Business models for open-source software

Evelyn McLellan
Artefactual Systems Inc.

PREFORMA Innovation workshop
Padua, March 2017
Open-source tools for digital preservation: a (highly selective) timeline


Fedora
DSpace
Heritrix
WayBack Machine
Archivists’ Toolkit
Archon
Hydra
Archivematica
DataAccessioner
BitCurator
BlackLight
Islandora
veraPDF
DROID
MediaConch
DPF Manager

LOCKSS
JHOVE
AtoM
FIDO
ArchivesSpace
ePADD
Bagger
Dataverse
RODA
iRODS
Exactly
There are lots of open-source tools
Open-source software: definitions
Open-source software: community and code
Open-source software: documentation and support

Archivematica documentation

Getting started
The getting started manual is intended for users who are considering implementing Archivematica as a digital preservation solution. This manual includes information on the Archivematica project as well as a quick-start guide to help new users test it out. For information about installing and using Archivematica in a production environment, see the user or administrator manuals below.

OVERVIEW
The overview section provides a definition of Archivematica and a description of the OAIS model on which it is based, its technical architecture, the microservices framework, and information about system requirements for deploying Archivematica.

• What is Archivematica?
• Web-based dashboard
• Technical architecture
• Micro-services
• System requirements

QUICK-START GUIDE
Open-source software: governance
OPF’s software maturity model:
http://openpreservation.org/technology/principles/software-maturity/

<table>
<thead>
<tr>
<th>Community</th>
<th>OPF-Production</th>
<th>OPF-Labs</th>
<th>OPF-Attic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Active bug reports/fixesNamed maintainerContribution guidelines</td>
<td>Active bug reports/fixes</td>
<td>[no expectation]</td>
</tr>
<tr>
<td>Documentation</td>
<td>Source code commentsTechnical documentationInstallation manualsUser documentationMicrosite</td>
<td>Source code commentsTechnical documentation</td>
<td>Statement describing why the software has been retired (by original developer or software curator)</td>
</tr>
<tr>
<td>Code quality</td>
<td>Test coverage 50% &gt; 80+%Continuous integrationPublishing test results</td>
<td>Test coverage c.50%Continuous integration</td>
<td>[no expectation]</td>
</tr>
<tr>
<td>Deployment</td>
<td>Build from sourceDefined platformsAutomated packaging (e.g. DEB/RPM/EXE)</td>
<td>Build from source</td>
<td>[no expectation]</td>
</tr>
<tr>
<td>Support</td>
<td>Online demonstratorVirtual machine imageTraining materials</td>
<td>[no expectation]</td>
<td>[no expectation]</td>
</tr>
<tr>
<td>Licensing</td>
<td>Defined open source licence</td>
<td>Defined open source licence</td>
<td>Defined open source licence</td>
</tr>
</tbody>
</table>
The open-source ecosystem

- funding agencies
- developers
- users
- non-profit organizations
- private companies
- leading implementers
- standards organizations
The open-source ecosystem

- How does the creation or modification of standards relate to the development of open-source tools? Should standards be created with software development in mind?
The open-source ecosystem

➢ Funding agencies play a key role in open-source software development, but what is their role once the tools have been developed?
The open-source ecosystem

 Assertions:

 ➢ Developers work for non-profit organizations or private companies. They may also work for leading implementers, or simply be technically-minded users.

 ➢ Leading implementers are institutions that provide community support, funding and/or development. These tend to be universities and research institutions.

 ➢ Having a large pool of users is a sign of software maturity and stability.
The open-source ecosystem

➢ These organizations provide sustainability for mature open-source software tools by offering software development and release management, hosting, tech support, data migration, training, consulting, documentation, user forums and other critical services. However, finding a viable business model can be a challenge.
Some open-source business models

- When grant funding ends or doesn’t cover all costs, there are different ways of making open-source software viable and self-sustaining. Here are three common models:
  - Membership model
  - Bounty development model
  - Services model
Open-source business models: membership model

➢ The software is free and open-source but purchase of a membership allows users to gain access to certain privileges or services. Some membership models mean that only members get access to certain types of documentation, training materials, issue reporting systems and/or member-only user forums. Other membership models provide privileges such as a role in governance, discounts on training and meeting events, but don’t restrict documentation etc. Examples:
  ○ Lyrasis (ArchivesSpace, CollectionSpace)
  ○ BitCurator Consortium
  ○ DuraSpace (DSpace, Archivematica, DuraCloud, Fedora)
  ○ Islandora Foundation
  ○ Open Preservation Foundation (JHOVE, Jpylyzer, FIDO, xcorrSound)
  ○ LOCKSS Alliance

➢ The money raised is used to support continued development and software release management
Open-source business models: bounty development model

- The software is free and open-source but development of new features and enhancements depends on one or more institutions providing funding. The new features and enhancements are added to subsequent public releases of the software. Examples:
  - Artefactual Systems (Archivematica, AtoM)
  - Data Curation Experts (Hydra, Blacklight, Fedora)
  - DiscoveryGarden (Islandora)
  - Hudson Molonglo (ArchivesSpace)
Open-source business models: services model

- The software is free and open-source, but there are organizations that provide related services such as hosting, technical support, data migration, consulting, training and customization. These organizations may or may not be the lead developers of the tools. Examples:
  - Artefactual Systems (Archivematica, AtoM)
  - DuraSpace (DSpace, Archivematica, DuraCloud, Fedora)
  - DiscoveryGarden (Islandora)
  - Cottage Labs (Hydra, Fedora)
  - AVPreserve (Archival Management System, Exactly, Fixity + other tools)
  - KEEP Solutions (RODA, DSpace + other tools)
Other open-source business models

➢ Franchising model: The software is free and open-source, but the name and logo(s) are proprietary and can only be used with permission. The owners of the name and logo(s) sell the rights to organizations to provide technical support, hosting and customization services. Not prevalent in the digital preservation community.

➢ Proprietary add-on / “freemium” model: The software is free and open-source, but organizations develop proprietary add-ons or plugins or have “enterprise” or “professional” versions that add more functionality or scalability. Not prevalent in the digital preservation community.
Where do YOU fit in?

- funding agencies
- developers
- users
- non-profit organizations
- private companies
- leading implementers
- standards organizations
Thank you