Rethinking the IT system architecture

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Independent institution: Three libraries in one

University library of the Dresden university
Open access repository, Open journal system
Support for specific communities
- Art www.arthistoricum.net/en/
- Music musicconn.qucosa.de
- Mobility and transport

Library of Saxony
Legal deposit of media originated in Saxony
Lead of the state digitization program

State library with coordination and service functions
SLUB
Some key figures (2017)

73.000 Users
2.2 Mio Visits
6.6 Mio Downloads of digital documents
3.3 Mio Page views in our digital collections
2.7 Mio Digitized pages (own digitization and service providers)
316 Employees
11 Externally funded projects
70+ Business IT-Services for users and employees
419 Servers (most of them are virtual servers)
2.6 PB Disk and tape storage
63 Active data network components (without WLAN access points)
Rethinking IT system architecture / IT Organization
Goals and outline

Goals:
- Know IT services & systems, functionalities, importance
- Gain time for internal projects
  - Prototypical development of innovative services
  - Improvement of processes
  - Evaluation of new technologies

Outline:
- Current IT system architecture and challenges
- Target IT system architecture
- Projects

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Current IT system architecture and challenges

Challenges

Business services

- Library services (LMS, Interlibrary loan, …)
- User services (Web portals, general & for specific target groups, Mobile App, Room booking, Fab lab, …)
- Employee services (Workstation mgmt., Intranet, WLAN, VOIP, …)
- Community services (Kitodo, DFG Viewer, …)
- IT Services (Monitoring, Source code repo, …)

User services

- Digital data services (Digital long-term preservation, …)

Employee services

- Data net
- Virtual server infrastructure
- Storage
- Backup
- Identity services
- Archiving
- Technical services

High number of IT Services

=> IT people are busy with hardware and software maintenance and continuously development / adaption to user and employee needs
Current IT system architecture and challenges

Challenges

In the past we had analog media and a simple IT system architecture.
Current IT system architecture and challenges

Challenges

Activity

- Produce
- Catalog
- Search
- Use
- Discover
- Preserve
- Apply
- Understand

Digital object type

- Digitized copyright-free print materials
- Open access articles
- Databases
- Specific collections
- Legal deposit
- Research data

Time
Current IT system architecture and challenges

Challenges

Digital data management and services and the associated working processes have been developed as they were needed

⇒ Different systems for different types of digital objects with different functionalities and different processes: „Vertical“ solutions

⇒ Some functionalities are implemented multiple times and in a slightly different fashion

Digital objects are „caught“ within their systems

⇒ There are „mixed“ digital objects e.g. a journal has evolved from an analog one to a born-digital OA journal
Target IT system architecture
Consolidation

IT system architecture
Identify common functionalities and build horizontal services

- One publication service (open access repository, legal deposit)
- One presentation service with specific extensions / one authorization service
- Replace „search“-functionalities by „discover“-functionality
- Design tools for „apply“ and „understand“ as broad as possible

IT organization
List all IT services in the SLUB Service Catalog with name, description, target goups, responsibilities, used privacy-related data, … (ITIL, Data protection/GDPR, Information security)

+ Priorization of IT Business services
+ Evaluation of outsourcing options
Target IT architecture & IT organization
Overview

Production

External Meta data provider

Data management

ERP
Library management system & ERM
User management
Shibboleth
Cross Media Repository
Digital long-term preservation system
Meta Data Hub

Application

Open Data Hub
General search index
Specific search index
Authorization
Presentation (Kitodo. Presentation)

Digitization (Kitodo.Production)
Publication (Kitodo.Publication)
Consolidation projects
Overview

Current projects
Project „Cross-Media Repository“
- Repository for all digital objects and their meta data, we are responsible for
- Publication service
Project „Linked Open Data“
- Meta Data Hub
- Open Data Hub

Planned projects
Project „eRessource Hosting“
- Authorization service
Project „3D Modelling“
- Presentation
Summary

Results

Done

- SLUB Service Catalog
- "Coarse" Target IT Architecture; description of the functionalities of the build blocks
- Alignment of running projects

Planned

- Targeted acquisition of projects
- Resource planning
- Check outsourcing options

Discussion

Do you have similar challenges/problems?

How do you solve them?
Rethinking the IT system architecture and the IT Organization

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