ARCHAEOBIOCENTER

A research community of the Ludwig-Maximilians-University of Munich, Germany

The Internet of Databases

Generalizing the Archaeo Informatics Approach

ARCHAEOBIOCENTER

Introduction:

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What do archaeo related scientists want?

- Individual archives (standards are difficult)
- Publications connected to primary data (opencontext.org)
- General help on informatics
- Statistics, analysis, mining
- Managing large data
- Visualization

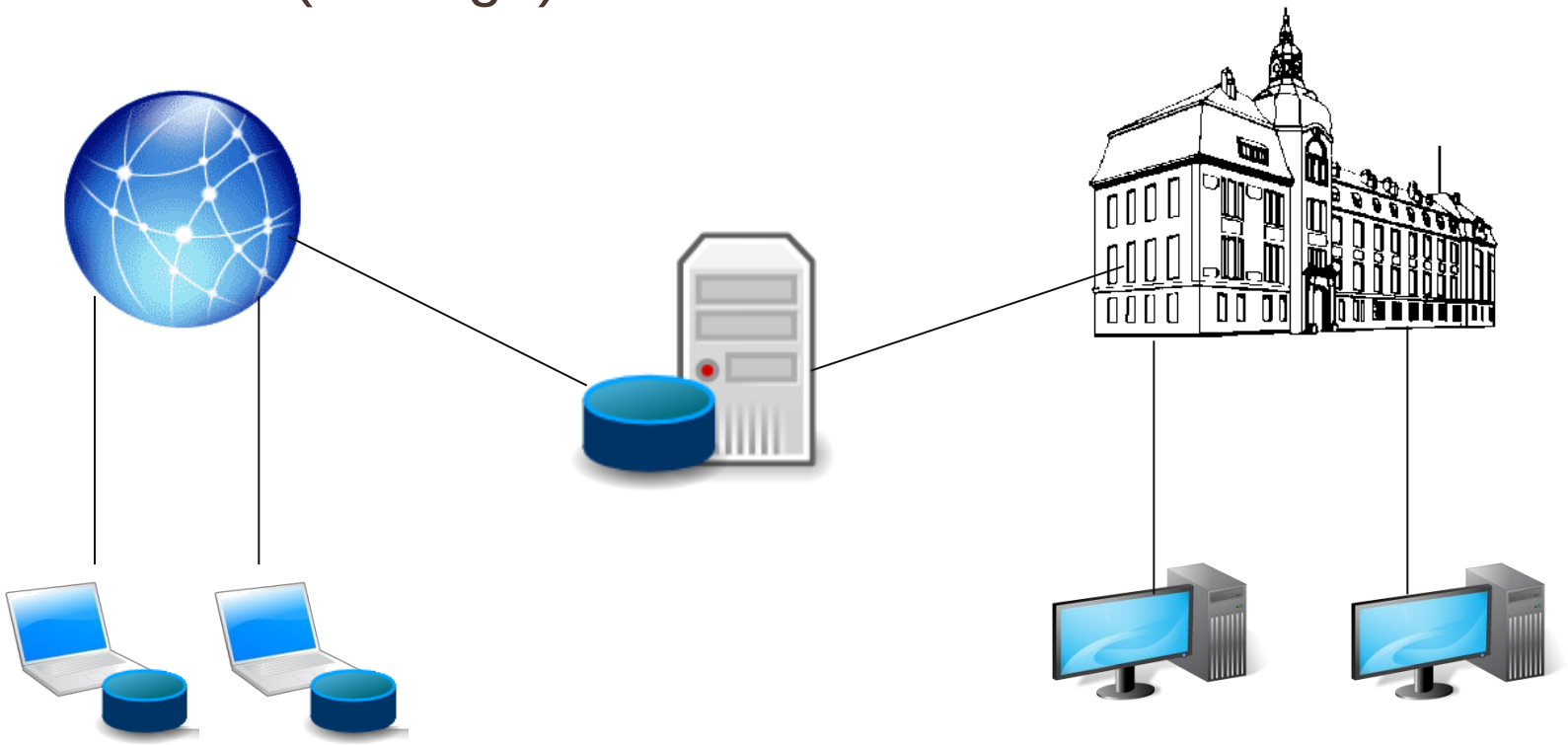
What is Archaeo Informatics?

- Traditional quantifying archives, scientific databases
- Visualization (3D, GIS), London Charter
- Text analysis
- Anchient DNA – aBioinformatics
- Isotopes, Dendroanalytics
- Modelling (e.q. „Quantifying the present and predicting the past“, CO 1998)

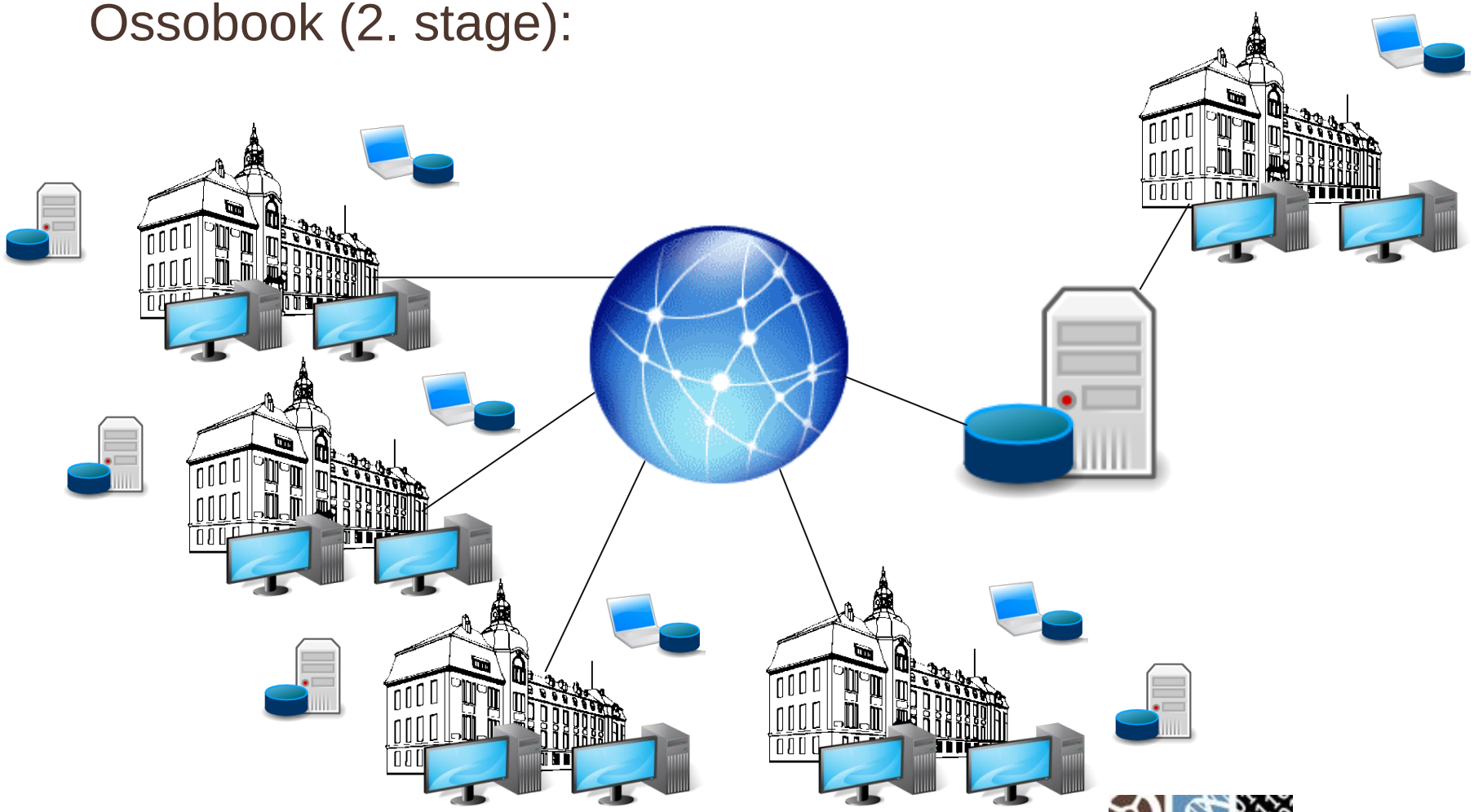
Our history on Archaeo Informatics:

- Dbase Database „OSSOBOOK“
- Development in Basel, CH (Jörg Schibler)
- First redesign
- Contact to Institute of Informatics (Hans-Peter Kriegel, Peer Kröger)
- Thesis of Jana Lamprecht

Ossobook (1. stage):

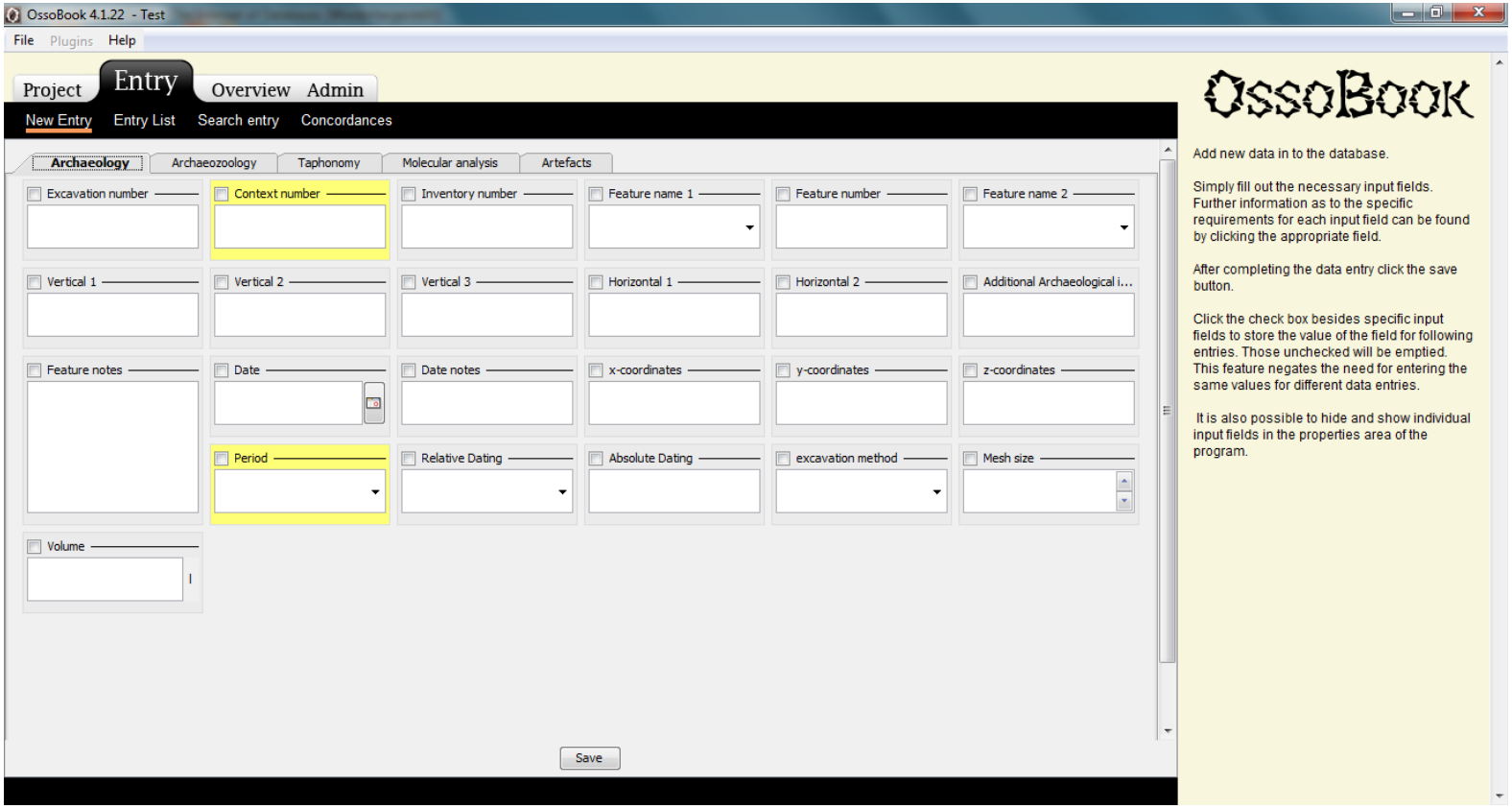


Ossobook (2. stage):



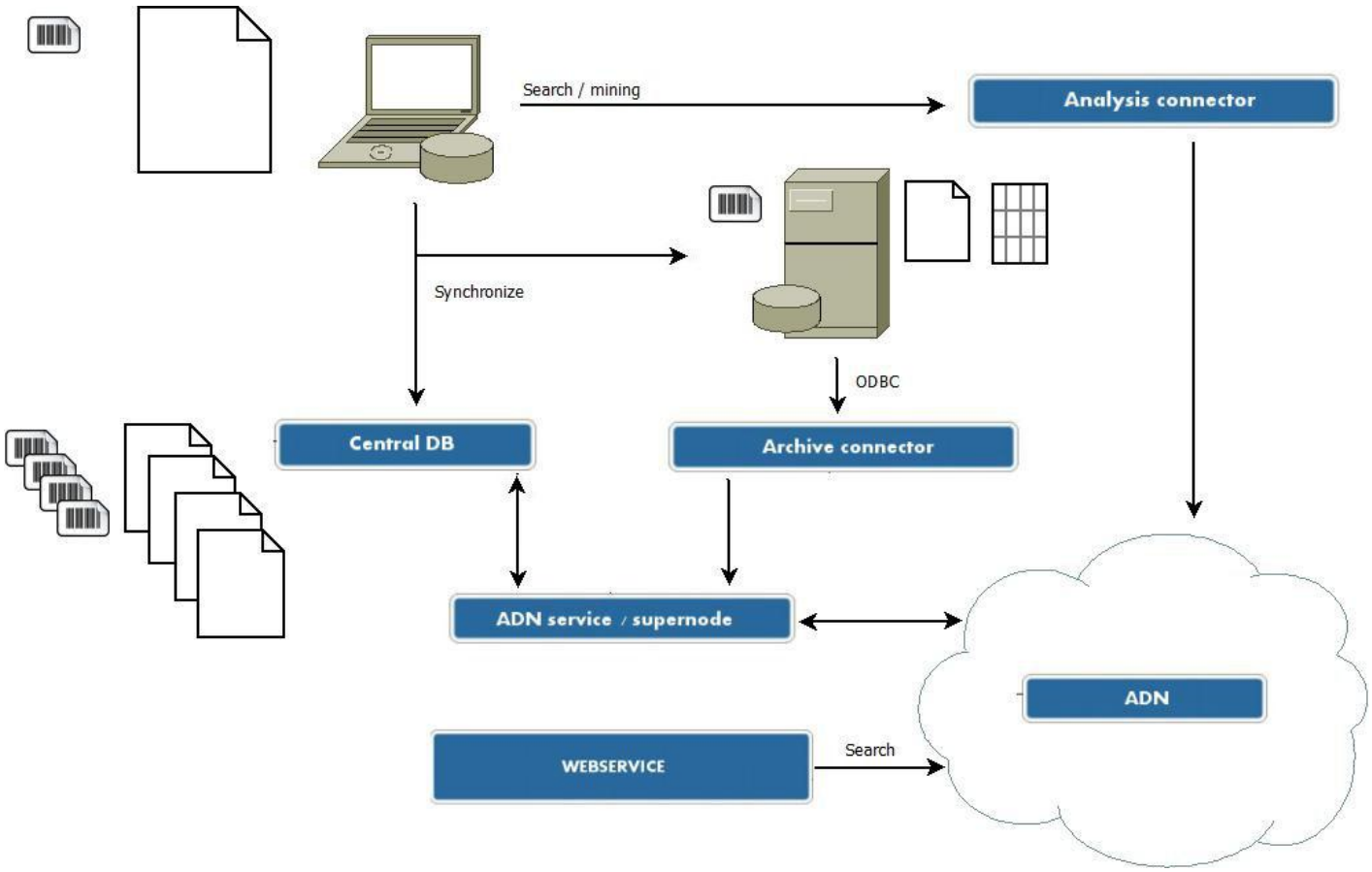
The next steps that followed:

- Introduction to BioArch
- Founding of the ArchaeoBioCenter
- Implementation of first datamining tools
- Thesis of Yulya Tsukanoya and Svetlana Danti
- Presentation in Barcelona, Paris and Aberdeen
- Publication in Hong Kong and Heidelberg
- Second technical redesign (Daniel Kaltenthaler, Johannes Lohrer)

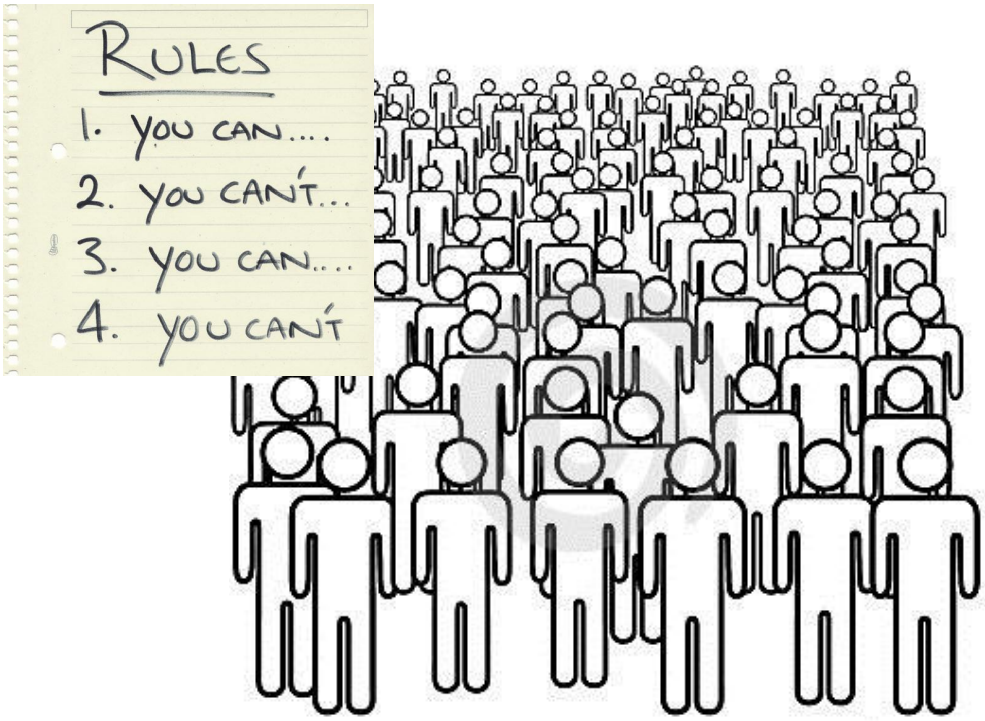

OssoBook 4.1.22 - Test
File
Plugins
Help
Project
Entry
Overview
Admin
New Entry
Entry List
Search entry
Concordances
Archaeology
Archaeozoology
Taphonomy
Molecular analysis
Artefacts
Excavation number
Context number
Inventory number
Feature name 1
Feature number
Feature name 2
Vertical 1
Vertical 2
Vertical 3
Horizontal 1
Horizontal 2
Additional Archaeological i...
Feature notes
Date
Date notes
x-coordinates
y-coordinates
z-coordinates
Period
Relative Dating
Absolute Dating
excavation method
Mesh size
Volume
l
Save
OssoBook
Add new data in to the database.
Simply fill out the necessary input fields. Further information as to the specific requirements for each input field can be found by clicking the appropriate field.
After completing the data entry click the save button.
Click the check box besides specific input fields to store the value of the field for following entries. Those unchecked will be emptied. This feature negates the need for entering the same values for different data entries.
It is also possible to hide and show individual input fields in the properties area of the program.

The Archaeo Data Network. More than bones!

- Findings label (minimal data set of descriptive data of the finding site)
- Additional information: owner, location of the database
- Unique identifier generated and stored into a central database
- Supernode connected to the central database
- ODBC connected to the archive
- Websearchable (privacy protected)


Search / mining
Analysis connector
Synchronize
ODBC
Central DB
Archive connector
ADN service / supernode
ADN
WEBSERVICE
Search

Central archives …



versus individual scientific databases

Meta 1

Meta 2

Modularity

Dual Meta Information

- Minimalize Meta 1 and add a central unique id
- Universal connectivity and searchability
- Meta 2 can be freely defined
- Opens the way for further development of the data
- Modularity for other personal needs
- Separate the connectivity from the data and offer privacy

Generalizing these thoughts

- Any dataset has a „finding label“. Algorithms can find them or use a wizard.
- Store the „finding label“ unique id to a central database and offer websearches.
- Use simple user management.
- Create privacy protection.
- Attach publications and eLearning elements
- Hook up to the Internet of Databases (e.q. environmental databases)

People:

- Basel, Jörg Schibler, Barbara Stopp
- Munich, Joris Peters, Henriette Obermaier
- Paris, Cecille Callou, Isabelle Baly
- Munich (informatics), Peer Kröger, Chris van der Meijden
- 5 Thesis (one on synchronisation, two on data mining, two on structures)
- Programming, 1 student assistent, 2 doctoral researchers
- BioArch
- ArchaeoBioCenter

Thank you for your attention

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