How to use Open Source in Digitization Projects
The Kitodo Refactoring Update.
Challenges of a distributed development in an open source community.

Michael Luetgen
Sales Manager Software Solutions, Zeutschel
Kitodo Association Board Member

IFLA News Media Group Meeting Landsbókasafn Íslands – Háskólabókasafn
(The National and University Library of Iceland)
Reykjavík, Iceland
27-28 April 2017
What is Kitodo?

overview


2. A growing community of users, software developers and service companies.

3. A legal entity and association: „Kitodo. Key to Digital Objects e.V.“

- Production + Presentation (independently usable)
- Open Source – no license cost
- Multi-client capability, flexible operating models
- Platform independent, web based
- International Standards, open interfaces (METS/MODS, OAI-PMH2 -> DDB, Europeana, DPLA, DFG-Viewer, Catalog)
- APIs for integration of additional services (OCR/OLR, LTP, NER, scan software, ...)

KITODO

software architecture
1. Software - Kitodo.Production

- Workflow Management
- Metadata Import from existing catalogs or other sources
- Structure-/Metadata Capturing
- Flexibility by Rule Set, Project Configuration, Workflows
- Automated and external workflow steps are possible and integrable (OCR/OLR, NER, Validation, ...)
- granular right management
- Java-Web Application
1. Software - Kitodo.Production

production - example
1. Software - Kitodo.Presentation

- Presentation Interface
- Collection Organization, Search Index (Lucene), (incl. Facetted Browsing, Full Text)
- Visualization of Meta- and Structure Data, Image-Viewer
- Flexibility by free field configuration (Index + Interface)
- Granular Right Management in the Backend
- Modern Templating-Engine, seamless Integration with Institution Website or Portal
- Modularization
- OAI-Interface, URN-Registration
- TYPO3-Extension (PHP5)
1. Software - Kitodo.Presentation
2. User Community

- Over 40 international Institutions and Service Providers
- Mutual Support via mailing lists
- Public Documentation
- Users meetings
- Common ongoing development and coordinated development orders
- Relevant creation of format standards
- Synergy effects towards aggregators
2. Visions of the Community

- Archives, Libraries and Museums developing, sharing and using in multi-discipline manner tools for digitization and long term preservation.
- Kitodo is a widely used, sustainable standard solution for the production and presentation of digital collections – open source, platform independent and license free.
- Kitodo is a strong international community and a model for the cooperation of the public and private industry.
3. Kitodo. Key to Digital Objects e.V. - The Association

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>12/2010</td>
<td>4 big libraries and Zeutschel signed a Goobi Release Management Agreement and started regular meetings as a Goobi Community Board</td>
</tr>
<tr>
<td>03/2011</td>
<td>Begin of the half year open Goobi users meetings</td>
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<tr>
<td>05/2011</td>
<td>Agreement of the Goobi Community Board with intranda GmbH about future cooperation</td>
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<tr>
<td>09/2012</td>
<td>Establishment of the Goobi Association with 12 Libraries and private Companies</td>
</tr>
<tr>
<td>01/2013</td>
<td>Registration in the German Association Register</td>
</tr>
<tr>
<td>06/2016</td>
<td>Name change to Kitodo</td>
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</tbody>
</table>

[www.kitodo.org](http://www.kitodo.org)
3. Kitodo e.V. Association contributions

- Legally clearly defined form with legal regulations - both internally and externally.
- Financial and political stability – Independency from single persons or institutions.
- Basically democratic Organization form with similar rights and duties for all members.
- Tax advantages (Sponsoring)
- Limitation of liability risks.
- Enhanced visibility of Kitodo and the Kitodo User Community
- Formal framework for regulated cooperation of the members.
3. Kitodo e.V. – Organization

- Association Board (5 members)
  - Political representation of members
  - Public Relations
  - Coordination of strategic decisions

- Release Management
  - Code administration on github.com
  - Coordination of developments
  - Controlling of formal development rules (Coding Guidelines)
  - Documentation of bugs and development wishes
  - Release-Planning and –Implementation
  - Technical consulting of the Kitodo Board

github.com/kitodo/
4. Future Developments

- METS/MODS-Profile for digitalized Archive material
  - EAD -> MODS-Mapping
  - Implementation in DFG-Viewer
  - Coordination with Software-Vendors archive Systems

- EAD-Import to Kitodo
  - Overtaking of metadata from find books
  - Import of existing structure data
  - Test with the Kalliope-Central Catalog

- Standardization of Rights Coding
  - granular Rights and License access on object level
  - Standardized Coding
  - Implementation to Presentation System
4. Future Developments

kitodo development

- Kitodo.Publication
- Kitodo.Preservation
- Interface to docWorks (CCS) for article level workflow
- Re-factoring of the complete production system (DFG)
4. Future Developments
Challenges of cooperative development in an open source community

- Development planning and controlling
- Programming guide lines
- Programming in institutions, companies and free developers
- Communication in a distributed environment
- Cooperation between public institutions, private companies and free programmers
- Cooperation between competing companies
- Sustainability – especially in sense of support, maintenance and updating
- Budget “finding”
- Crowd Funding
5. Kitodo.Production new

Kitodo.Production re-factoring as a common project in the next 2 years

1.3 Mio. EURO are agreed by the DFG

4 consortia partners:
- Saxonia State Library, Dresden
- Humboldt University, Berlin
- State and University Library, Hamburg
- North Academy, Elmshorn

Steps:
- Definition of roles and responsibilities
- Project management
- New system architecture
- Tenders for packages
- Integration of companies and free developers in the project
- Controlling tools
5. Kitodo.Production new
Kitodo.Production re-factoring as a common project in the next 2 years
kitodo.development

<table>
<thead>
<tr>
<th>Development package</th>
<th>Responsible</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Modularization and interfaces</td>
<td>SLUB</td>
</tr>
<tr>
<td>1.2 Kernel and Workflow-/Project Management</td>
<td>SLUB</td>
</tr>
<tr>
<td>1.3 Rights and roles system</td>
<td>SLUB</td>
</tr>
<tr>
<td>1.4 Data modularization</td>
<td>HUB</td>
</tr>
<tr>
<td>1.5 Data management</td>
<td>SLUB</td>
</tr>
<tr>
<td>2.1 Hierarchical relations</td>
<td>SUB Hamburg</td>
</tr>
<tr>
<td>2.2 Media typological expansion (TEI / EAD etc.)</td>
<td>SLUB</td>
</tr>
<tr>
<td>2.3 Support for additional image formats</td>
<td>HUB</td>
</tr>
<tr>
<td>3.1 Improved operating concept</td>
<td>NAK &amp; SUB Hamburg</td>
</tr>
<tr>
<td>3.2 Editor for Meta- and Structure Data</td>
<td>NAK &amp; SUB Hamburg</td>
</tr>
<tr>
<td>3.3 Localization and Administration</td>
<td>NAK &amp; SUB Hamburg</td>
</tr>
<tr>
<td>3.4 Documentation</td>
<td>HUB</td>
</tr>
<tr>
<td>3.5 Migration Scenarios</td>
<td>HUB + SUB Hamburg</td>
</tr>
</tbody>
</table>
5. Kitodo.Production new Scrum -Model

Kitodo-Board (KV)

Continuous updates by PO and consulting if needed

ProductOwner (PO)
SUB Hamburg

Consulting the PO to ensure the new system architecture

Stakeholder Team

Representatives from Libraries, Archives and Service Bureaus for consulting the PO

System Architect
TU Braunschweig

Distributed Developer Team

Participants in ScrumProcess

ScrumMaster
SLUB Dresden
5. Kitodo.Production new
Development Organization and dates

- Every 2 weeks Sprint Meetings (video conference) of the relevant people.
- Integration of private industry in the meetings after development contracts.
- First development tender is public now – decision beginning of May 2017.
- Next tenders should follow asap.
- Regular Onside meetings (Dresden, Berlin or Hamburg) will follow.
- Project and implementation plan will follow mid 2017.
Kitodo

More information:

www.kitodo.org

https://github.com/kitodo

www.zeutschel.com