DESIGN FOR OPEN ACCESS PUBLICATIONS IN EUROPEAN AREAS FOR SOCIAL SCIENCES AND HUMANITIES

Technical mapping of the OPERAS environment

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E-mail address	:	pierre.mounier@openedition.org
Website	:	http://operas-eu.org

DRAFT VERSION

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Contents

I. Objective

The technical mapping of OPERAS environment is meant to provide a global description of the technical, organizational and information systems within OPERAS consortium. More precisely, the mapping has collected detailed information about workflows, software, development languages, data and metadata management, dissemination and distribution tools.
The main scope was to identify similarities, compatibilities and possible interoperability.

II. Executive summary

A. Method

The technical mapping has been done through a questionnaire sent to the different partners. Each of them has been sent a table structured alongside the most common types of digital publishing activities.
As digital publishing is not standardized enough yet, a draft has been proposed to various individuals and profiles from the consortium and then collectively validated. The draft and the final version are loosely based on enterprise architecture concepts (see : https://en.wikipedia.org/wiki/Enterprise_architecture_framework).
The tables were the following:

- organization;
- activity;
- applications and services;
- information system;
- hardware;
- prospects.

B. Participants

- National Documentation center – EKT (gr)
  website: http://epublishing.ekt.gr/en
- Max Weber Stiftung – MWS (de)
  website: http://www.maxweberstiftung.de/startseite.html
- Open Access Publishing in European Networks – OAPEN (nl)
  website: http://www.oapen.org/home
- Open Book Publisher (en) – OBP

website: https://www.openbookpublishers.com/
- OpenEdition – OE (fr):
website: http://www.openedition.org/
- Open Libraries of Humanities – OLH (en)
website: https://www.openlibhums.org/
- SHARE press – SHARE (it) at University of Naples Federico II
website: http://www.sharecampus.it/1/share_press_966615.html
- Ubiquity Press – UP (en)
website: http://www.ubiquitypress.com/
- UCL press – UCL (en)
website: http://www.ucl.ac.uk/ucl-press
- Universität Göttigen – UGOE (de)
website: https://www.sub.uni-goettingen.de/en/electronic-publishing/goettingen-university-press/
- Università di Torino - UniTo (it)
website: http://www.oa.unito.it/new/

C. Other partners

Not relevant (no platform):

- Knowledge Unlatched (en)
- ISCTE (pt)
- CRUI (it)
- CNR (it)
- AEUP (fr)

No response:

- Zadar University (cr)
- Università di Venezia (it)
- CVCE (fr)

New partners:

- Coimbra University Press (pt)
- Humanum (fr)
- IBL PAN (pl)

III. Results

A. Preliminary remarks

This work represents a first identification of practices, workflows and tools within the OPERAS consortium. It is mainly a basic inventory. The categories used in the survey can and must be improved later through a collaborative process.
The responses are detailed and represent a reliable collection of all the information needed. Nevertheless, some answers indicate that the categories used for the survey were somehow too loose or too abstract. For instance, the questions about publishing on one hand and workflow on the other hand created some confusion and the same response could be found in each field. The metadata questions were uneasy to classify because of their several types and use, but this aspect has to be better formalized in order to have a better description of the data management process within the consortium. Compared to this first attempt, the main activities of the partners should therefore be defined anew in order to offer a better articulation between concepts and real practices.
For these reasons, we have decided not to follow the tables progression but to reorder the content of this report on the basis of the schema in Annex 1. This schema represents in a circular way the various activities and missions of the digital publishers involved in the OPERAS consortium.
The sections below are an adaptation of this schema to our technical content (see table “Functional architecture” in Annex 2). We will present the various functions from the more technical to the more abstract.

B. Information system

Development language, Database, Size limit, Hardware

Leaving aside the front-end languages (HTML, CSS, JS), the general information collected regarding the development languages is two-fold:

- a first group of participants benefits from an external IT system managed by their organization or a partner and don’t have information on the topic;
- another group is characterized by an in-house IT, that is an independent IT department or an operational autonomous set of IT skills (EKT, OAPEN, OBP, OE, SHARE, UGOE, UP).

In this second group, it could be useful, when many languages are indicated, to better know which use in what range is made of each language. In this way, it would be easier to imagine potential collaborations.
It is interesting noticing, however, that a majority of partners are PHP/MySQL users. With the exception of MWS (Python/Zope Object Database) and UGOE (XML publishing of Cocoon-Apache), all the others are using PHP alone or in combination with other languages.

The database and data size limit give us information about the present data management status and its possible evolution. For books and/or journals only, here are the database sizes:

- less than 1 GB (OBP, SHARE books, UGOE)
- around 2 GB (SHARE journals)
- around 15 GB (OE Books)
- around 30 GB (EKT, OE journals)
- 100 GB (MWS), 240 GB (UP)

These data should nevertheless be completed with additional information on the destination of the database and the existence or not of many databases for each DBMS.

Few but some partners indicated a data size input limit (EKT, OAPEN, UGOE, UP), ranging from 20 MB to 4 GB, and it could be interesting to know if it affects their practices and in which way.

As for the hardware, here is the essential distribution:

- Virtual Machines: OBP (2 VMs)
- Servers: MWS (2 rented servers), SHARE (3 servers), UGOE (1 server), UP (6 servers)
- Servers and VMs: EKT (2 servers, n VMs), OE (21 servers, 40 VMs)

C. Data and metadata processing

Indexing, Search functionality, Reference sets, Metadata standards, Identifiers

In this section are being gathered the processes which will create access points to the content or allow for its referencing.
The indexing of the content is mainly handled in an automated way by the participants. A certain number is using the full-text search provided by their publishing tool or repository application: OJS, OMP, E-prints or DSpace (EKT, SHARE, UniTo). Others are using a specific search engine like Solr (OE, UGOE) or Lucene (OAPEN). Some manual indexing is nevertheless used for completing the work of the application (UGOE, OBP) or for specific purposes (SHARE for Worldcat). Automated indexing also allows for a faceted search, but another set of questions could be useful in assessing the quality of the search functionality, especially by evaluating the results for each

facet. In fact, one participant indicates some poor results of the embedded search functionality of OJS/OMP.

A minority of participants also enrich their content with referenced subject headings: BIC, BISAC, VLB, LCSH (OAPEN, OE, UCL, UGOE). It is hard to assess how much these reference sets help the discoverability and if they are uneasy to maintain but maybe the concerned partners could give more information on this question.

Despite the similarities expected, the standard metadata used by participants are present with some variations (no one is using exactly the same set of standards); this could be looked at more closely in an interoperability perspective. As we are lacking information on the way these metadata are generated, it is hard to tell how difficult would be an adjustment; it is worth mentioning, though, some publishing tools allows for this generation (e.g. OJS). The main generated standards are: DC, MARC, ONIX - rarer are DCQ and MARC XML. Alternative standards are: METS, NLM, RFC1807, ESE and PICA XML. Leaving aside the various functions of the standards (DC for PMH, ONIX for distribution, etc.), it might be appropriate to give some more information about the specific use for each standard to check how much they are effectively interoperable.

Identifiers are another kind of metadata and we wish to outline the rather wide use of interoperable identifiers. Alongside the HIRMEOS group (EKT, OAPEN, OE, UGOE) where are being implemented DOI, ORCID and Funding registry, others already have DOI (soon MWS, OBP, OLH, SHARE, UCL, UniTO, UP) or ORCID (OLH, SHARE, UniTo, UP).

On a related topic, which could have been investigated in the survey, it is interesting mentioning one partner is providing persistent URLs for its content (MWS).

D. Publishing

Types, Number of documents, Printed copy, Publishing tools, Single source publishing

This section gathers the various elements of the OPERAS consortium central activity of digital publishing.
The majority of the participants publish more than one type of document. Far from being limited to the more traditional journals and monographs, the types of documents handled by the participants cover almost the whole range of academic production. Even if all the different kinds of documents are not taken care of in the same way, it is interesting noticing, in the perspective of the scholarly communication evolution, that some participants have expertise with different sorts of data. Alongside with proceedings, textbooks and thesis, we also find blogs, images, audio/video files,

software or, potentially, any kind of data. To be noted that sometimes the different types are handled with specific software, but this seems more related to the size of the organization (e.g. SHARE, UniTo).

The overall published content of the participants clearly gives a strategic position to the OPERAS consortium. One partner remains isolated by its size and its variety (OE), but it would be interesting to know the trends and perspectives of each partner.

The print-on-demand service among the participants is more present than one could think (OBP, SHARE, UCL, UGOE, UniTo). If needed, this could allow for collaborative work or counsel.

As for the publishing tools, the first observation is the rather wide use of PKP's software (OJS, OMP) among the partners (EKT, SHARE, UCL, UniTo and soon MWS). This also obviously opens possibilities of collaborations and it already does for some of them. As some participants in this group are not using only PKP's software for all their contents (UniTo, MWS) and others are using also different tools for their content (Lodel and Wordpress for OE), it might be interesting to investigate more in detail the relations tool/purpose and the reasons of the choices.
Another important aspect regarding the publishing tools is the development. Two partners are managing an entire publication process with their own software: OE (Lodel), UP (Rua/Jura). Others have a strong development activity (OBP) or have produced plugins (EKT, MWS). This could lead to fruitful technical collaborations useful to the OPERAS consortium.

The publishing tools analysis can also include the single-source-publishing question. If it seems easier to have a single pivot format with only one publishing soft (XML-TEI / Lodel for OE), other participants are also using as a pivot format the XML (MWS) or the PDF (UGOE). This aspect couldn't be detailed within the survey table but it surely must be developed by these partners.

Last observation to be clarified in the future: it wasn't always easy to tell what was the use made by the participants of each soft or application. There is maybe even here some detailed benchmark to conduct.

E. Dissemination

Distribution, Referencing, Harvesting, Metrics

The majority of the participants are using their own platform(s) to achieve their content's distribution (EKT, MWS, OAPEN, SHARE, UGOE, UniTo, UP). A smaller group is using other channels and, apart from one (OLH), it seems directly or partly related to their sales activity (OBP,

OE, UCL, UP). In the last case (OBP, OE, UP), the number of distribution channels is logically very high. Even if of minor importance, we can note that the latter (OE) is externalizing the distribution process to electronic bookstores.

As for the referencing, it is more difficult to identify specificities. The main referencing entities among the partners are: DOAJ, DOAB, EBSCO. Nevertheless, not every participant has its contents referenced in each one and some referencing is sometimes more limited (MWS, UCL, OLH). There is maybe some effort to make to have a more uniform referencing throughout the consortium.

On the other hand, almost every participant is maintaining an OAI repository for the harvesting protocol. Even if differences obviously exist between the sets or the standards used, this remains a solid basis for an effective interoperability.

The situation regarding the metrics appears rather disparate, even if some synergies seem possible. A certain number of partners is using or will use Google Analytics (OBP, OLH, SHARE, UCL, UP). Others are providing COUNTER statistics (EKT, OAPEN, OE, UniTo) - but some more information could be useful here as the production of COUNTER is rather complex for OE, while it seems automatic for UniTo with OJS. Some partners, finally, are using other applications: Piwik (MWS, OE, UP), Awstats (OE - soon completely replaced by Piwik), ALM metrics (SHARE).

F. Editing

Peer-reviewing, proofreading, type-setting

We put together in this “editing” section peer-reviewing, proofreading and type setting as being parts of the traditional publishing activity.
Although not always directly involved in this editing work, most of the participants have it integrated to their own workflow. The situations are quite diverse, being present the two extremes: from the participants who are not involved in editing (UniTO) to those who are traditional publishers (OBP). In between, we can find different levels of involvement.

As for the peer-reviewing, we can observe that the participants whose publishing activity is part of library services can participate more or less directly (UGOE, UCL). In the other cases, the peer-reviewing is a requirement or a recommendation (OE, EKT) - difference between these will have maybe to be clarified in ulterior surveys. The peer-reviewing of journals and books tend to be the same (e.g. 2 academic referees) but this also may need to be confirmed by each concerned participant.

Proofreading and type-setting are most of the time effectuated by the editor and the author. Nevertheless, the same participants involved in the peer-reviewing also do the proofreading or the type-setting (OBP, MWS), but they can also be externalized (UCL, OLH).

G. Workflow

Process steps, Formats management, Access rights

Being very different according to the statuses, the services and the organizations, the workflows used by the partners cannot be exactly similar. It was in fact difficult to give a clear and schematic representation of this section. Nevertheless, it should be possible to identify the tasks defining their mission, and more precisely their types, number and complexity.
The answers led to a first observation: those partners who use PKP publication tools (OJS, OMP) are heavily helped to structure and formalize their workflow. As though this gives a clear representation of the workflow, it is mainly “author-oriented” and doesn’t really focus on the digital publisher’s work (the “layout editor” in the OJS schema).
Even if such a schema wouldn’t be necessary for the OPERAS consortium, a short list of its main publishing activities would be useful to better assess the strengths and weaknesses of the workflows.
This list could be more or less the list of sections used in this report and is reflected by the various answers. For a better focus on the “who does what when?”, the list could be slightly summarized in these specific digital publishing steps:
- Editing: peer-reviewing (partly effectuated, verified, requested?); copy-editing / type setting (externalized or not?); linear or circular process; access rights to the platform for authors or editors?
- Admission: document taken as it is sent; document modified (another format? Which one(s) with which tool?).
- Enrichment: adding metadata (for search, for dissemination, for archiving?).
- Dissemination: production of the output formats for the platforms; specific tasks related to the distribution outside the platform.

These various aspects can of course be amended or completed, but they would give some sound elements to evaluate the length, the complexity and the efficiency of the digital publishing process.

H. Organization

Status, Funding, Budget

Although a bit outside the perimeter of a technical mapping, the organizational characteristics have technical implications: IT autonomy and size, ability to a changing of scale, HR availability, etc.
Basically, one dominant organizational model comes off from the survey: public status with institutional funding.
But we can notice the few exceptions:

- OAPEN: a not-for-profit foundation with public institutional funding;
- OLH: a charitable company whose funding comes from donations;
- OpenEdition: a public organization which receives institutional funding and freemium sales revenue;
- OBP: a CIC (specific UK status allowing profits for public good) funded by grants, membership and sales;
- UP: Private Limited compagny (APC/BPC and fees for books and journals financing)

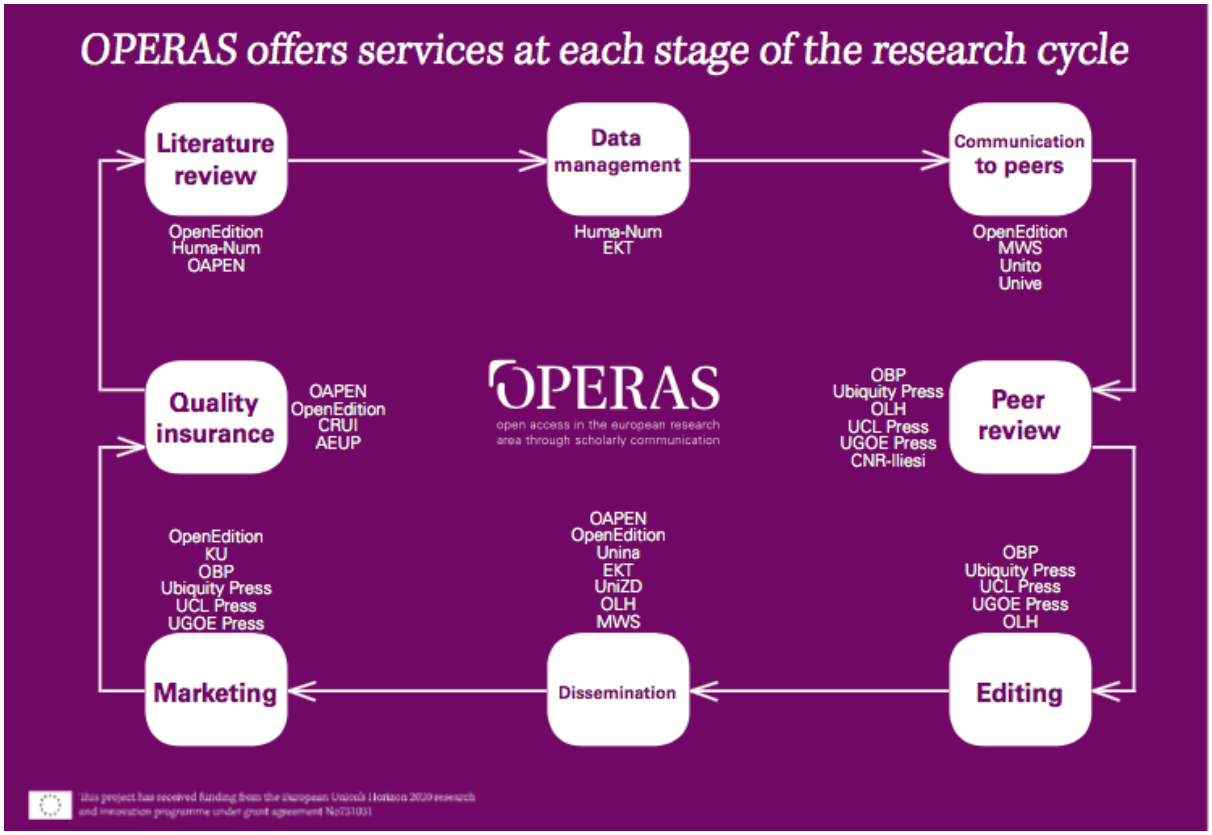
The information on budget were rather poor and they will maybe be collected in another occasion as it was slightly external to the technical investigation.

I. Prospects

A last set of questions tried to identify the interest of the partners for each other's features and tools or outside the OPERAS consortium.
It was probably a bit too soon to ask to the participants which technical interactions were possible for them with or within the OPERAS consortium; maybe this report will help to identify possible collaborations.
Among the few suggested collaborations, however, we can note the interest for the HIRMEOS implementations: identification, annotation, entity recognition (OBP, SHARE, UniTo). A partner would be interested in changing its method of publication by using OJS (OBP), already used by other partners. As possible prospects of development for the entire OPERAS consortium, some participants would like enrich their system with data mining or text analysis (SHARE, UGOE).

I. Annexes

A. Annex 1: OPERAS services



B. Annex 2: Digital publishing – Functional architecture

This table represents the digital publishing activities as functions; the “components” column lists the corresponding fields used in the table-based questionnaire.

Functions	Components
Information system	*Development language, Database, Size limit, Hardware*
Data and metadata processing	*Indexing, Search functionality, Reference sets, Metadata standards, Identifiers*
Publishing	*Types, Number of documents, Printed copy, Publishing tools, Single source publishing*
Dissemination	*Distribution, Referencing, Harvesting, Metrics*
Editing	*Peer-reviewing, Proofreading, Type-setting*
Workflow	*Process steps, Formats management, Access rights*
Organization	*Status, Funding, Budget, OPERAS FTE*

C. Annex 3: Abbreviations

BIC	Business Identifier Code
BISAC	Book Industry Standards and Communications
CIC	community interest company
CSS	Cascading Style Sheets
DBMS	Database Management System
DC	Dublin Core
DCQ	Dublin Core Qualified
DOI	Digital Object Identifier
HTML	HyperText Markup Language
IT	Information Technology
JS	Javascript
LCSH	Library of Congress Subject Headings
MYSQL	My Structured Query Language
OAI	Open Archive Initiative
OJS	Open Journal System
OMP	Open Monograph press
ORCID	Open Researcher and Contributor ID
PHP	Hypertext preprocessor

PMH	Protocol for Metadata Harvesting
TEI	Text Encoding Initiative
URL	Uniform Resource Locator
VLB	Verzeichnis Lieferbarer Bücher (« German Books In Print »)
VM	Virtual Machine
XML	Extensible Markup Language

II. Technical mappings

A. Introductory text

This document is meant to achieve the overall technical mapping of the OPERAS network.

It strives to list every technical aspect that could be useful for the future development of OPERAS.
The main parts of the survey are the following:

- Organization
- Activity
- Applications and services
- Information system
- Hardware
- Prospective

Each part corresponds to a specific table with detailed fields and subfields.
The answer fields are the white cells which contain some additional tips for the answers. You can overwrite these tips when answering.

As for the images requested, you can add them directly in the cell or send them in attachment with your survey completed.

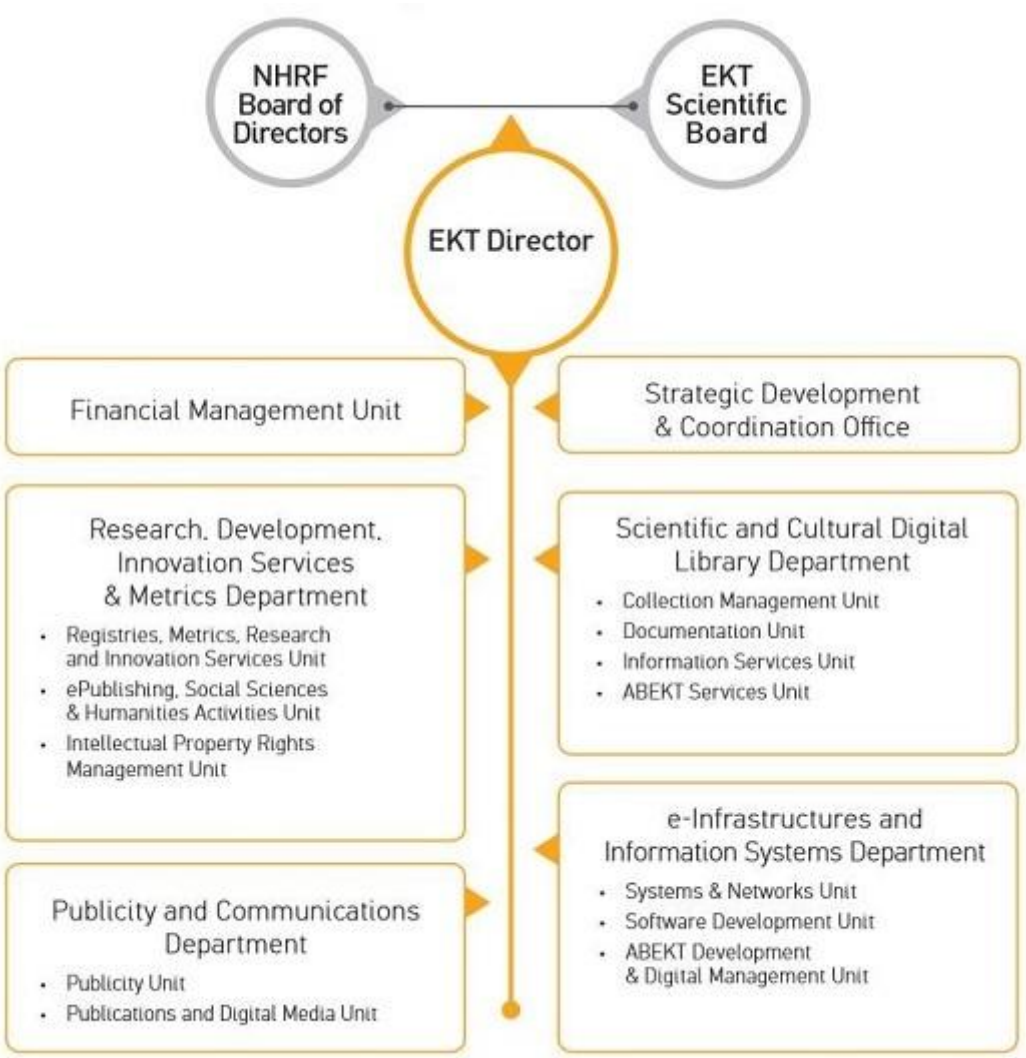
So as to allow major editing possibilities (images, bullet lists…), this document is not protected. Please try to use only the white cells without modifying the structure of the document.

This document will help us to complete the related deliverable 3.1 “Map of OPERAS technical environment”.
The deliverable due date is 30/06/2017 and the draft is expected for 30/05/2017.
Please send us your technical mapping before the 14/04/2017.

Thank you for your answers.

Don’t hesitate to contact us if you have any question.

B. EKT

ORGANIZATION	
Organization chart	
	
Name	National Documentation Centre (EKT)

Legal status	Public non-profit organization
Staff	12.1 FTE for OPERAS
Business model	Public funding
Budget	
IT organization	

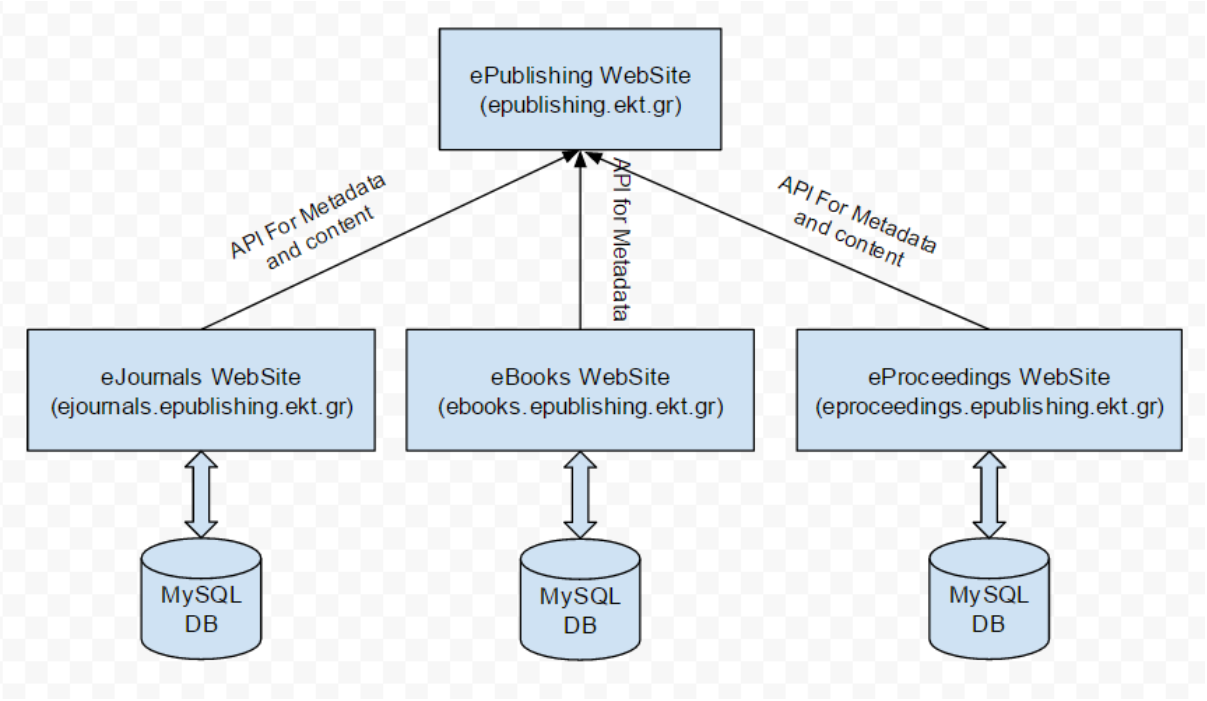
ACTIVITY	
Editing	
Peer-reviewing	Peer-reviewing for journals, proceedings and monographs
Proofreading	Yes
Type-setting	-
Publishing	
Monographs	We receive word-documents, pdf-documents, HTML-documents and ePub-documents
Journals and proceedings	We receive word-documents, pdf-documents, HTML-documents
Others	Images, videos
Distribution	
eJournals.epublishing.ekt.gr (OJS Open Journal Systems v2.4.x) eproceedings.epublishing.ekt.gr (OJS Open Journal Systems v2.4.x) eBooks.epublishing.ekt.gr (OMP Open Monograph Press v1.2.0)	
Print-on-demand	
-	
Users description	
With writing rights	Authors, Reviewers, Editors, Journal Managers - Depending on the stage of the submission process

With reading rights	Open Access

APPLICATIONS & SERVICES	
Applications	
Softwares developed	-
Other softwares used	ePublishing main portal ● Drupal ● Google Analytics eJournals and eProceedings platforms: ● OJS ● MySQL eBooks plaform ● OMP ● MySQL
APIs	● Google Analytics ● Crossref API ● ORCID API
Web services	
Identification services	DOI (additional features under development) Orcid (additional features under development) Fundref (Under Development)
OAI-PMH	Metadata: the base URL for OAI harvesting: ● https://ejournals.epublishing.ekt.gr/index.php/index/oai ● http://eproceedings.epublishing.ekt.gr/index.php/index/oai ● http://ebooks.epublishing.ekt.gr/index.php/index/oai
Others	Feeds in the following formats: ● DC Metadata Format ● MARC Metadata Format ● MARC21 Metadata Format ● NLM Metadata Format ● RFC1807 Metadata Format ● ONIX 3.0 Monograph Export Plugin
Indexing	
Automated indexing.	

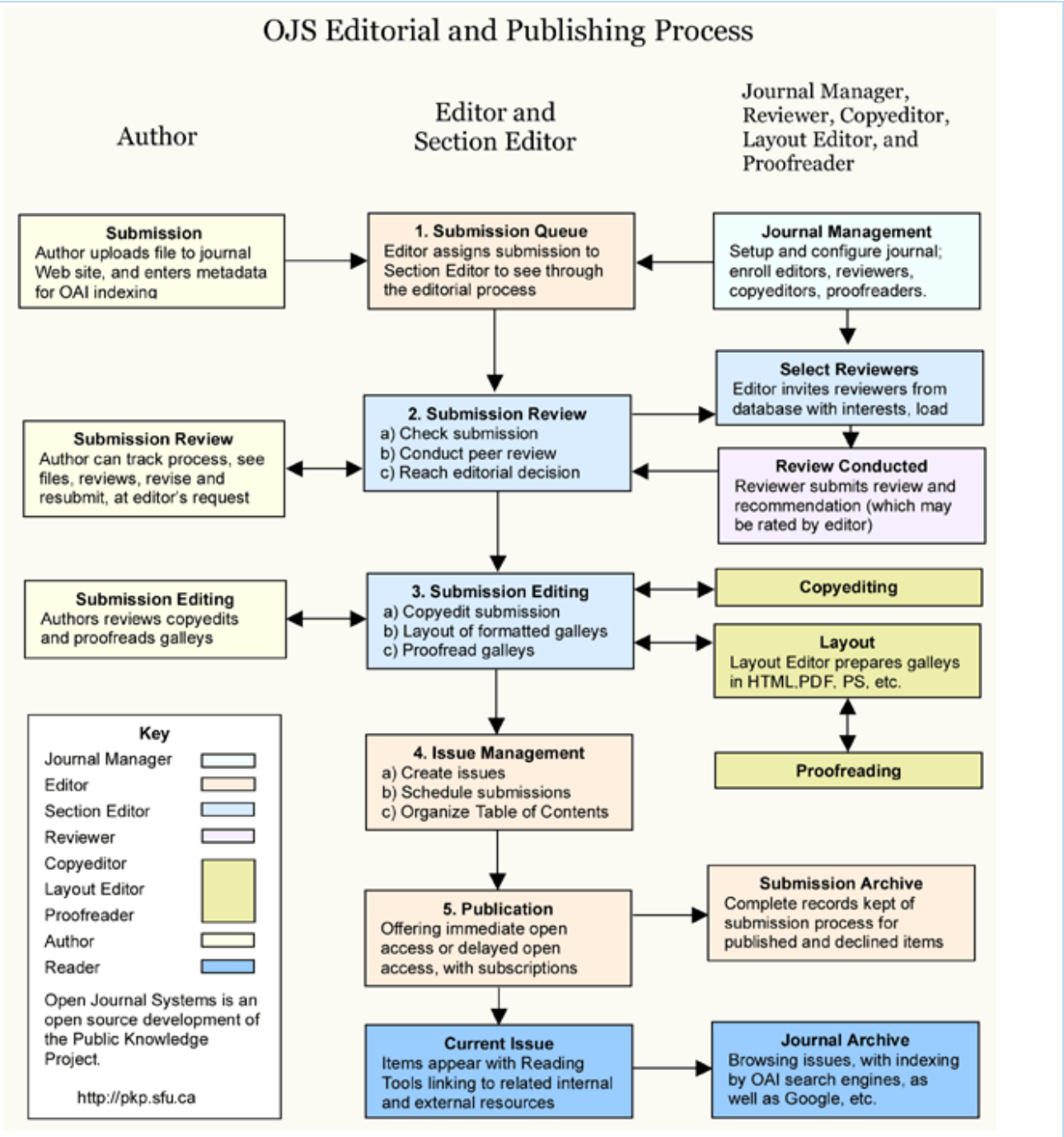
Search functionality on the platform	
Per Journal or per press search	
Metadata	
Identifiers used	• DOI • ISBN • ORCID • FundRef
Standards	• DC for OAI • MARC/MARC21
Reference sets	-
Granularity	-
Automated resource enrichments	
-	
Annotations by users	
Under development (Hypothesis)	
Referencing in external discovery services	
• Core • DOAJ • PKP Index Service • DOAB	
Metrics	
Publishers: COUNTER	

INFORMATION SYSTEM
IS Schema



Programming languages	
PHP	
Database	
DBMS	MySQL
Size	35GB
Data	
Nb. documents	**ejournals:** docx 2130 doc 2671 pdf 18270 pptx 1 epub 13 jpg 140 JPG 26 tiff 30

	png 9 rtf 16 log 4841 total 28455 **eproceedings**: doc 180 pdf 1451 log 2575 txt 13 docx 15 total 4263 **ebooks:** epub 4 pdf 279 png 2 log 276 jpg 10 html 5 total 576
Nb. books	6 Monographs
Nb. journals and proceedings	Journals: 25 - 8000 articles Proceedings series: 3 - 600 papers
Nb. scientific events	-
Nb. academic blogs	-
Others	
Workflow	



Input data format

- PDF, DOC, JPG, XML

Input data size limit

4GB

Pivot format for documents

Output publishing formats

html	yes
pdf	yes
epub	yes
mobi	no
others	no

Access management

Username/Password for Users
OpenAccess for public reading

HARDWARE

Architecture

- Apache httpd HA , keep alive
- Apache http , php5.6 ojs
- DB cluster : pgpool load balancer, postgres active standby replication
- FC switch: Brocade 6500 series
- Firewall: Cisco ASA Next-Gen Firewall Cluster

Servers

IBM System X x86 servers
IBM Storwize V7000 SAN

Virtual machines

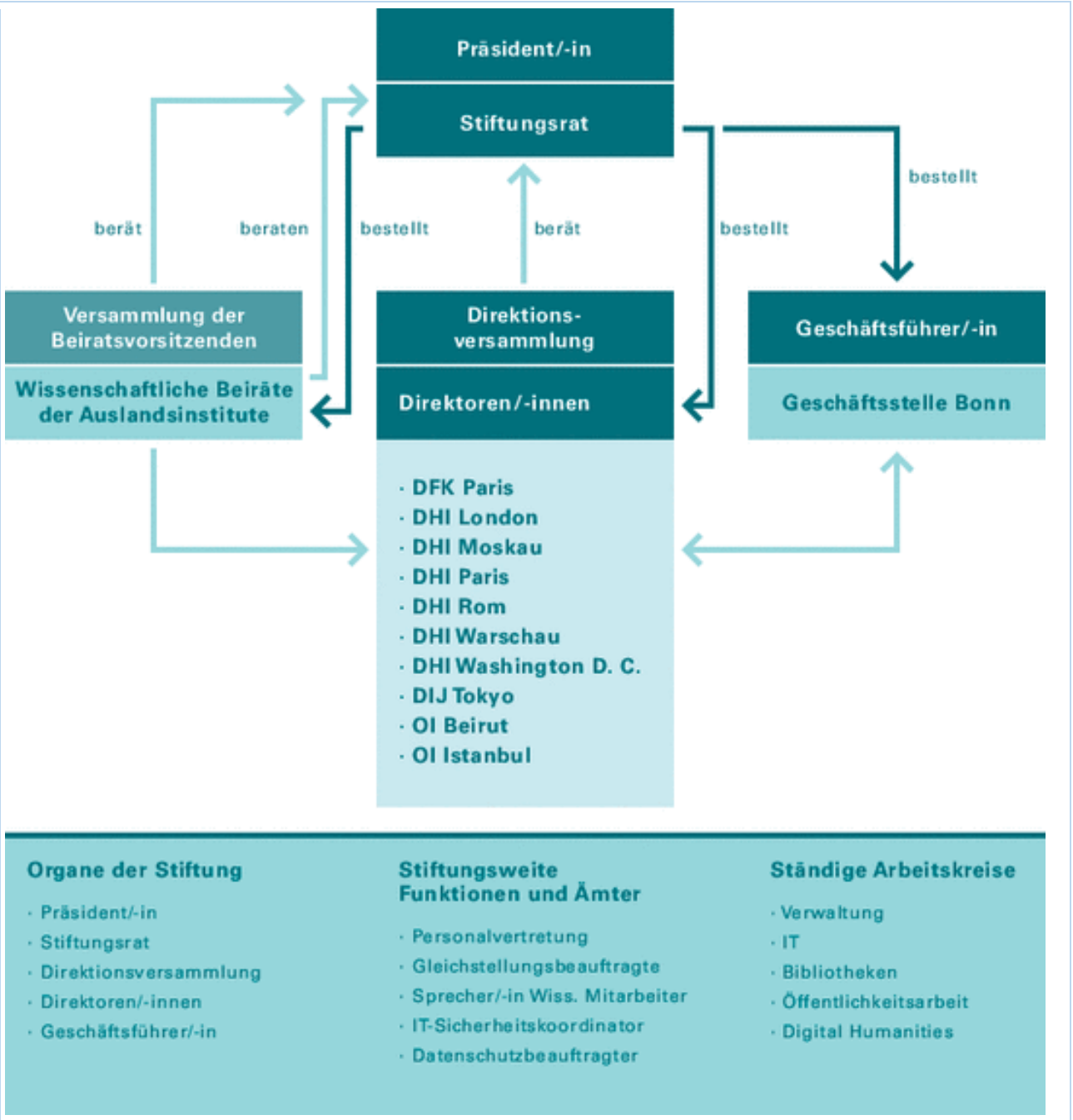
Centos 7 VMs (VMware vSphere)

Load balancing / Clusters
Active/Active Apache httpd reverse proxy front-end
Bandwidth available and used
10Gb/30Mb

PROSPECTS
Services you are willing to share with other OPERAS partners.
Services provided by other OPERAS partners you would like to add to your system.
Services provided by third parties (outside OPERAS network) you would like to add to your system

C. MWS

ORGANIZATION
Organization chart



Name	Max Weber Stiftung – Deutsche Geisteswissenschaftliche Institute im Ausland (MWS)
Legal status	Federal public law foundation with legal capacity

Staff	9 months
Business model	Public funding
Budget	[undisclosed]
IT organization	

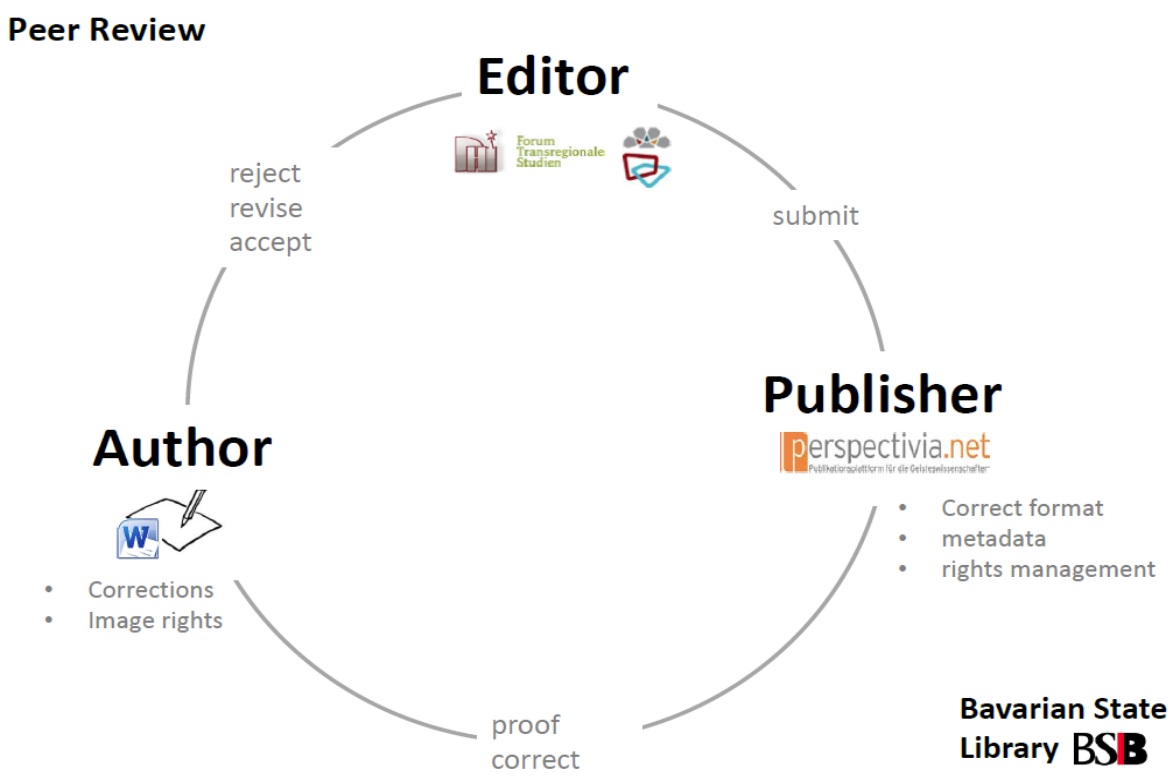
ACTIVITY	
Editing	
Peer-reviewing	Peer-reviewing for journals and monographs, no peer-reviewing for pre-prints
Proofreading	Yes
Type-setting	Yes
Publishing	
Monographs	We receive word-documents and convert to html or pdf from re-digitalized books
Journals	We receive word-documents and convert to html or pdf from re-digitalized prints
Others	audio and video files
Distribution	
Own platform (perspectivia.net)	
Print-on-demand	
None	
Users description	
With writing rights	Only MWS (editorial staff) and cooperating librarians (Bavarian State Library)
With reading rights	General public

APPLICATIONS & SERVICES	
Applications	
Softwares	PSJ (Plone Scholarly Journal) was developed to adjust Plone to a publication

developed	workflow
Other softwares used	Until 07/2017: Plone After 07/2017: OJS (Open Journal System) and MyCoRe (My Content Repository) Due to a technical change being implemented in the course of 2017, some information will need to be adjusted/revised.
APIs	
Web services	
Identification services	GND (Gemeinsame Normdatei, Universal Authority File); DOI is coming 07/2017
OAI-PMH	
Others	
Indexing	
Keyword search (DDC, GND)	
Search functionality on the platform	
Index-based, full-text	
Metadata	
Identifiers used	ISBN (for books), ISSN (for journals), persistent URL for all
Standards	For journals (generated by OJS) : ● rfc1807 ● MARCXML/MARC21 ● NLM ● DC For archiving purposes of all documents (after 07/2017) : METS/MODS via MyCoRe (My Content Repository).
Reference sets	
Granularity	
Automated resource enrichments	
Annotations by users	

Yes (not for all publications/formats, approval by editorial staff)
Referencing in external discovery services
All publications are indexed at the Library Network Bavaria (Bibliotheksverbund Bayern)
Metrics
Piwik to determine number of online visits

INFORMATION SYSTEM	
IS Schema	
Programming languages	
Python	
Database	
DBMS	Zope Object Database
Size	Approx. 100 GB
Data	
Nb. documents	
Nb. books	Approx. 400
Nb. journals	7 journals, 294 issues, 1000 articles and reviews
Others	25 audio files, 172 digitized monographs, 28 online-only volumes containing approx. 400 articles, approx. 3300 online-only reviews
Workflow	



Input data format
doc (docx), pdf, mp3, mp4
Input data size limit
none
Pivot format for documents
XML
Output publishing formats

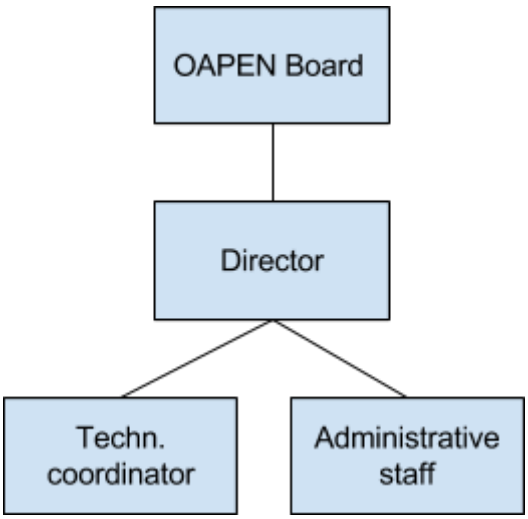
html	Yes
pdf	Yes

epub	No
mobi	No
others	(embedded web-player for audio and video files)
Access management	
login/password	

HARDWARE
Architecture
Servers
External, rented servers (2 servers): Server Intel Xeon E5-1650 v2 Hexa-Core, 24GB, 2 X 1,5TB Raid
Virtual machines
Load balancing / Clusters
Bandwidth available and used

PROSPECTS
Services you are willing to share with other OPERAS partners.
Services provided by other OPERAS partners you would like to add to your system.
Services provided by third parties (outside OPERAS network) you would like to add to your system

D. OAPEN

ORGANIZATION	
Organization chart	
	
Name	Stichting OAPEN (OAPEN Foundation)
Legal status	Public non-profit organization
Staff	1.8 fte
Business model	Institutional funding
Budget	[undisclosed]
IT organization	Digital Production Centre (University of Amsterdam Library) for OAPEN Library; SemperTool for DOAB

ACTIVITY
Editing

Peer-reviewing	--
Proofreading	-
Type-setting	-
Publishing	
Monographs	-
Journals	-
Others	-
Distribution	
-	
Print-on-demand	
--	
Users description	
With writing rights	-
With reading rights	general public

APPLICATIONS & SERVICES	
Applications	
Softwares developed	-
Other softwares used	OAPEN Library: ● XTF ● Lucene ● Drupal ● ARNO (Oracle) ● AWstats Directory of Open Access Books (DOAB) ● SemperTool platform ● Google Analytics

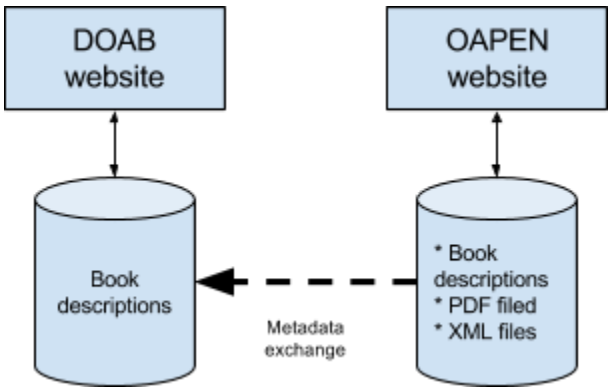
APIs	-
Web services	
Identification services	DOI Orcid (under development) Fundref (under development)
OAI-PMH	OAPEN Library: ● Metadata: the base URL for OAI harvesting: http://dare.uva.nl/cgi/arno/oai/oapen ● Metadata formats: DC or Europeana: http://dare.uva.nl/cgi/arno/oai/oapen?verb=ListMetadataFormats OAI repository is especially harvested by: ● Isidore : https://www.rechercheisidore.fr ● BASE: https://www.base-search.net/ DOAB: ● Metadata: the metadata of DOAB is available via http://doabooks.org/doab?func=about&uiLanguage=en#metadata. ● Metadata formats: ● DC format (http://www.doabooks.org/oai?verb=ListRecords&metadataPrefix=oai_dc) ● MARCXML format (http://www.doabooks.org/oai?verb=ListRecords&metadataPrefix=marcxml)
Others	OAPEN: Feeds in the following formats: ● ONIX (3.0) – XML ● MARC - MAchine-Readable Cataloging file ● MARCXML – based on MARC 21 XML Schema ● CSV – comma delimited text file ● TSV - tab delimited text file ● XML - optimised for import in Excel DOAB: feed in CSV format
Indexing	
Automated indexing.	
Search functionality on the platform	

Faceted research using Lucene indexing
Metadata

Identifiers used	• DOI • ISBN • ORCID
Standards	• DC for OAI • ESE (Europeana) for OAI • ONIX for commercial publishing • MARC/MARC21
Reference sets	• BIC subject headings, used in OAPEN Library • LCSH (subject headings), used in DOAB
Granularity	-

Automated resource enrichments
-
Annotations by users
-
Referencing in external discovery services
• WorldCat (OCLC) • BASE • Europeana • Serials Solutions (ProQuest • Primo Central (ExLibris) • EBSCO Discovery Service
Metrics
Publishers: COUNTER

INFORMATION SYSTEM
IS Schema



Programming languages	
OAPEN Library: Oracle; DOAB: Linux, Apache, MySQL, PHP	
Database	
DBMS	
Size	
Data	
Nb. documents	
Nb. books	• DOAB: 7021 book descriptions • OAPEN: books: 3620; chapters: 36
Nb. journals	-
Nb. scientific events	-
Nb. academic blogs	-
Others	--
Workflow	
OAPEN Library: 1. Selected partners: OAPEN harvests books and metadata via OAI-PMH 2. Others: a. Publishers upload books and metadata files to a FTP server b. OAPEN uploads metadata and books 2. In preparation: direct upload via CSV; ONIX	

DOAB:

1. Publishers: upload metadata via CSV file or via manually entering metadata
2. Scielo: upload metadata via ONIX (version 2; adapted for Scielo)
3. In preparation: direct upload via ONIX

Input data format

- PDF, XHTML, XML

Input data size limit

Below 100 Mb

Pivot format for documents

Output publishing formats

html	yes
pdf	yes
epub	yes
mobi	no
others	no

Access management

HARDWARE

Architecture

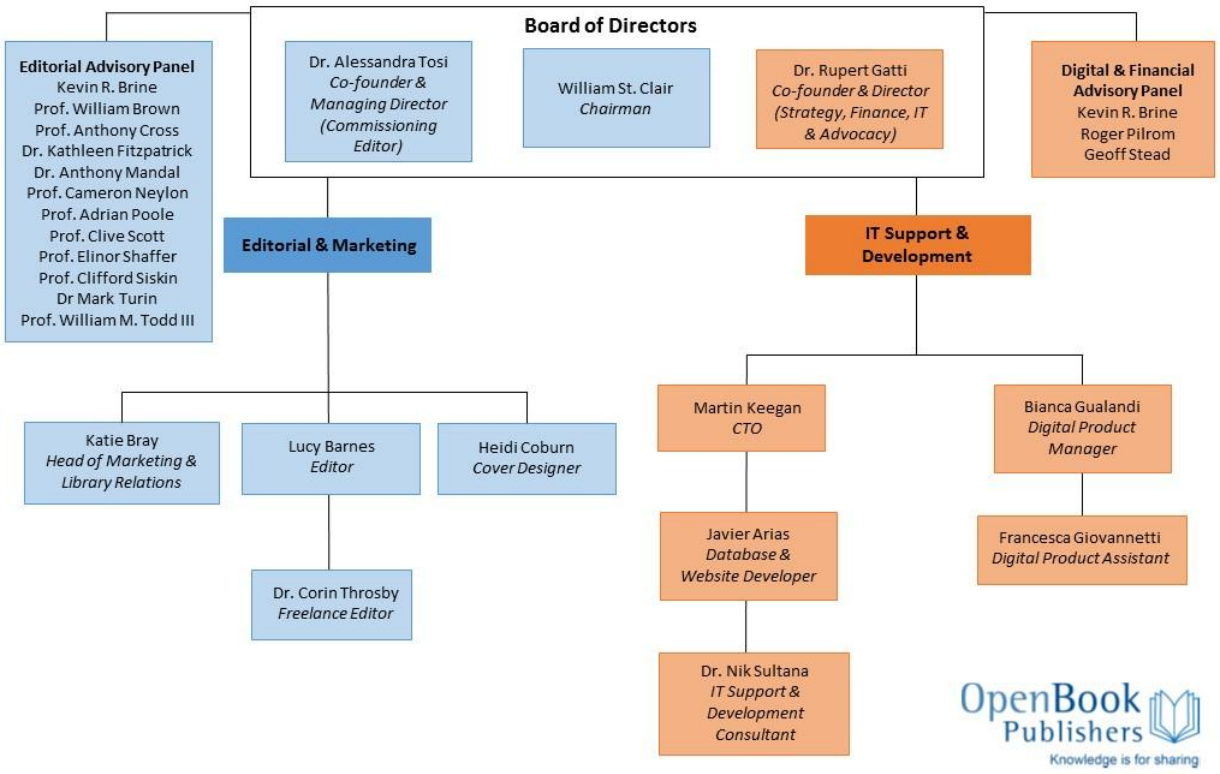
Servers

Virtual machines

Load balancing / Clusters
Bandwidth available and used

PROSPECTS
Services you are willing to share with other OPERAS partners.
Services provided by other OPERAS partners you would like to add to your system.
Services provided by third parties (outside OPERAS network) you would like to add to your system

E. OBP

ORGANIZATION	
Organization chart	
	
Name	Open Book Publishers
Legal status	Community Interest Company Limited by Shares
Staff	5 FTE
Business model	Publishing grants, Library membership and retail sales
Budget	[undisclosed]

IT organization	Dedicated IT department

ACTIVITY	
Editing	
Peer-reviewing	Yes. All manuscripts sent to at least two academic referees for appraisal. Chapters in collected works refereed individually.
Proofreading	Yes. Undertaken inhouse
Type-setting	Yes. Undertaken inhouse
Publishing	
Monographs	Yes.
Journals	No (but developing)
Others	Blogs. Archive hosting associated material. Videos & audio. Software.
Distribution	
Own platform, many other platforms - all titles on Google Books, OpenEdition, WorldReader, DOAB, GooglePlay, Amazon, Elib, Streetlib, JSTOR, EBSCO, ProQuest, Overdrive, YBP, Ingrams, Lightning Source extensive international print distribution network	
Print-on-demand	
100% print-on-demand in hardback and paperback formats, using Lightning Source	
Users description	
With writing rights	authors, readers (in commentary sections), blog contributors
With reading rights	general public, libraries, ...

APPLICATIONS & SERVICES	
Applications	
Softwares developed	Usage statistics package. Database. Drivers to allow distribution to multiple platforms. Management, accounting and book processing software being developed to be released as managed open source content.
Other softwares used	JShop, an e-commerce framework and content management system supporting our website.

APIs	Google Analytics API, used to collect usage statistics of our online readers, and other platforms who have granted us permissions.
Web services	
Identification services	n/a
OAI-PMH	n/a
Others	n/a
Indexing	
Manual or automated indexing. Manually created embedded index Types of indexes used: persons, subjects, locations, themes, terms	
Search functionality on the platform	
Google search function for website - includes book text through html editions.	
Metadata	
Identifiers used	DOI, ISBN, ISSN,
Standards	MARC21, ONIX
Reference sets	
Granularity	Books, chapters, embedded non-textual content eg videos, audio
Automated resource enrichments	
Google translate	
Annotations by users	
None presently - although several titles hosted on third-party wordpress sites allowing annotation, and wikimedia allowing social editng	
Referencing in external discovery services	
EBSCO, DOAB, OCLC, ProQuest, JSTOR	
Metrics	
Software used (Google analytics,) Types of metrics (Book usage/sessions, page views) Specific targets (public, libraries, authors...)	

INFORMATION SYSTEM

IS Schema	
(Add image or send it by email)	
Programming languages	
Java, Python, Bash, PHP, OCaml	
Database	
DBMS	MySQL, SQLite
Size	~30MB on average
Data	
Nb. documents	0
Nb. books	104
Nb. journals	0
Others	
Workflow	
ts typically submitted in Word. Proofreading/copyediting/indexing undertaken within Word. Word uploaded to InDesign for typesetting. All editions	
Input data format	
Word document (.docx), latex	
Input data size limit	
No limit	
Pivot format for documents	
Output publishing formats	
html	yes
pdf	yes
epub	yes

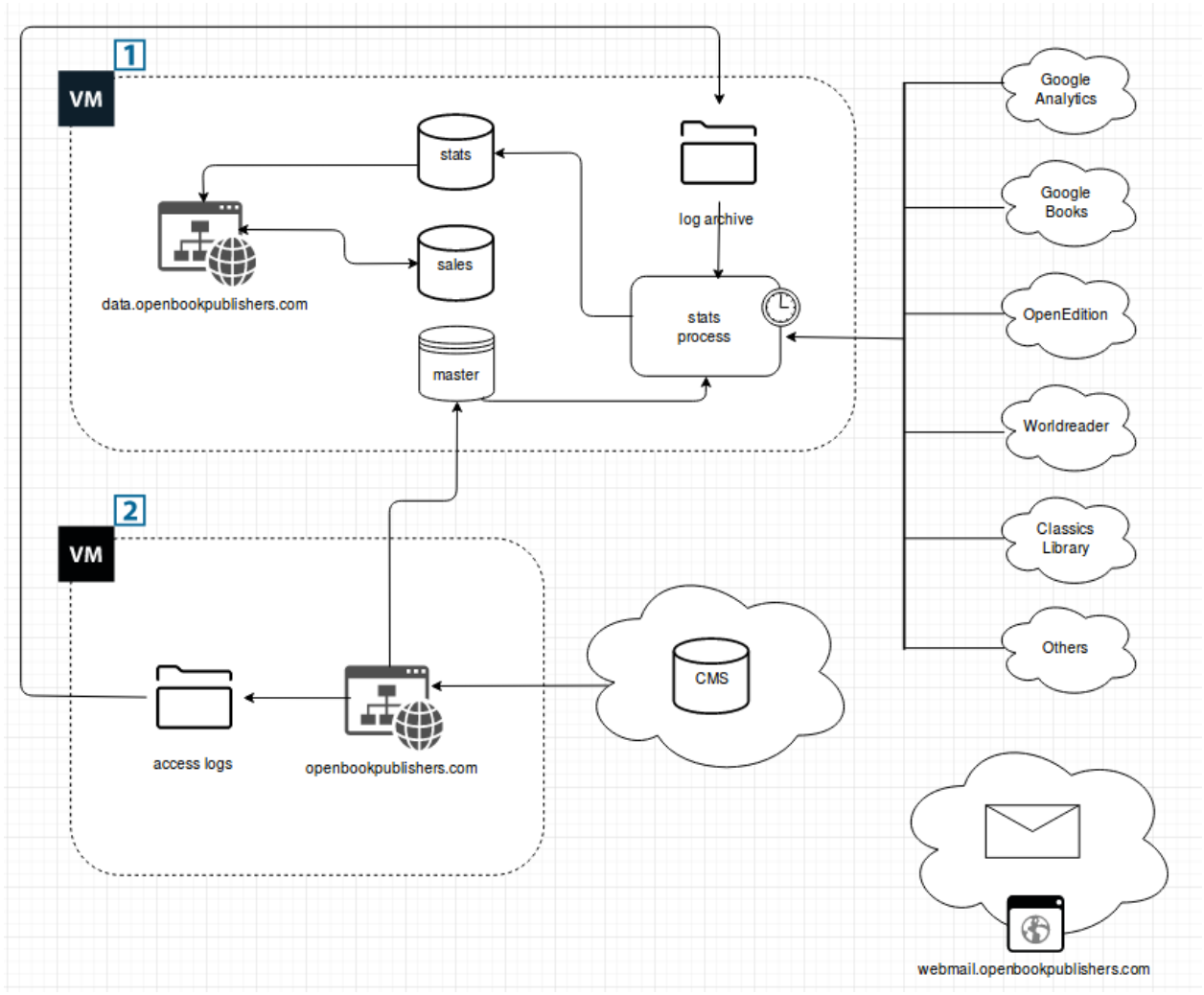
mobi	yes
others	online jpg reader, XML, biNu, wordpress, wikitext, hardback, paperback

Access management

IP based and/or credentials.

HARDWARE

Architecture



Servers
0
Virtual machines
2 VMs running Debian 8.7
Load balancing / Clusters
0
Bandwidth available and used
We have unlimited bandwidth, and do not have access to usage statistics.

PROSPECTS
Services you are willing to share with other OPERAS partners.
We will be releasing all our title processing software, database architecture, etc as open source products that can be adopted by anybody. Willing to share any aspect of book production and distribution services, or to undertake any of these processes on behalf of third parties - we are already doing this for several research institutions.
Services provided by other OPERAS partners you would like to add to your system.
Citation and social media data through CrossRef. Hypothes.is.
Services provided by third parties (outside OPERAS network) you would like to add to your system
Open source journals management system - eg OJS or Scholastica

F. OE

ORGANIZATION
Organization chart

COMMUNICATION

Lisa George
Responsable de la communication, CNRS (IE)

RECHERCHE, DÉVELOPPEMENT ET INNOVATION (OPENEDITION LAB)

Ilodie Faath
Chargée de projets R&D, Pvm (IE)

SERVICE ADMINISTRATIF ET FINANCIER

Sophie Girardin
Assistante en gestion financière et comptable, CNRS (T)

Émilie Hernandez
Assistante en gestion financière et comptable, CNRS (AI)

Céline Herrero
Assistante en gestion RH, CNRS (AI)

ADHÉSIONS

Céline Fouga
Chargée des adhésions,CNRS (IE)

SERVICE DEVELOPPEMENT INTERNATIONAL

Arnaud Gingold
Coordinateur technique pour opéras D et Hirméos, CNRS (IE)

Daša Radovic
Chargée de coopération internationale, AMU (IE)

Alessia Smaniotto
Chargée de communication pour OpenEdition Italia, EHESS (IE, 60%)

E ÉDITION

ôle Édition , CNRS (IE)

ux - Chargé de projet web, CNRS (IE)

S
- Responsable du service, AMU (IE)
a - Chargée d'édition, CNRS (IE)
chler - Chargé d'édition , AMU (IE)
Chargée d'édition, CNRS (IE)

urt - Responsable du service livres NRS (IE)
Chargé d'édition, AMU (IE)
ı - Chargée d'édition, AMU (IE
Chargée d'édition, CNRS (IE)
· Chargée d'édition, CNRS (IE)
· - Chargée d'édition, AMU (IE)

'ANCE ET FORMATION

esponsable du service, EHESS (IE)
lonati - Chargée d'édition, CNRS (IE)
Chargée d'édition, CNRS (IE)
e - Chargée d'édition, EHESS (IE)

PÔLE INFORMATION SCIENTIFIQUE

MARIN DACOS
Responsable du pôle, par intérim

SERVICE BLOGGING SCIENTIFIQUE

François Pacaud - Responsable du service, Chargé de médiation scientifique CNRS (IE)
Céline Guilleux - Chargée de validation scientifique, CNRS (IE 50%)
Michel Tamarin - Chargé de projets web, AMU (IE)
Marion Wesely - Chargée de l'accompagnement des communautés et de la valorisation des contenus d'Hypothèses AMU (IE)

SERVICE DOCUMENTATION ET INTEROPÉRABILITÉ

Jean-Baptiste Bertrand - Chargé de système d'information documentaire, CNRS (IE)
Sonia Lemaire - Chargée de la qualité documentaire, AMU (IE)

SERVICE EVENEMENTS SCIENTIFIQUE

Elsa Zotian - Responsable du service, Chargée de validation scientifique PVM (IE 50%)
João Fernandes - Chargé de validation scientifique, AMU (IE 50%)
Anastasia Giardinelli - Chargée de validation scientifique (EHESS - 40 %)
Céline Guilleux - Chargée de validation scientifique, CNRS (IE 50%)

PÔLE INFORMATIQUE

JEAN-FRANÇOIS RIVIÈRE
Responsable du pôle informatique, chargé des interfaces et des plateformes, CNRS (IE)

Bruno Cénou - Administrateur des systèmes d'information, CNRS (IE)
Hicham Benjelloun - Développeur, AMU (IE)
Quentin Bonaventure - Développeur, AMU (IE)
Florentin Clouet - Administrateur systèmes et réseaux CNRS (IE)
Anne Durand - Développeuse, CNRS (IR 50%)
Roland Haroutiounian - Développeur, AMU (IE)
Mathieu Orban de Xivry - Développeur, AMU (IE)
Hélène Prieto - Développeuse, CNRS (IR)
Alexandre Vinogradov - Développeur pour Hirmeos, CNRS (IE)
Yann Weber - Développeur, CNRS (AI)

PÔLE FREEMIUM

JULIEN GILET
Responsable du pôle Freemium, chargé de développement Freemium, EHESS (IE)

Matthieu Andreani - Chargé de référencement, CNRS (IE)
Jérôme Bau - Chargé de développement Freemium, AMU (IE)
David Beorchia - Libraire, AMU (IE)
Lise Dupuy - Assistante gestion administrative, CNRS (AI)
Julie Thérizols - Chargée de développement Freemium, PVM (IE)
Emmanuelle Verger - Assistante de ressources documentaires numériques, CNRS (AI, 80%)

COLLABORATION AVEC LE LSIS

Patrice Bellot - Professeur en informatique, Aix-Marseille Université (Polytech, LSIS)
Amal Htait - Doctorante
Anaïs Ollagnier - Doctorante

Name	CLEO-CNRS
Legal status	Public non-profit organization
Staff	4 FTE for OPERAS
Business model	Institutional funding and freemium
Budget	
IT organization	Dedicated IT internal department.

ACTIVITY	
Editing	
Peer-reviewing	Journals : peer-reviewing by editors Books : some editors with reading committee
Proofreading	By users
Type-setting	By users
Publishing	
Monographs	Users import their data in the CMS Lodel, which operates with formatted interoperable format XML-TEI. After further treatment and enrichment by CLEO Information System, books are searchable and retrievable at: http://books.openedition.org
Journals	Idem. Journals are searchable and retrievable at: http://www.revues.org
Others	Dedicated teams manage the other kinds of publication : • Announcements : http://calenda.org • Academic blogging : http://hypotheses.org
Distribution	
• Own platforms • other 150 selling points (managed by http://www.immateriel.fr/)	
Print-on-demand	
--	

Users description	
With writing rights	authors
With reading rights	general public, libraries

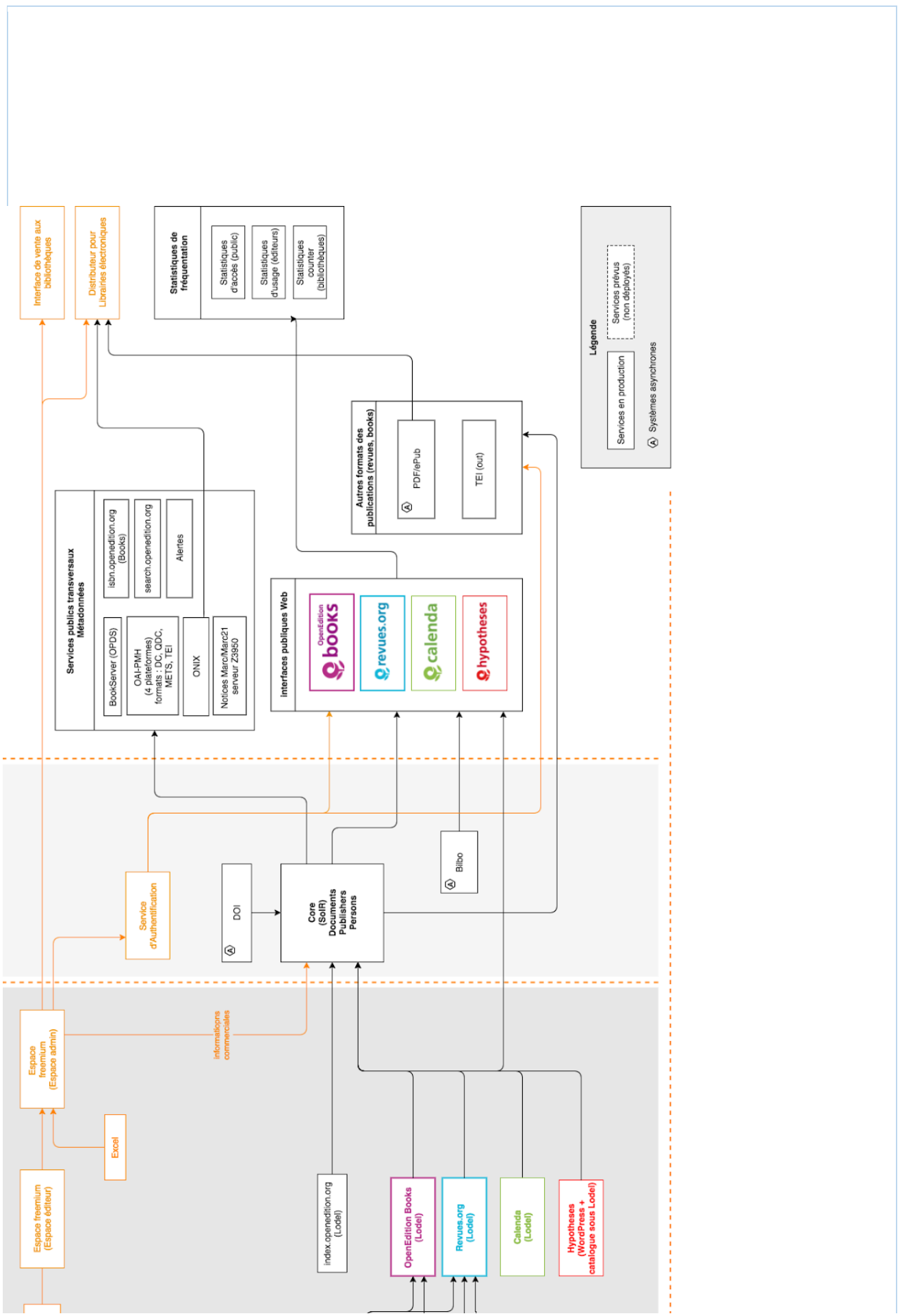
APPLICATIONS & SERVICES	
Applications	
Softwares developed	Science publishing CMS : ● Lodel 1.0 / GPL license Github : https://github.com/OpenEdition/lodel ● Lodel 2 under development ● Core (logiciel propriétaire) ● Application de génération de pdf et d'epub Conversion server : OpenText, https://github.com/OpenEdition/OTX
Other softwares used	● Wordpress ● SolR ● Graylog ● AWstats ● Piwik
APIs	
Web services	
Identification services	DOI Orcid (under development) Fundref (under development)
OAI-PMH	http://oai.openedition.org Sets : ● Journals for Revues.org ● Books for OpenEdition Books ● Blogs for Hypothèses ● Events for Calenda. OAI repository is especially harvested by: ● Isidore : https://www.rechercheisidore.fr

	• CAIRN : https://www.cairn.info
Others	Open Publication Distribution System (OPDS) Catalog format At http://opds.openedition.org OpenURL (under development)
Indexing	
SolR indexing (subjects)	
Search functionality on the platform	
Faceted research using SolR indexing	
Metadata	
Identifiers used	DOI ISBN isbn.openedition.org
Standards	DC for OAI QDC for OAI METS for OAI XML-TEI https://github.com/OpenEdition/tei.openedition Mets/Mods https://github.com/OpenEdition/mets.openedition ONIX for commercial publishing MARC/MARC21
Reference sets	• BIC subject headings, EU range • BISAC subject headings, USA range (Amazon?) Used for ONIX • ISI subject list
Granularity	XML-TEI : chapter level METS (collection) : book level
Automated resource enrichments	
Bilbo : text-mining software for detection and semantic annotation of bibliographical references.	
Annotations by users	
Wordpress commentary for Hypotheses	
Referencing in external discovery services	
Isidore: http://recherche-isidore.fr	

Metrics
Public : Access metrics Publishers : Usage metrics Libraries : counter 4

INFORMATION SYSTEM

IS Schema


Interface de vente aux bibliothèques
Distributeur pour Libraires électroniques
Statistiques de fréquentation
Statistiques d'accès (public)
Statistiques d'usage (éditeurs)
Statistiques counter (bibliothèques)
Légende
Services en production
Services prévus (non déployés)
Systèmes asynchrones
Services publics transversaux Métadonnées
BookServer (OPDS)
OAI-PMH (4 plateformes) formats : DC, QDC, METS, TEI
ONIX
Notices Marc/Marc21 serveur Z3950
isbn.openedition.org (Books)
search.openedition.org
Alertes
Autres formats des publications (revues, books)
PDF/ePub
TEI (out)
Interfaces publiques Web
OpenEdition books
revues.org
calenda
hypotheses
Service d'Authentification
DOI
Core (SolR) Documents Publishers Persons
Bilbo
Espace freemium (Espace admin)
Excel
Informations commerciales
Espace freemium (Espace éditeur)
index.openedition.org (Lodel)
OpenEdition Books (Lodel)
Revues.org (Lodel)
Calenda (Lodel)
Hypotheses (WordPress + catalogue sous Lodel)

Programming languages	
PHP 5 (soon PHP7)	
Database	
DBMS	MySQL
Size	Books : 70 DBs / 15GB Journals : 577 DBs / 30GB Hypotheses : 1DB / 12GB Calenda : 1DB / 2GB
Data	
Nb. documents	600 000 documents (articles, chapters, reviews, book description, issues, books, blog posts…)
Nb. books	3 601 books, 60 publishers, 55 000 documents (chapters)
Nb. journals	454 journals, 9 500 journal issues, 200 000 documents (articles, reviews…)
Nb. scientific events	34 611 events
Nb. academic blogs	1 988 blogs, 236 000 posts
Others	--

Workflow

- Books and journals
  - Case 1
    - Input data imported in OTX by users
    - OTX produces XML-TEI
    - XML-TEI imported in Lodel
  - Case 2
    - publisher produces XML-TEI for chapter/article
    - each TEI document for chapter/article is imported in Lodel
  - Case 3
    - publisher produces XML-TEI for chapter/article, METS for book/issue
    - a complete book or issue can be imported in Lodel

Input data format

.doc, (.docx), .odt, XML-TEI, METS

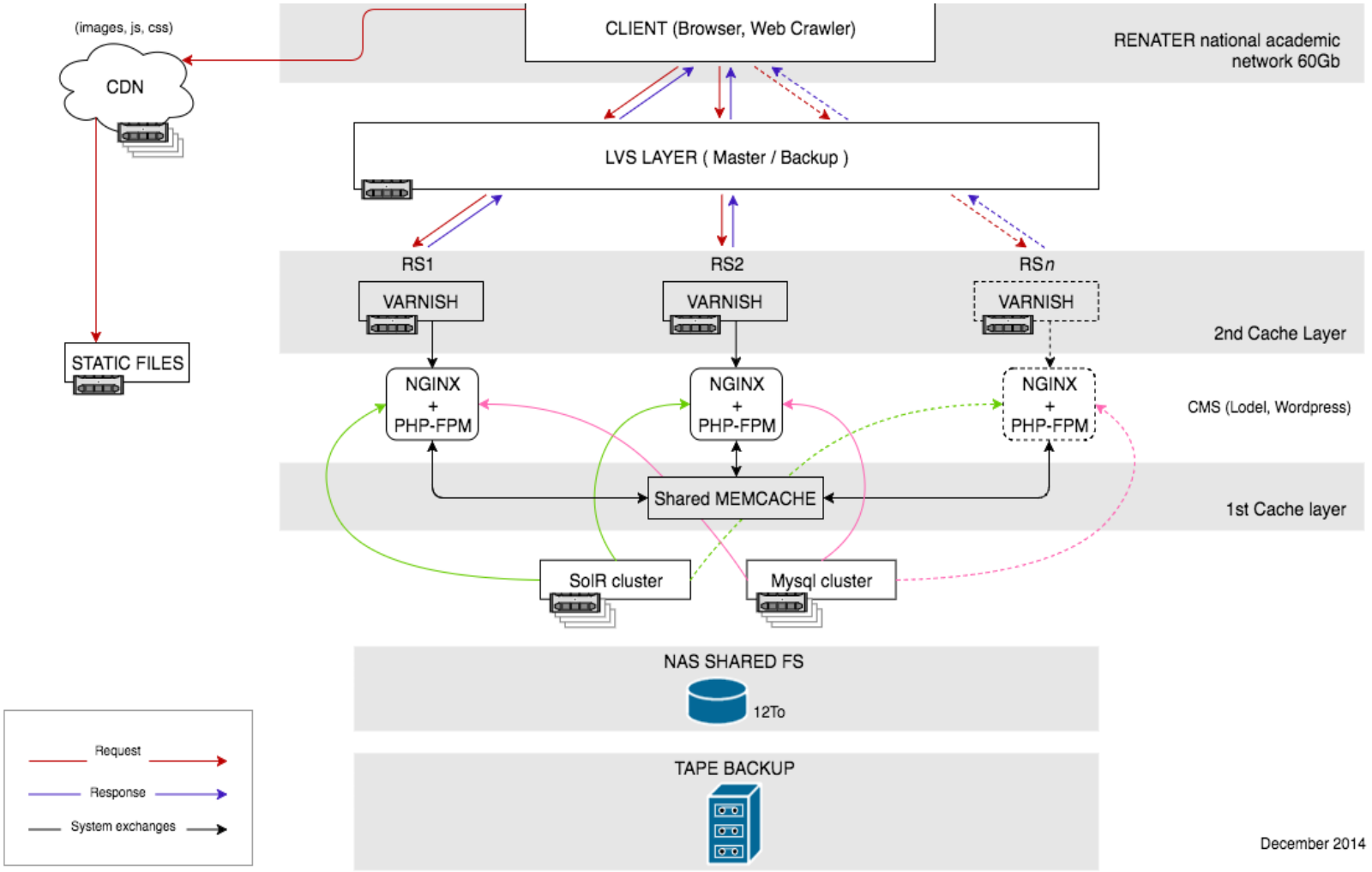
Input data size limit

Pivot format for documents
XML-TEI
Output publishing formats

html	yes
pdf	yes
epub	yes
mobi	no
others	no

Access management

HARDWARE
Architecture


(images, js, css)
CDN
CLIENT (Browser, Web Crawler)
RENATER national academic network 60Gb
LVS LAYER (Master / Backup)
RS1
RS2
RSn
VARNISH
VARNISH
VARNISH
2nd Cache Layer
STATIC FILES
NGINX + PHP-FPM
NGINX + PHP-FPM
NGINX + PHP-FPM
CMS (Lodel, Wordpress)
Shared MEMCACHE
1st Cache layer
SolR cluster
Mysql cluster
NAS SHARED FS
12To
TAPE BACKUP
Request
Response
System exchanges
December 2014

Servers
All platforms → Full 32U Rack with 21 dedicated servers (~340CPU Cores / ~ 2TB RAM)
Virtual machines
LibVirt KVM : Around 40 virtual machines on production (Basic VMs configuration : 8 CPUs and 8GB RAM)
Load balancing / Clusters
All platforms → VRRP with Keepalived/LVS(Virtual IP Failover) ; Four pairs of Haproxy (SSL/TLS layer) + Varnish (HTTP cache layer and load balancer/failover over clustered virtual machines) ; Solr & Mysql replication(Master/Slave) Foreach platforms we almost use the same infrastructure model : 2 servers for Virtual IP Failover, 4 VMs distributed between two dedicated servers, 2 VMs for Mysql master/slave, distributed/replicated file system with Glusterfs, 2 VMs for indexing/search thanks to Solr master/slave.
Bandwidth available and used
Bandwidth available → Renater network and network connected through IN2P3 computing center Bandwidth used → ~200To raw data annually (internal traffic is around 900To)

PROSPECTS
Services you are willing to share with other OPERAS partners.
Services provided by other OPERAS partners you would like to add to your system.
Services provided by third parties (outside OPERAS network) you would like to add to your system

G. OLH

ORGANIZATION	
Organization chart	
(Add image or send it by email)	
Name	Open Library of Humanities
Legal status	Charitable Company Limited by Guarantee
Staff	2
Business model	Consortial donation funding model
Budget	[undisclosed]
IT organization	Ubiquity Press as supplier

ACTIVITY	
Editing	
Peer-reviewing	Online tracking manuscript system based on OJS
Proofreading	Done in-house or by journal editor
Type-setting	Outsourced to Silicon Chips (JATS + PDF)
Publishing	
Monographs	N/A
Journals	Technical platform supplied by Ubiquity Press
Others	
Distribution	
Ubiquity Press, Paperity, other aggregators such as MLA	
Print-on-demand	

N/A

Users description	
With writing rights	Authors, Publishers
With reading rights	Anyone; 100% OA

APPLICATIONS & SERVICES	
Applications	
Softwares developed	CaSSius PDF regions typesetter; annotran translation layer plugin
Other softwares used	Ubiquity Press platform
APIs	
Web services	
Identification services	ORCID, Crossref
OAI-PMH	Available for each journal at /jms/oai
Others	
Indexing	
Paperity, MLA Bibliography	
Search functionality on the platform	
Full text search limited to each journal	
Metadata	
Identifiers used	DOI, ISSN, ORCID
Standards	
Reference sets	
Granularity	
Automated resource enrichments	
Annotations by users	

Hypothes.is
Referencing in external discovery services
DOAB, Paperity
Metrics
Google Analytics, custom Ubiqiuty system

INFORMATION SYSTEM	
IS Schema	
(Add image or send it by email)	
Programming languages	
Database	
DBMS	
Size	
Data	
Nb. documents	
Nb. books	
Nb. journals	
Others	
Workflow	
a to published documents.	
Input data format	
Data imported in the publishing software / uploaded in your publishing system.	
Input data size limit	

Pivot format for documents	
Output publishing formats	
html	Via JATS
pdf	Adobe Indesign flow
epub	
mobi	
others	
Access management	
Login/password	

HARDWARE
Architecture
(Add image or send it by email)
Servers
Number and capacity.
Virtual machines
Number and configuration.
Load balancing / Clusters
Bandwidth available and used

PROSPECTS
Services you are willing to share with other OPERAS partners.

Services provided by other OPERAS partners you would like to add to your system.
Services provided by third parties (outside OPERAS network) you would like to add to your system

H. SHARE

ORGANIZATION
Organization chart

Università degli Studi di Napoli Federico II
Centro di Ateneo per le Biblioteche "Roberto Pettorino"
Prof. Roberto Delle Donne; Dott.ssa Maria Grazia Ronca

Università degli Studi di Napoli L´Orientale
Sistema Bibliotecario di Ateneo
Prof. Lorenzo Mango; Dott. Mario Vitalone

Università degli Studi di Napoli Parthenope
Sistema Bibliotecario
Prof. Riccardo Marselli; Dott.ssa Rosa Maiello

Università degli Studi di Salerno
Centro Bibliotecario di Ateneo
Prof. Daniela Valentino; Dott. Marcello Andria

Università degli Studi del Sannio
Biblioteche di Ateneo
Prof. Francesco Mancini; Dott.ssa Loredana Cerrone

Università degli Studi della Basilicata
Biblioteca Centrale di Ateneo
Prof. Maurizio Martirano; Dott.ssa Antonella Trombone

Centro di Ateneo per le Biblioteche "Roberto Pettorino"

Comitato Direttivo

Prof. Rosario Ammendola
Ing. Giovanni Battista Barone
Dott. Stefania Castanò
Dott. Claudio De Pietro
Prof. Roberto Delle Donne (Presidente)
Prof. Rodolfo Figari
Dott. Gigliola Golia
Prof. Nino Grizzuti
Dott. Gabriella Muccione
Dott. Maria Grazia Ronca
Prof. Francesca Stroffolini

Staff

Dott. Maria Grazia Ronca (Direttore tecnico)
Dott. Paola Denunzio
Dott. Vincenzo De Luise
Dott. Valeria Lo Castro
Dott. Anna Tafuto
Dott. Alfredo Cosco

Segreteria amministrativa

Dott. Sabino Panarella (Responsabile amministrativo-contabile)
Sig. Natale Marseglia
Dott. Marina Stabiano
Dott. Luca Vaccaro

Name	SHARE - FedOA Federico II University Press
Legal status	Public no-profit organization
Staff	FTE for OPERAS
Business model	Institutional funding
Budget	
IT organization	

ACTIVITY	
Editing	
Peer-reviewing	By single journals board
Proofreading	By single journals board
Type-setting	--
Publishing	
Monographs	Registered authors can upload their works by OMP, series editors review and validate the papers. All books are double-blind peer reviewed at least by two referees selected among high-profile scientists, in great majority belonging to foreign institutions http://www.fedoabooks.unina.it
Journals	Registered authors can upload their works by OJS, journals board editors review and validate the articles. All Journals articles are double-blind peer reviewed at least by two referees selected among high-profile scientists, in great majority belonging to foreign institutions www.serena.unina.it
Others	Any kind of digital object could be uploaded by university users in the Open Archive (e-prints), editor and manager complete metadata. This flow is not peer reviewed nor endorsed. www.fedoa.unina.it Phd students store their thesis in another instance for the OA.

	www.fedoatd.unina.it Digital collections (mostly manuscripts or images collections) are stored in an OMEKA installation. www.eco.unina.it
Distribution	
Own platforms	
Print-on-demand	
Yes	
Users description	
With writing rights	Journal editors, journal managers, series editors, OA editors, OA managers
With reading rights	general public

APPLICATIONS & SERVICES	
Applications	
Softwares developed	E-prints plugin for OpenAire 2.0 compliance https://github.com/orazionelson/openaire-compliance
Other softwares used	E-prints, OJS, OMP, OMEKA, CodeIgniter, Museo&Web
APIs	–
Web services	
Identification services	--
OAI-PMH	Open Archive: www.fedoa.unina.it/cgi/oai2 Monographies: http://www.fedoabooks.unina.it/index.php/fedoapress/oai

	e-journals: A set for any journals example: http://www.politics.unina.it/index.php/politics/oai?verb=ListRecords&metadataPrefix=oai_dc&set=politics find journals at home page: www.serena.unina.it
Others	Identification, description and use

Indexing

Bulk indexing methods for any platform used, mostly automated in E-prints, OJS and OMP.

Semi-automated NBN indexing with e-prints.
Manual indexing for third party platforms eg. WorldCat

Search functionality on the platform

E-prints: simple and advanced search, browse by indexes functionality

OJS and OMP: simple and advanced search

A note: all these search methods are very poor, most of our pages are accessed by searching google

Metadata

Identifiers used	DOI, ISBN, ORCID, NBN, ISSN
Standards	DC for OAI METS ONIX for books
Reference sets	--
Granularity	OAI-PMH: books, journals, collections

Automated resource enrichments

--

Annotations by users

Referencing in external discovery services
Primo, Ebsco, DOAJ
Metrics
Google Analytics (work in progress) ALM metrics for e-journals

INFORMATION SYSTEM	
IS Schema	
Programming languages	
PHP5, Perl, Javascript, XML, CSS, HTML	
Database	
DBMS	MySql
Size	fedOA open archive : 5.7Gb Serena Journals: 1.8Gb Share fedOA Books:11,5Mb
Data	
Nb. documents	8886
Nb. books	34
Nb. journals	Journals: 13, Issues: 210, Articles: 4000
Others	Digital collections: 3
Workflow	
During Submission Process, Author uploads file to journal Web site, and enters metadata for OAI indexing. Editor assigns submission to Section Editor to see through the editorial process. Then there are two phases: Submission Review (check submission- conduct peer review-reach editorial decision) and Submission Editing (copyedit submission-layout of formatted galleys- proofread galleys). During this two phases author can track process, see files, reviews, revise and resubmit, at editor's request, reviews copyedits and	

proofreads galleys. Then the Editor manage issue through schedule submission and organize table of contents and offer immediate open access or delayed open access, with subscriptions and complete records kept of submission process for published and declined items. Items appear with reading tools linking to related internal and external resources and browsing with indexing by OAI search engines, as well as Google. Journal Manager, Reviewer, Copyeditor, Layout Editor and Proofreader setup and configure journal. Editor invites reviewers from database with interest. Reviewer submits review and recommendation (which may be rated by editor). Layout Editor prepares galleys in HTML, PDF, PS ecc.
Input data format
PDF, doc, xml
Input data size limit
Pivot format for documents
Output publishing formats

html	Yes
pdf	Yes
epub	Yes
mobi	No
others	No

Access management
Login/password

HARDWARE
Architecture
Servers

Open Archives:
Operating system : Ubuntu Linux 13.10
Processor information : Intel(R) Xeon(R) CPU E5-2620 0 @ 2.00GHz, 24 cores
Real memory : 15.26 GB
Virtual memory : 14.55 GB
Local disk space : 1.76 TB total

Journals and Monographies
Operating system Ubuntu Linux 12.04.5
Processor information Intel(R) Xeon(R) CPU E5405 @ 2.00GHz, 1 cores
Real memory 2.88 GB total
Virtual memory 998.04 MB total
Local disk space 176.19 GB total

Backup & Test server:
Operating system Ubuntu Linux 14.04.1
Processor information Intel(R) Xeon(R) CPU E5-2407 0 @ 2.20GHz, 8 cores
Real memory 30.64 GB total
Virtual memory 29.10 GB total
Local disk space 1.74 TB total

Virtual machines

Load balancing / Clusters

Bandwidth available and used

PROSPECTS

Services you are willing to share with other OPERAS partners.

Our platform and data

Services provided by other OPERAS partners you would like to add to your system.

Lodel, open annotation layer with hypothes.is
Services provided by third parties (outside OPERAS network) you would like to add to your system
Harvesting and data mining, Dariah NERD

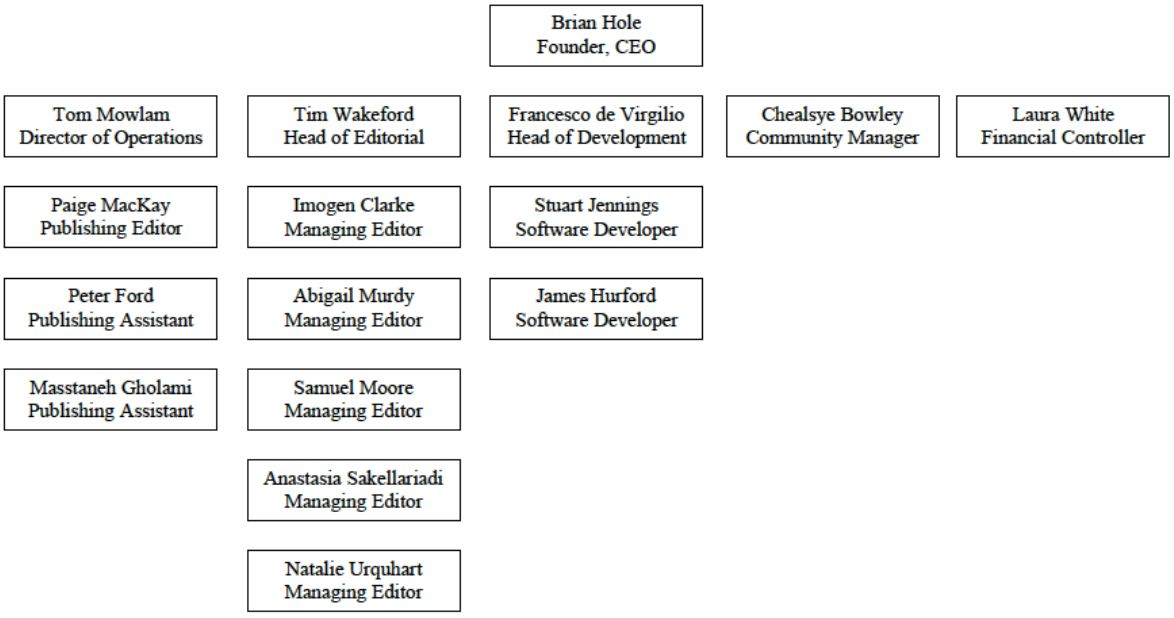
I. UP

ORGANIZATION

Organization chart

Ubiquity Press Org Chart

July 2017



Name	Ubiquity Press Ltd
Legal status	Private Limited Company
Staff	14.5 FTE
Business model	Publishing activity financed by Article Processing Charges, and Book Processing Charges. Platform development financed by annual fees for presses and journals.
Budget	[not disclosed]

IT organization	Dedicated IT team (3 internal staff, plus external suppliers).

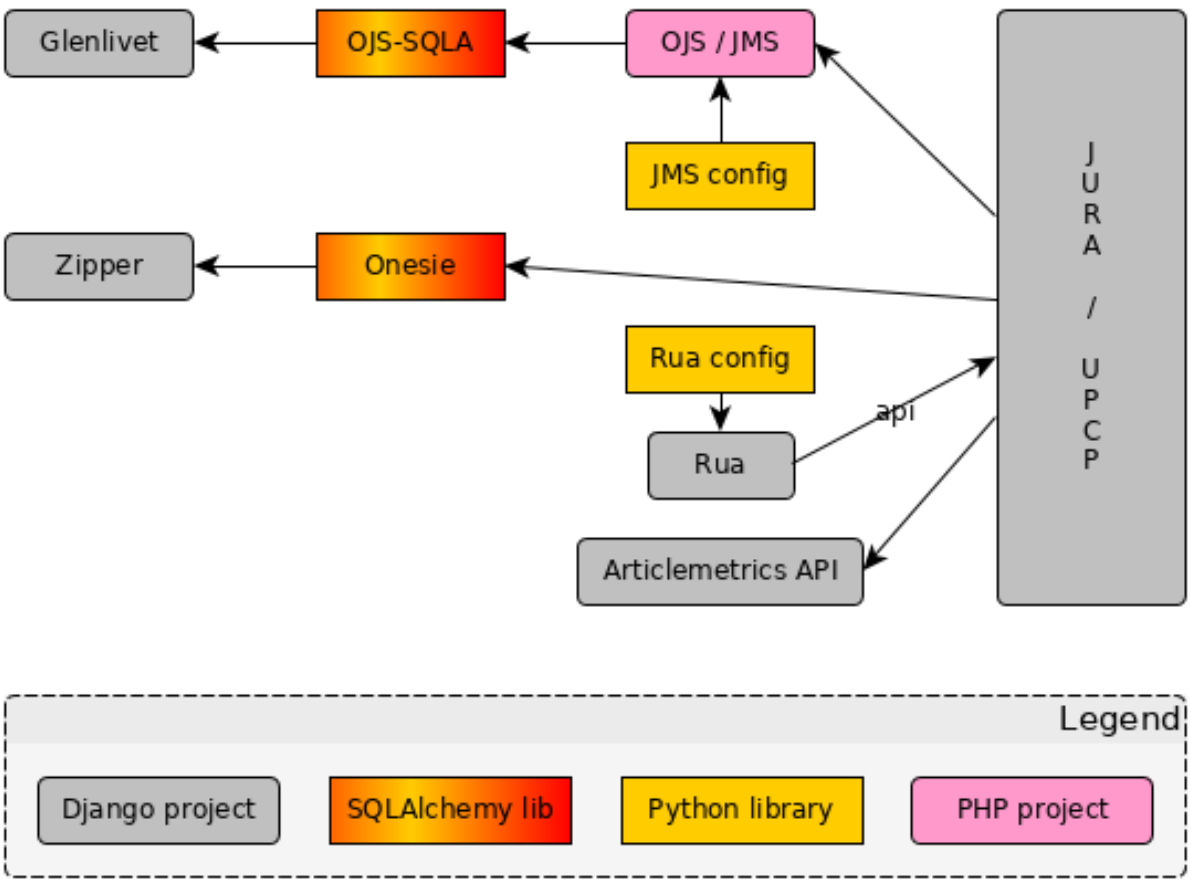
ACTIVITY	
Editing	
Peer-reviewing	Articles and books are sent to at least 2 reviewers, decisions are made by editors. Peer review managed via online systems.
Proofreading	Proofreading done by authors. Copyediting done by suppliers in US.
Type-setting	Typeset in InDesign via India-based suppliers. Currently moving from InDesign->XML, to XML->InDesign.
Publishing	
Monographs	Published as PDF, EPUB (downloadable, and 'played' in browser via EPUB.js), Mobi, and print-on-demand – via in-house platform (Rua).
Journals	Published as JATS XML (rendered to HTML), PDF – via tweaked version of OJS.
Others	Data journals, conference publishing system, blogs.
Distribution	
Own platform, and via indexes (DOAJ, DOAB, OAPEN, Google Scholar, Scopus, Web of Knowledge, EBSCO, CNKI, and subject-specific repositories eg: PubMed, Linguistics Abstracts Online, PsycINFO etc).	
Print-on-demand	
Print-on-demand for books only. Arranged via Ingram Lightning Source, who feed book info to wholesalers (Barnes and Noble, Waterstones etc) and online platforms (Amazon, Book Depository etc).	
Users description	
With writing rights	Article and chapter/book authors, comment/annotation authors.
With reading rights	Academics/researchers, general public.

APPLICATIONS & SERVICES	
Applications	
Softwares developed	Rua (books tracking and publishing platform), Jura (back-end content management and metrics platform), Glenlivet (journal front-end), Fa (conference publishing system, Zipper (press platform).
Other softwares used	OJS
APIs	Crossref API to collect citations, Google Analytics API to collect metrics, social mentions through Wikipedia, Facebook, Twitter APIs. Private APIs used for internal data transfer between systems.
Web services	
Identification services	ORCID, Crossref
OAI-PMH	Journals each have their own service – eg: http://www.stabilityjournal.org/jms/index.php/up/oai/ Books OAI-PMH currently via OAPEN.
Others	
Indexing	
Book authors can provide indexes themselves, or suggest terms which can be added. Alternatively, Ubiquity Press can arrange professional indexers. Where index is provided electronically and embedded into Word – this can be carried through to inDesign automatically. Typically index is subject-based, but may also/instead be person- and/or location-based.	
Search functionality on the platform	
Articles: title, author, abstract, keywords Books: (under development) title, author/editor, abstract, keywords	
Metadata	
Identifiers used	DOI, ISBN, ORCID, ISSN
Standards	Dublin Core
Reference sets	
Granularity	
Automated resource enrichments	

Crossref for adding DOIs to reference lists.
Annotations by users
Hypothes.is
Referencing in external discovery services
E.g.: EBSCO, DOAB, SFX, etc.
Metrics
Google analytics, piwik

INFORMATION SYSTEM

IS Schema



Programming languages

Python, PHP

Database

DBMS	MYSQL, POSTGRES
Size	240GB

Data

Nb. documents	29,000 articles on platform, of which 7,500 published by Ubiquity Press
Nb. books	120 books (on platform), of which 29 published by Ubiquity Press
Nb. journals	200 journals (on platform), of which 43 published by Ubiquity Press
Others	

Workflow

Books: peer reviewed and accepted Word/TeX files copyedited and indexed (with index embedded in Word), converted into PDF via InDesign (for Word) or TeX, Mobi and EPUB generated. EPUB rendered in-browser via EPUB.js.

Articles: peer reviewed and accepted Word/TeX files copyedited, converted into PDF via inDesign (for Word), JATS XML output. Currently switching from inDesign->XML to XML->inDesign.

Input data format

Word, TeX, images

Input data size limit

20MB

Pivot format for documents

Output publishing formats

html	Yes (via XML for articles, via EPUB for books)
pdf	Yes
epub	Yes
mobi	Yes
others	XML for all articles, JSON for some journals

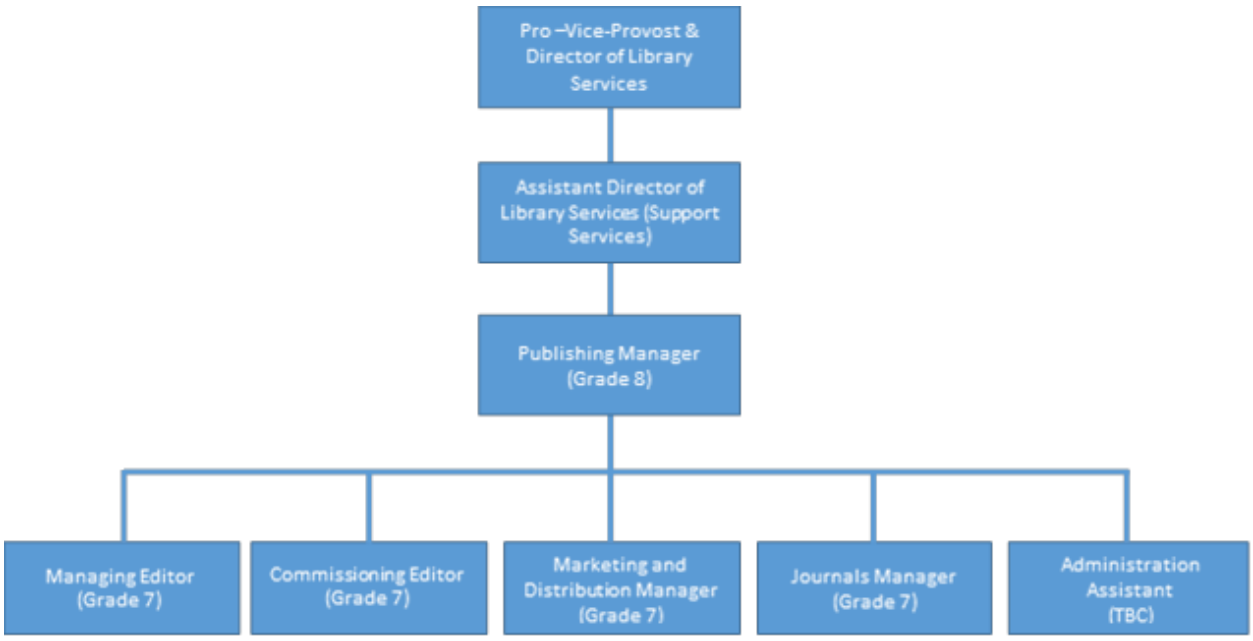
Access management

login/password, OAuth (ORCID)

HARDWARE
Architecture
Separate databases for each journal and for each press are merged into single backbone database. Data is served via two web servers with a single load balancer.
Servers
6 servers
Virtual machines
0
Load balancing / Clusters
1 load balancer
Bandwidth available and used
Some machines limited, some unlimited (further information can be provided if important).

PROSPECTIVES
Services you are willing to share with other OPERAS partners.
Rua (book submission and processing platform) will eventually be shared.
Services provided by other OPERAS partners you would like to add to your system.
Services provided by third parties (outside OPERAS network) you would like to add to your system
Integration with different journal platforms (Scholastica, COKO etc), integration with OSF, Crossref Event Data

J. UCL

ORGANIZATION	
Organization chart	
	
Name	Lara Speicher, Publishing Manager, UCL Press
Legal status	Charity / Non-profit
Staff	
Business model	Institutional, open access university press
Budget	For 2016, annual incomes / spending
IT organization	Support and maintenance by UCL IT Dept.

ACTIVITY
Editing

Peer-reviewing	Via email, with attachments
Proofreading	Freelance proofreaders, on screen, with digital mark up. Files are transferred by email or by Dropbox
Type-setting	External typesetters. Files supplied by email or Dropbox.
Publishing	
Monographs	UCL press publish books, journals and textbooks searchable on the same platform: https://www.ucl.ac.uk/ucl-press/browse-books
Journals	
Others	
Distribution	
We have the following distribution methods: Open access: Own platform, institutional repository, JSTOR, OAPEN, Worldreader, Internet Archive, Unglue.it Print sales: via NBN and Lightning Source	
Print-on-demand	
We use two print-on-demand suppliers, Edwards Brothers and Lightning Source. We upload print files to them. They receive orders from our distributors and they print and dispatch accordingly.	
Users description	
With writing rights	--
With reading rights	general public, libraries, ...

APPLICATIONS & SERVICES	
Applications	
Softwares developed	--
Other softwares used	Word, Excel for import and/or export

	Eprints : UCL repository with every UCL Press publication. OJS : Journals discovery.
APIs	--
Web services	
Identification services	CrossRef
OAI-PMH	
Others	
Indexing	
Mainly manual indexing. Types of indexes for persons, subjects, locations, themes.	
Search functionality on the platform	
We have our books on several platforms – OAPEN, JSTOR, UCL Discovery, Worldreader. All have different levels of search functionality	
Metadata	
Identifiers used	DOI, ISBN
Standards	ONIX for commercial publishing MARC/MARC21
Reference sets	BIC, BISAC
Granularity	Books, articles
Automated resource enrichments	
On ucldigitalpress.co.uk there are options to annotate and highlight	
Annotations by users	
Referencing in external discovery services	
DOAB	
Metrics	
Eprints, Google analytics	

Number of downloads of individual books / chapters, countries in which downloaded

INFORMATION SYSTEM	
IS Schema	
--	
Programming languages	
--	
Database	
DBMS	--
Size	--
Data	
Nb. documents	
Nb. books	30
Nb. journals	15
Others	
Workflow	
Authors send their .doc files, copy-editing / typesetting by external collaborators (Indesign, etc.). Metadata added manually and stored in database; deposit of ISBN, DOI. Output in ONIX or Excel, depending on the channel of distribution.	
Input data format	
Word files and images. Typeset and then output as PDF, Mobi, epub, XML	
Input data size limit	
Pivot format for documents	

Output publishing formats	
html	Yes
pdf	Yes
epub	Yes
mobi	Yes
others	-
Access management	
None	

HARDWARE
Architecture
Part of UCL IT dptmt.
Servers
Virtual machines
Load balancing / Clusters
Bandwidth available and used

PROSPECTS
Services you are willing to share with other OPERAS partners.

Services provided by other OPERAS partners you would like to add to your system.
Services provided by third parties (outside OPERAS network) you would like to add to your system

K. UGOE

ORGANIZATION	
Organization chart	
-	
Name	Universitätsverlag Göttingen - Göttingen University Press (GUP)
Legal status	Göttingen University Press is part of the division "Electronic Publishing" (EPU) at the Göttingen State and University Library (SUB)
Staff	Margo Bargheer, Holger Jendral, Petra Lepschy, Jutta Pabst, Heike Zimmerningkat (all part-time)
Business model	Institutional
Budget	Part of Göttingen State and University Library's budget
IT organization	Dedicated IT department at SUB

ACTIVITY	
Editing	
Peer-reviewing	By Editorial Board, composed of high-ranking members of each faculty of Göttingen University
Proofreading	Formal proofreading by members of the staff
Type-setting	Authors/Editors with stylesheets provided by the press, in exceptional cases by external staff
Publishing	
Monographs	Monographs, anthologies, proceedings, catalogs, reference works and textbooks
Journals	In planning

Others	
Distribution	
PDF on GUP website, catalog of the Göttingen State and University library and several e-book collections open access available (cc-by-sa 4.0 default). Printed version via shopping cart on the website, local booksellers, amazon.de	
Print-on-demand	
95% of the books are printed on demand in a small print run, 5% (catalogs) are printed offset.	
Users description	
With writing rights	No editing rights. As an associate of Göttingen University you can publish your scholarly work with Göttingen University Press, the terms of use are defined and regulated by the "Nutzungsordnung"
With reading rights	Everyone

APPLICATIONS & SERVICES	
Applications	
Softwares developed	
Other softwares used	
APIs	The system offers REST, OAI PMH 2.0 and SWORD 1.3.1 interfaces. The REST and SWORD Interfaces are currently not in use.
Web services	
Identification services	Creators (authors and editors) are currently identified in GUP by GND-IDs (special personal ID generated and used by the German National Library) if existent and by unique internal IDs otherwise.
OAI-PMH	https://www.univerlag.uni-goettingen.de/oai/request?verb=Identify

Others	-

Indexing

Manual or automated indexing.
Types of indexes used: Fulltext, Persons, Subjects, Language, Publication type, Medium
Search and browse indexes are implemented with Solr engine.

Search functionality on the platform

full-text search, advanced search …

Metadata

Identifiers used	GND-ID, DOI, ISBN, ISSN, ORCID
Standards	Intern: DC simple, Export: ONIX, PICA XML
Reference sets	BIC, BISAC, VLB
Granularity	Books

Automated resource enrichments

none

Annotations by users

none

Referencing in external discovery services

After the release, the book is made available via the publisher homepage under a Creative Commons license 4.0 (attribution) online open access and is reported to important databases and various catalogs (eg. OPAC, GVK, DNB). The print version is additionally reported to the bookable books (VLB) and to amazon. The books are also available on the platforms OAPEN and selected books on OpenEdition

Metrics

None

INFORMATION SYSTEM

IS Schema

The website is based on Dspace 5.6 repository software (written in java) including the Cocoon XML-Publishing- Framework on the Frontend and Postgresql database on the backend.
Programming languages
Database

DBMS	postgresql 9.2
Size	23 MB

Data	
Nb. documents	663
Nb. books	663
Nb. journals	-
Others	-

Workflow
1. Author / Editor : determination of APCs 2. Submission to the Editorial Board for peer-review 3. Editor / Author : accepted, rejected or modifications according to the review 4. If accepted, editing workflow 5. Press proofreading 6. publication online and printed
Input data format
Import: any XML, BibTex, Endnote, RIS, Excel Table / Upload: any file (only PDF in use)
Input data size limit
512 MB
Pivot format for documents
PDF
Output publishing formats

html	no

pdf	yes
epub	no
mobi	no
others	-
Access management	
Authentication login/password for depositing the PDF file	

HARDWARE
Architecture
not applicable
Servers
1: 4 GB RAM, 250 GB Disc
Virtual machines
1: configuration not applicable
Load balancing / Clusters
-
Bandwidth available and used
10 GBit

PROSPECTS
Services you are willing to share with other OPERAS partners.
Services provided by other OPERAS partners you would like to add to your system.

Identification (DOI, ORCID), Annotation, metrics
Services provided by third parties (outside OPERAS network) you would like to add to your system
Data Mining, Text Encoding, and Text Analysis Tools. Specifically, Cross-Language search engine / tools, linking related documents in many different language

L. UniTo

ORGANIZATION	
Organization chart	
(Images attached)	
Name	Università degli Studi di Torino
Legal status	
Staff	1,5 FTE for OPERAS
Business model	Institutional
Budget	752.200.673,56 Link to the Annual report 2015: https://www.unito.it/ateneo/pianificazione-e-bilanci/bilancio-unico-di-ateneo
IT organization	IT general Organization: Direzione Sistemi Informativi Portale E-learning https://www.unito.it/ateneo/organizzazione/amministrazione/direzioni/sistemi-informativi-portale-elearning Publishing activities: Unità di progetto Open Access Direzione Ricerca e Terza Missione https://www.unito.it/ateneo/organizzazione/amministrazione/direzioni-dellamministrazione/ricerca-terza-missione

ACTIVITY	
Editing	
Peer-reviewing	Each journal is independent. Most of them use the OJS workflow to track reviews.
Proofreading	Each journal is independent.
Type-setting	Each journal is independent.
Publishing	
Monographs	Collane@Unito, http://www.collane.unito.it/oa/

	Publishing service for UniTo affiliated researchers, hosting currently 10 books. Software: Omeka Our role: - managing the platform, hosted by UniTO - managing the homepage (graphic and texts) - providing a start-up meeting with the author for all practicalities - assigning the ISBN as "Università degli Studi di Torino" as registered publisher - uploading on Omeka the pdf entirely composed/produced by the authors
Journals	SIRIO@UniTo, http://www.ojs.unito.it/ Publishing service for journals whose editorial board has - among others - UniTo affiliated researchers, hosting currently 18 journals. Software: OJS Each journal is independent in editorial choices (from graphic to peer review to distribution) and owns the content. All journals are full Open Access. Mostly only online, some have activated a Print on Demand service with external publishers. Our role: - managing the platform (hosted by CINECA) - managing the homepage (graphic and texts; practical editorial infos) - providing two start up meetings with the editorial teams: a) suggestion on editorial options b) coaching on OJS - supporting editorial teams with any issue (graphic, indexing, technical problems…) - for 2 journals we also provide direct editorial work
Others	AperTO (https://aperto.unito.it) Institutional Repository hosting the entire scientific production of UniTO (currently, 174.758 items, with 20.729 Open Access fulltext) Software: Dspace 4.3 customized by CINECA

Distribution

SIRIO@unito and Collane@unito are full Open Access
AperTO is full Open Access; metadata are always open, fulltext only according to the publishers' copyright permission

Print-on-demand

Activated by the single journal (2 at the moment) by direct agreement with external publishers

Users description

With writing rights	AperTO and Collane@UniTO: researchers affiliated to UniTO SIRIO@UniTO: editorial boards affiliated to UniTO, authors from anywhere
With reading rights	General public

APPLICATIONS & SERVICES	
Applications	
Softwares developed	None
Other softwares used	DSpace (customized by CINECA as “IRIS”), Open Journal System, Omeka
APIs	
Web services	
Identification services	
OAI-PMH	In AperTO: https://iris.unito.it/oai/request In SIRIO@UniTO: http://www.ojs.unito.it/index.php/index/oai
Others	
Indexing	
Search functionality on the platform	
AperTO: internal Dspace search Collane@UniTO: internal Omeka search SIRIO@UniTO: internal OJS search	
Metadata	
Identifiers used	**Collane@UniTO**: ISBN at book level ISSN at Series level (if any) **SIRIO@UniTO**:

	ISSN at journal level DOI at article level ORCID for authors (if the editorial team sets it) **AperTO**: HANDLE for each item ORCID for each active author DOI if provided by the publisher PUBMED ID for biomedical items
Standards	
Reference sets	
Granularity	**Collane@UniTO**: Author, Title, Subtitle, Series, pages, ISBN. **Sirio@UniTO**: Journal level: Title, ISSN Article level: Author, Title, Abstract, DOI, keywords **AperTO**: We have 7 macro-types of items and 36 types. Each macro-type holds a different set of metadata. i.e. Article set: Author, Title, Abstract, Journal title, ISSN, language, peer review, URL, DOI, PUBMED ID, SCOPUS ID, WOS ID, discipline, theme, keywords.

Automated resource enrichments

None

Annotations by users

None

Referencing in external discovery services

1) Discovery tool: TUTTO (http://unito-tutto.hosted.exlibrisgroup.com/primo_library/libweb/action/search.do)
2) SIRIO Journals are referenced in BASE
3) Google Scholar indexes AperTO, SIRIO and Collane
4) single journals are indexed in discipline based databases: Kervan in Scopus and ERIH, CosMo in MLA and ERIH)
5) 4 journals have applied to DOAJ

Metrics
SIRIO@UniTO: Metrics provided by OJS (COUNTER, views, downloads…) **AperTO**: Downloads per item; citation count (linked to Scopus and Web of Science)

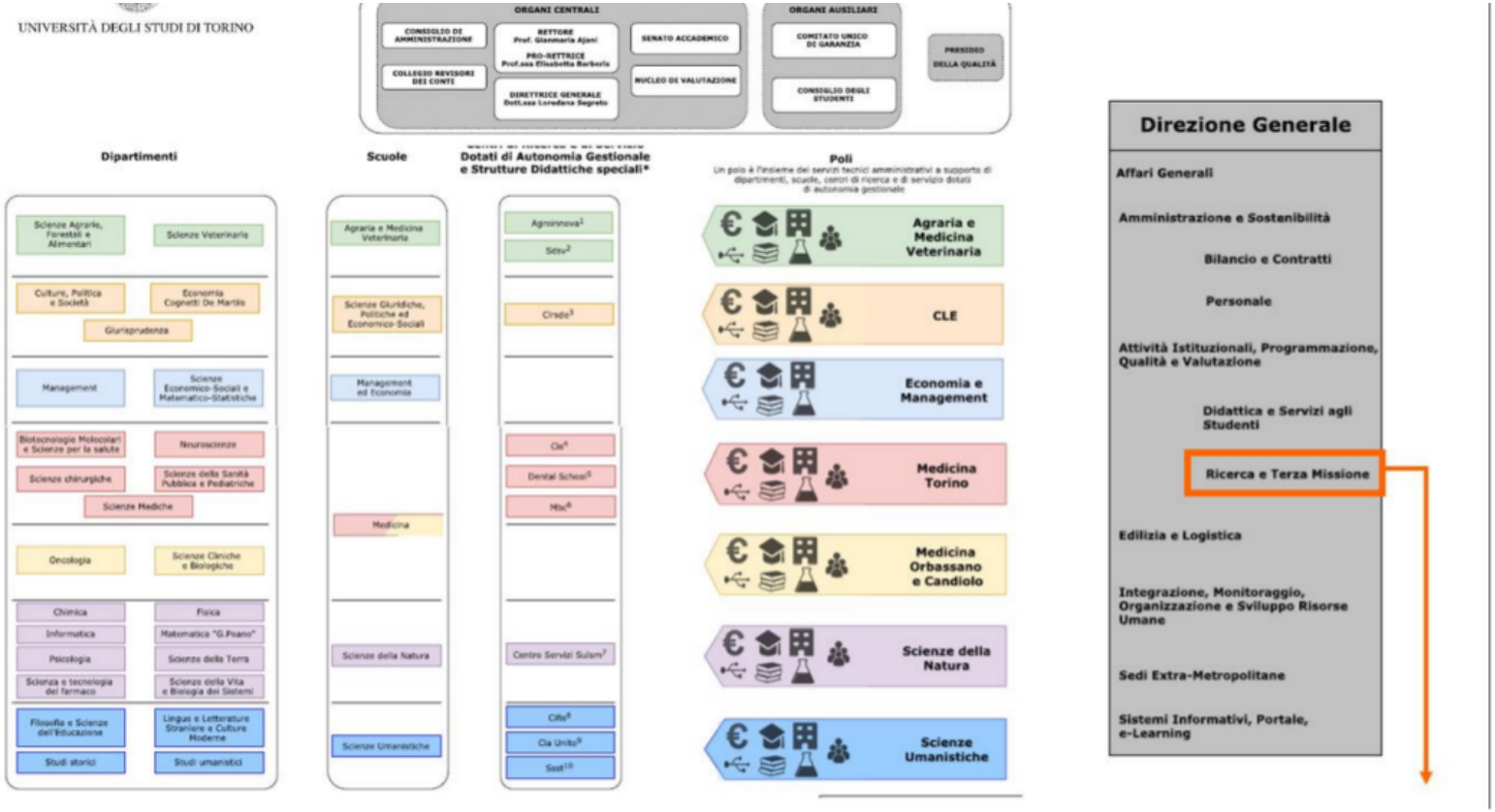
INFORMATION SYSTEM	
IS Schema	
Programming languages	
Database	
DBMS	
Size	
Data	
Nb. documents	
Nb. books	
Nb. journals	
Others	
Workflow	
Input data format	
Input data size limit	

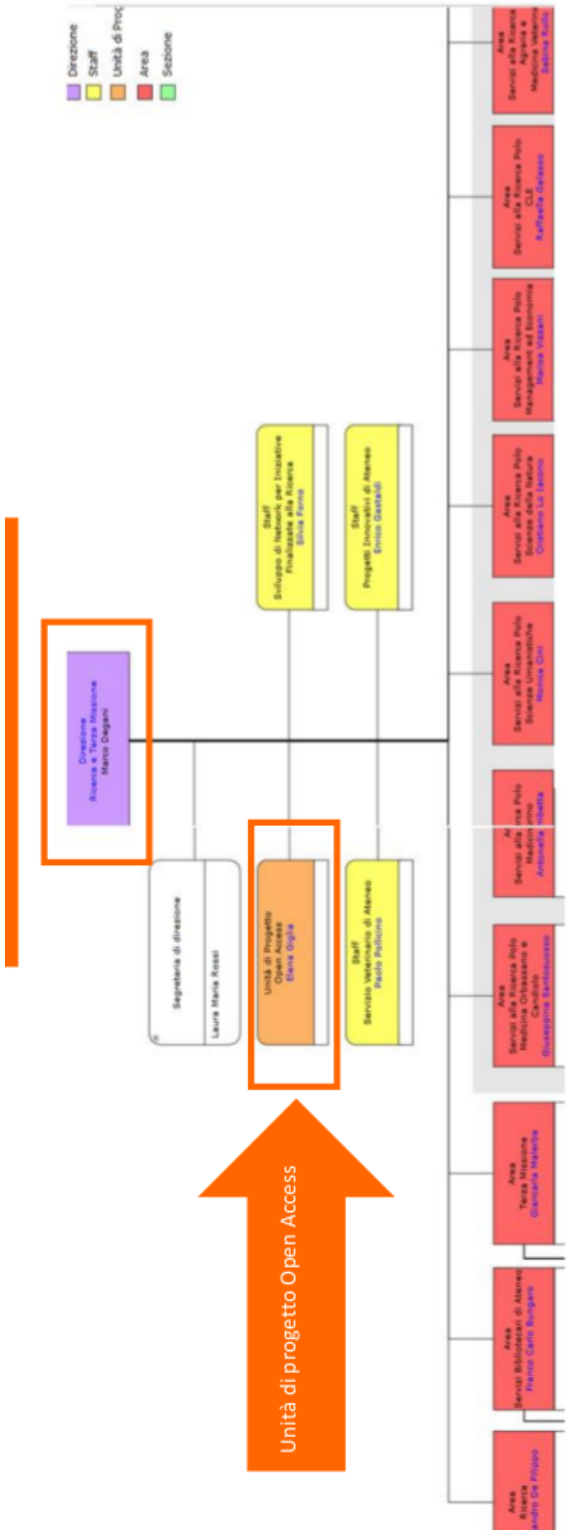
Pivot format for documents	
Output publishing formats	
html	
pdf	Collane@UniTO and SIRIO@UniTO: pdf
epub	
mobi	
others	
Access management	
SIRIO@UniTO: login and password AperTO: SHIBBOLETH	

HARDWARE
Architecture
Servers
Virtual machines
Load balancing / Clusters
Bandwidth available and used

PROSPECTS

Services you are willing to share with other OPERAS partners.
Services provided by other OPERAS partners you would like to add to your system.
Annotation, Identification
Services provided by third parties (outside OPERAS network) you would like to add to your system


UNIVERSITÀ DEGLI STUDI DI TORINO
ORGANI CENTRALI
CONSIGLIO DI AMMINISTRAZIONE
RETTORE
Prof. Gianmaria Ajani
PRO-RETTRICE
Prof.ssa Filosofella Barberis
SENATO ACCADEMICO
COLLEGIO REVISORI DEI CONTI
DIRETTRICE GENERALE
Dott.ssa Loredana Segreto
NUCLEO DI VALUTAZIONE
ORGANI AUSILIARI
COMITATO UNICO DI GARANZIA
CONSIGLIO DEGLI STUDENTI
PRESIDIO DELLA QUALITÀ
Dipartimenti
Scuole
Dotati di Autonomia Gestionale e Strutture Didattiche speciali*
Poli
Un polo è l'insieme dei servizi tecnici amministrativi a supporto di dipartimenti, scuole, centri di ricerca e di servizio dotati di autonomia gestionale
Scienze Agrarie, Forestali e Alimentari
Scienze Veterinarie
Culture, Politica e Società
Economia Cognetti De Martiis
Giurisprudenza
Management
Scienze Economico-Sociali e Matematico-Statistiche
Biotecnologie Molecolari e Scienze per la salute
Neuroscienze
Scienze chirurgiche
Scienze della Sanità Pubblica e Pediatriche
Scienze Mediche
Oncologia
Scienze Cliniche e Biologiche
Chimica
Fisica
Informatica
Matematica "G.Peano"
Psicologia
Scienze della Terra
Scienza e tecnologia del farmaco
Scienze della Vita e Biologia dei Sistemi
Filosofia e Scienze dell'Educazione
Lingue e Letterature Straniere e Culture Moderne
Studi storici
Studi umanistici
Agraria e Medicina Veterinaria
Scienze Giuridiche, Politiche ed Economico-Sociali
Management ed Economia
Medicina
Scienze della Natura
Scienze Umanistiche
Agroinnova[1]
Sitev[2]
Cirsde[3]
Cle[4]
Dental School[5]
Hbc[6]
Centro Servizi Sulam[7]
Cifle[8]
Cla Unito[9]
Sost[10]
Agraria e Medicina Veterinaria
CLE
Economia e Management
Medicina Torino
Medicina Orbassano e Candiolo
Scienze della Natura
Scienze Umanistiche
Direzione Generale
Affari Generali
Amministrazione e Sostenibilità
Bilancio e Contratti
Personale
Attività Istituzionali, Programmazione, Qualità e Valutazione
Didattica e Servizi agli Studenti
Ricerca e Terza Missione
Edilizia e Logistica
Integrazione, Monitoraggio, Organizzazione e Sviluppo Risorse Umane
Sedi Extra-Metropolitane
Sistemi Informativi, Portale, e-Learning


Direzione
Staff
Unità di Proc
Area
Sezione
Direzione
Ricerca e Terza Missione
Marco Degani
Segreteria di direzione
Laura Maria Rossi
Unità di Progetto
Open Access
Elena Giglia
Staff
Sviluppo di Network per Iniziative
Finalizzate alla Ricerca
Silvia Fonio
Staff
Progetti Internazionali di Ateneo
Enrico Gastaldi
Staff
Servizio Valorizzazione di Ateneo
Paolo Pollotto
Unità di progetto Open Access