The Data Portal of the German Federal Ministry of Education and Research (BMBF)

as Part of the German Open Government Approach

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Structure

• **About HIS**
  who we are, what we do

• **Open Data Concept**
  the German Open Government Approach

• **The Data Portal**
  available information, structure

• **ICE / eduSTORE / HISinOne**
  - the technology behind the Data Portal
IT for Higher Education
Information technology for higher education
(~ 180 Employees)
Customer: Universities

Research on Higher Education
Studying, teaching, research, funding
(~ 80 Employees)
Customer: States

Higher Education Development
Buildings, resources, organisation
(~ 50 Employees)
Customer: States / Universities
• HIS was founded as a non-profit organization in 1969 and is jointly owned by the Federal Republic and the 16 Länder of Germany
• HIS is situated in Hannover, Germany
• HIS has around 340 employees
• HIS has an annual budget of 24 Million Euro
  – Government grants € 9 M
  – Project funds € 11 M
  – Revenues from service charges € 4 M
owners and customers
United Nations declared 2012 to be the international year of Cooperatives

„A cooperative is an autonomous association of persons [or institutions] who voluntarily cooperate for their mutual social, economic, and cultural benefit.“ Wikipedia

This could be one possible future of HIS:
- cooperativ business model („customer partnership“)
- the main customers (e.g. the universities) are members of the cooperative
- decisions and influence follows the „golden rule“
- open processes, open products, Open Source
Open Data Concept

● “A piece of content or data is open if anyone is free to use, reuse, and redistribute it — subject only, at most, to the requirement to attribute and/or share-alike.”, (www.opendefinition.org)

● The data portal can be seen as a part of the **German open government approach**, aimed at realizing modern administration by transparency, cooperation and participation.

● **all tables can be used and distributed without any restrictions** regarding copyrights, patents and other proprietary rights.
Open Data – Ten Principles

1. Completeness
2. Primacy
3. Timeliness
4. Ease of Physical and Electronic Access
5. Machine readability
6. Non-discrimination
7. Use of Commonly Owned Standards
8. Licensing
9. Permanence
10. Usage Costs
The Data Portal

BMBF's Data Portal

The Data Portal contains facts and figures to the topic areas, such as Science, Research, Development and Innovation on the one hand, and Education on the other, complemented by the International Comparison section.

The topic area Research and Innovation comprises, amongst others, statistics on Federal Government and economy's expenditure on research, as well as on R&D-Personnel and Patents.

The topic area Education contains, amongst others, statistics on Pre-primary Education facilities, such as Kindergartens, Day Care Centres and Schools, as well as statistics on Higher Education Institutions (Students, Higher Education Staff), Continuing Education and Training Assistance (BAföG Meister-BAföG).
What is ICE / eduSTORE?

● A Data Warehouse!

● An information system, a management information system, a (H)(E)MIS, a **system to support decisions (DSS)**, a business/institutional intelligence solution (BI/II), ...

● The information system of the statistical department of the German **Federal Ministry of Education and Research**

● The information system of the **Ministries of Higher Education and Research of the Länder**

● The technological basis of **Lower Saxony’s Higher Education Indicators System**

● The **BI of HISinOne**
functional range

- human resources
- students
- examination
- application
- course management
- reports
- BI with eduSTORE

HISinOne

- SVA
- FSV
- FIBU
- KBS
- BAU
- COB
- RKA
- HBS

finance operating
accounting
time registration
facilities
- controlling
travel expenses
ICE / eduSTORE – Technical Construction

Analysis Tools

| Olap | Cube Generator | Tables | Parameterizable Reports |

Data Warehouse

ETL (Extract, Transform, Load)

HISinOne Database
EduSTORE / ICE – Main System Features

• **Web application**: Access via Java capable webbrowser
• **Open architecture** - platform independence
• **Operation system**:
  – Server-side: Linux, Sun OS, MS Windows
  – Client-side: all commonly-used platforms
• **Database**:
  – Commercial databases: Oracle, Informix
  – Open source databases: MySQL, PostgreSQL
Flexibility

1. **Flexible data import**
   - aggregated data
   - individual data / pseudo individual data
   - of any kind of structure and depth of structure

2. **Flexible data export**
   by using the Flexible Data Analyzer (FleDA)

3. **Flexible data illustration**
   by using the integrated HIS Reporting Framework (HRF)
   - XML → HTML, MS Excel, Gnumeric,
     PDF, LaTeX u. a.
Data integration

- Data harmonization with an integrated key system
- Centrally maintained uniform eduSTORE key system
- Equivalence rules
- System knows internal key hierarchies
Access Paths to eduSTORE
Access Path 5: Management Cockpit
Flexible Data Analyzer

### Standardtabellen

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<th>Nummer</th>
<th>Titel</th>
<th>Formate</th>
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<td>Tab BC002</td>
<td>Test</td>
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<td>Tab BC003</td>
<td>18.06.09 Test</td>
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<td>Test 24.06.09</td>
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<td>Testtabelle Homburg</td>
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