thereon by the Auditor-General (Corporations)

Audit Report and Accounts of Higher Education Loans Fund for the year ended 30th June, 1983 and the Certificate thereon by the Auditor-General (Corporations)
Case study 3: Bungeni - conclusion

- Production version is not yet available
- Focuses on the mark up of legislative documents (planning additional functionality)
- High re-usability and customisation
  - architecture design
  - use of open standards
- open source tool, source code, detailed documentation, complete collaborative development environment
  - => transparency in project management
  - enhances options for contributors to join the community.
- uses Akoma Ntoso as export XML schema format,
- benefits form expert contributor community active in various projects worldwide linked to Akoma Ntoso
Case study 4: SOLON II open source word processor and document management system support the legislative process.

- **Description of the solution**
  - Components
  - Functional aspects
- **Users and change management**
  - Users
  - Change management
- **Benefits and needed improvements of the new solution**
Relative à l'appui aux projets de développement des territoires

VERSION

Verrouillé le 28 novembre 2011, par documentalistemin

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Case study 4: SOLON II - conclusion

- Solution designed according to the business needs
  - reengineering of the work processes
  - specific templates for each type of document
- Freedom of drafting (word processor, validation on upload)
- Some user guidance
  - choosing the right templates and ensuring metadata is encoded
  - but a legal expert chooses the templates to be included in a file.
- Drafters do not see what further changes are made to texts
- Change management:
  - high level of involvement in fine-tuning the requirements and communication at the main milestones
- Use of word processor:
  - risk for roadmaps and support (Libre Office).
  - interoperability frameworks recommend specific document formats (need to be implemented by the word processors).
Case study 5 Vexpro: a desktop XML editor for editing legislative texts

• Rational for an XML editor
  - Estonian public sector imposes use of XML for all records management

• Users
  - Consolidation

• User friendly editing in a complex structure
  - User-friendly schemas
  - Clear interface
  - Editing a document
  - Metadata
  - The document check and user support

• Advantages and drawbacks

• Re-usability
Case study 5 Vexpro: conclusion

- Currently used only for consolidated texts – will be used in the future for drafting (not yet implemented)

- Allows users to edit XML in a user-friendly manner

- Re-usability of this open source tool is not very high
  - architecture design,
  - availability of information regarding the development of the tool
  - no transparency of project management
Case study 6: Wetseditor - a Web XML editor for amendments

- **User benefits**
  - Direct view of effects of amendments on consolidated texts
  - Editing errors reduced
  - Transparency of the drafting process
  - Automatic formulation of amending instructions

- **User-friendly editing in a complex structure**
  - User friendly schemas, editing interface and functionality

- **User involvement and change management**
  - Core user group, planning the pilot with right features
  - Meeting users’ needs, defining user-friendly schemas
  - Fine-tuning the formulation of amending instructions
  - Governance for the usage of the tool

- **Benefits and trade-offs**
Wetsvoorstel Eerste Kamer

Artikel 175
1. De besloten vennootschap met beperkte aansprakelijkheid is een rechtspersoon met een in een of meer overdraagbare aandelen verdeeld maatschappelijk kapitaal. Aandelen worden niet uitgegeven. De aandelen zijn niet vrij overdraagbaar op naam gesteld. Een aandeelhouder is niet persoonlijk aansprakelijk voor hetgen in naam van de vennootschap wordt verricht en is niet gehouden boven het bedrag dat op zijn aandelen behoort te worden gestort in de verliezen van de vennootschap bij te dragen.

![Wetseditor screenshot]

Artikel 178

2. Het bedrag van het maatschappelijke en het geplaatste kapitaal en het gestorte deel daarvan moeten bij de oprichting, alsmede het nominale bedrag van de aandelen, minstens de minimaal kapitaalbedragen (Red. Bij SB 2000/321 is dit bedrag m.w. 1 september 2000 vastgesteld op 18.000 euro) dat bij het kapitaalbesluit is vastgesteld. Het minimumkapitaal wordt ten hoogste eenmaal aandelen kunnen leden in de twee-jarige periode.
Case study 6 Wetseditor conclusion

• Powerful tool for managing amendments with high added value functionality.

• User-friendliness of the interface and functionality

• Strong need for change management
  - including a core and key user group to the project (define the user-friendly schemas, fine-tune the automatic formulation rules)
  - lesson learned: the prototypes used during the pilot phase needs to provide enough functionality for the pilot phase to be a success.

• Use of the tool not imposed - XMLisation later (for a fee).

• High functionality - proprietary web XML editor + web
  - Web application: openness of standards, ease of maintenance.
  - Proprietary editor creates potential vendor lock-in issues.
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Solutions based on word processors

- Can provide semantic check of the document, convert and validate it according to the chosen XML schema and import and export XML files.
- Freedom of drafting (complying to a structure: another step)
- Internal data format => different schemas
- User-friendly templates to apply a complex structure
- Different levels of constraint - different solutions
- eNorm: on the fly structure checks - suppress additional step.
- Linked to another solution (double maintainability)
- Choice of a document format
- Used for drafting, and for mark-up of existing documents
- Template and schema management not for common users
Solutions for user-friendly XML editing

- Check at all times for compliance with the rules of XML schema.
- From a valid document, only valid documents can be produced
- User-friendly interface (WYSIWYG), high usability
- Web or desktop
- Used for XMLisation, in Parliament and in Publications
- High added value features (automatic consolidation during drafting, amendment generating)
- Less guidance functionality (semantic check)
- Need to be online for work on a same document
- Sub-schema and document type creation not for common users
- Edit only XML => no conversion from/to other formats
The need for a structure

- **Use of XML**
  - **Move towards XML**
    - Applying a common structure
    - Open standard for interoperability
  - **IPEX study:** almost half of parliaments use XML, and almost half plan to introduce XML for parliament documents
  - **Case studies:** need for XML at publishing (and before), strong benefits for editing content in XML
  - **Solutions for XML mark-up**
  - **Existing standards for structuring are XML schemas**
  - **LEOS good practice, main and common trend**
Standards and use of a common schema: a use case?

- MS: no (transposition of Directives on existing laws)
- Lack of good practices for re-use of legal texts (cross border)

... but

- Emerging of common initiatives (ECLI, ELI)
- Parliaments interested in making their XML documents compatible with XML documents produced by other Parliaments or institutions
- Rational for IO in EU: Open Data and PSI directive
- Example: publishing of all Dutch legislation under MetaLex and linked data
- OASIS LegalDocML TC (Akoma Ntoso)
- LEOS good practice: use of Akoma Ntoso
  - Case law and common law
  - Various types of amendments
The need for diverse tools

- Support and freedom of drafting as important as structuring
  - Various tools for various needs (amending, drafting...)
  - Tools used from draft to publication = word processors + XML
  - XML editors not used for drafting (not yet?)
  - Use of XML editors not imposed
  - Drafting tools with XML export search for managing exceptions in XML
  - Use of word processors because of existing editing functionality
  - XML editors: less functionality supporting drafter
  - Drafting tools with word processors search for on the fly structure checks (no extra step)

- The need of freedom of drafting is as important as the need to comply to a structure,

- (Currently identified) tools editing in a structure are not meeting the needs of drafters.
The need for diverse tools

- One process, two cultures
  
  "There is a need for XMLisation, but one does not want legal drafting rules to block political or legislative work. A tool cannot simplify these rules, formalness and validity should be only a final goal. XML is an export."

- Producers of text
  
  - Conservative user base
  - Benefits of a mark-up tool

- Working on existing texts
  
  - Amending, consolidating, translating
  - Benefits of an XML editor
LEOS phase 2

- Provide tools (proof of concept)
  - Drafting and mark-up tool
  - Amendments and consolidation tool
- Use a common structure
  - Akoma Ntoso - LegalDocML
    - Evaluate use in MS needing a schema (workshop)
    - Evaluate compatibility with existing schemas in Parliaments (workshop)
    - Evaluate scope of use at European Commission
    - Join OASIS TC
LEOS Phase 2

- Implement and test (a) Proof of Concept(s)
  - Drafting, editing and mark-up
  - Amendment / consolidation
- Participate in defining functionality and type of tool

- Interested?
Thank you