



Niedersächsisches Ministerium
für Wissenschaft und Kultur

HIS

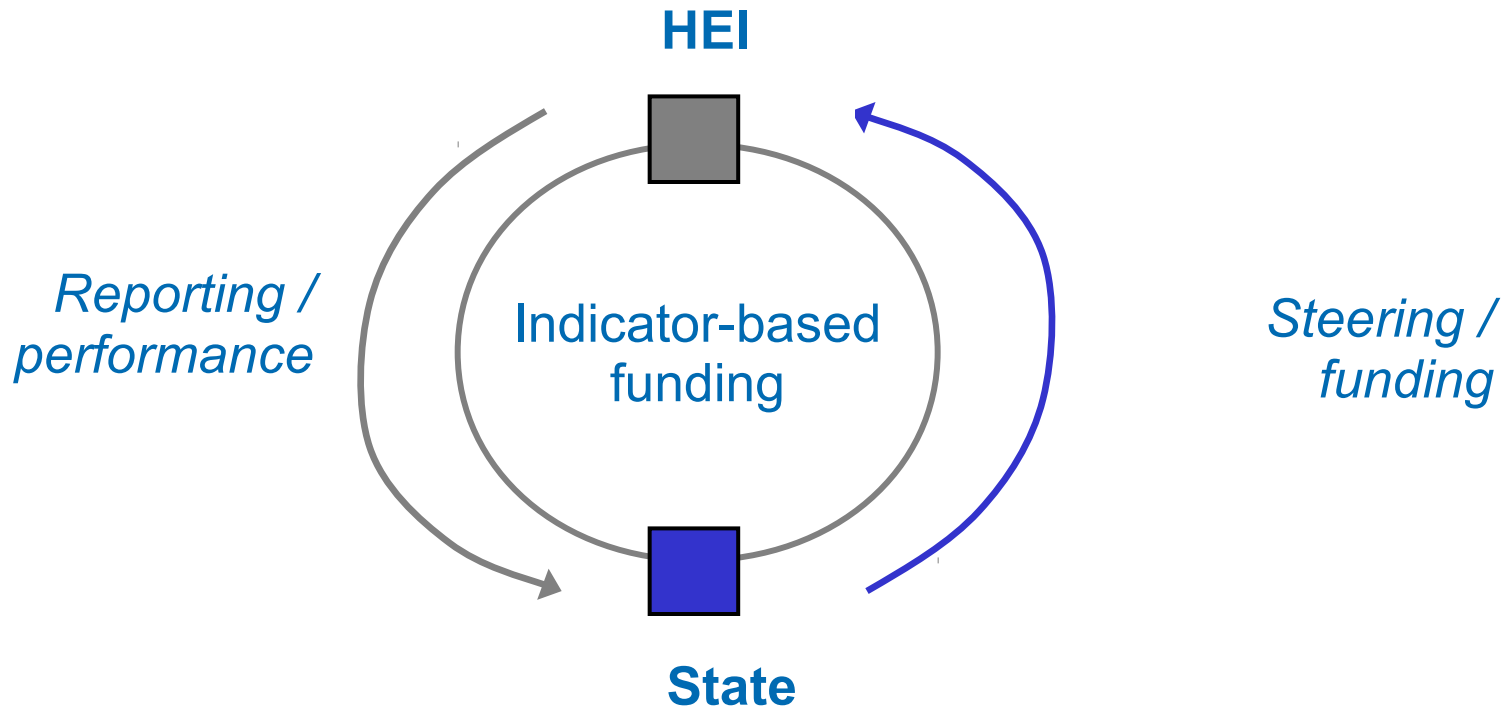
Hochschul
Informations
System GmbH



Lower Saxony's Higher Education Indicator System: An Information System for Performance Based Funding



Peter Muessig-Trapp, 15 June 2010



Guiding question	Basis of decision	Goal(s) of funding	Possible instruments
What has the university achieved? (target agreements)	Past performance	to reward a good performance; competition market	Formula-funding according to performance-based indicators

Mail goal of the (not anymore really) new steering models:

Self Direction of HEI

- Transparency and Competition inbetween the institutions
- Respect Hierarchies of Responsibilities (go down to the faculties and departments)
- Quality of the reporting system – oriented on the needs of the local users (not only on the needs of the politicians)
- Quality of data – make the data comparable and valid (building a task force for quality of official data)

Common problems for indicator models

- Conflict of stability and reactivity
- Time lag: reference to values from long time ago
- Respect the differences between subject groups
- The more indicators used the better the system?
- Don't be too sophisticated!



KISS: keep it simple and stupid!

Some considerations for HE funding

- Components: past cost, (past) performance, strategic development
- Transparency of procedures and results
- Fairness of competition (“level playing field”)
- Indicators should be clearly understood
- Regular review of operation and effects
- Information cycle should complement funding system

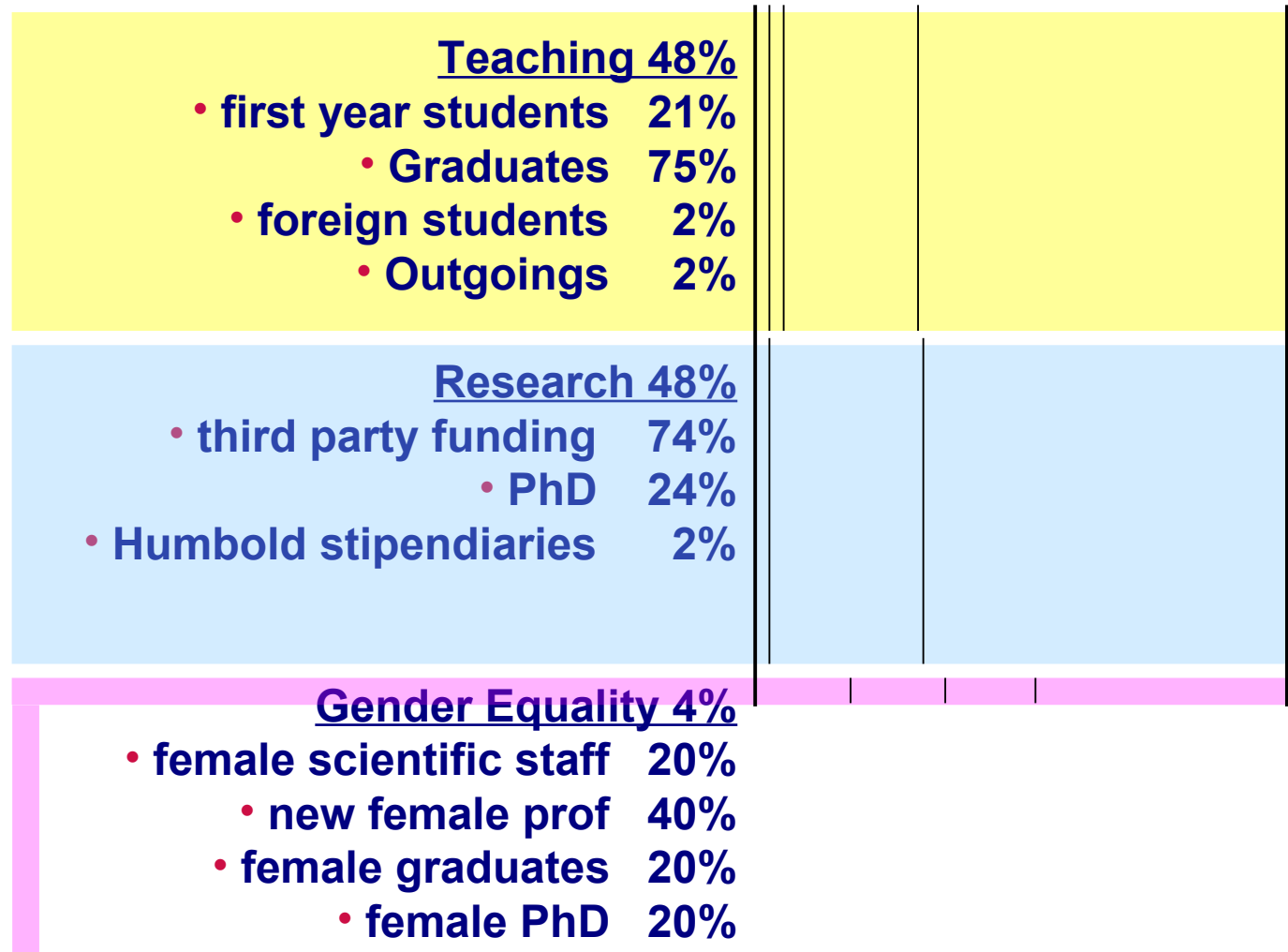
Problems with the lower saxony formula in the beginning

- **Questions asked by HEI's – but not answered:**
 - Which compartements lose, which gain?
 - How's the formula calculated? What where the inputs?
 - What is our net gain / loss in the different areas?
 - How do we fare in comparison to other HEI's? Where do we stand?
- **Data quality**
 - Many different sources have to be coordinated
 - Validity is difficult to test

- Get data from official statistical office sources where possible
 - homogeneity, validity
- Distribute teaching data (students, graduates) to allow real partaking of university departments (data validation, observing competitors)
 - fairness
- Finer grained distribution of indicators on department level
 - transparency

- **Teaching**
 - Beginning students
 - Graduates weighted by semesters
 - Foreign students
 - Outgoings
- **Research**
 - Third party funding
 - Doctorates
 - Stipendiates
- **Gender Equality**
 - Female scientific staff
 - Newly appointed female professors
 - Female doctorates
 - Female graduates

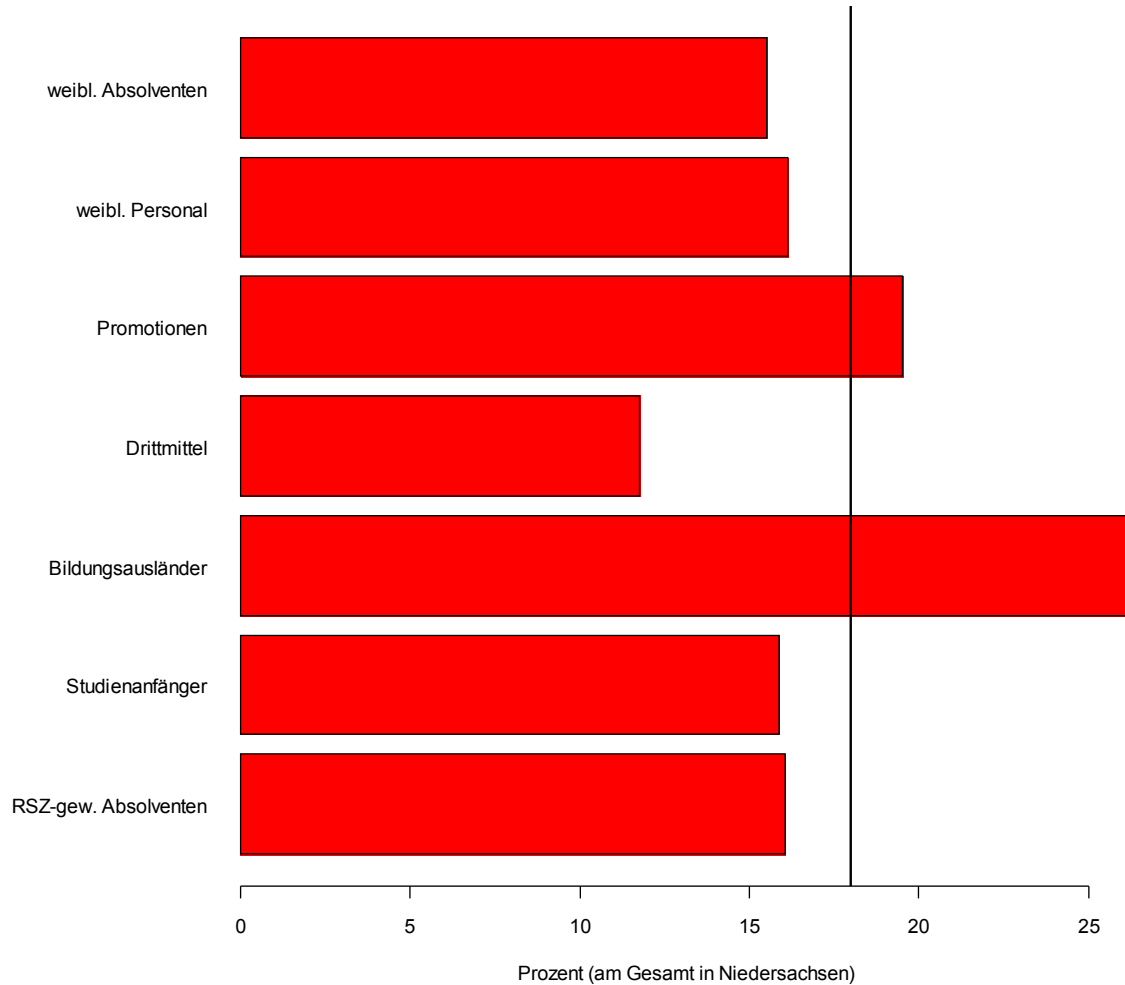
- subjects
 - lowest level of data aggregation, a subject can use services of different departments and even other units
- university departments
 - individual organisational units of universities – difficult to compare across universities
- teaching & research units (TRU)
 - defined for comparing universities on departmental level (although a comparison is not 100% possible as of yet...)
- formula subject groups (FSG)



**Example: A university gets 18 % of the budget, but achieves only 16,06 % alumnis in a subject group
 => the university loses with respect to this parameter
 => the budget percentage is the benchmark for the performance**

	budget		alumnis	
subject group 1 (Social Sciences)	sum	percent	sum	percent
Lower Saxony	262,5 Mio €	100	5546,3	100
University	47,2 Mio €	18	891	16,06

Profil of strengths and weaknesses
of a university in one subject group



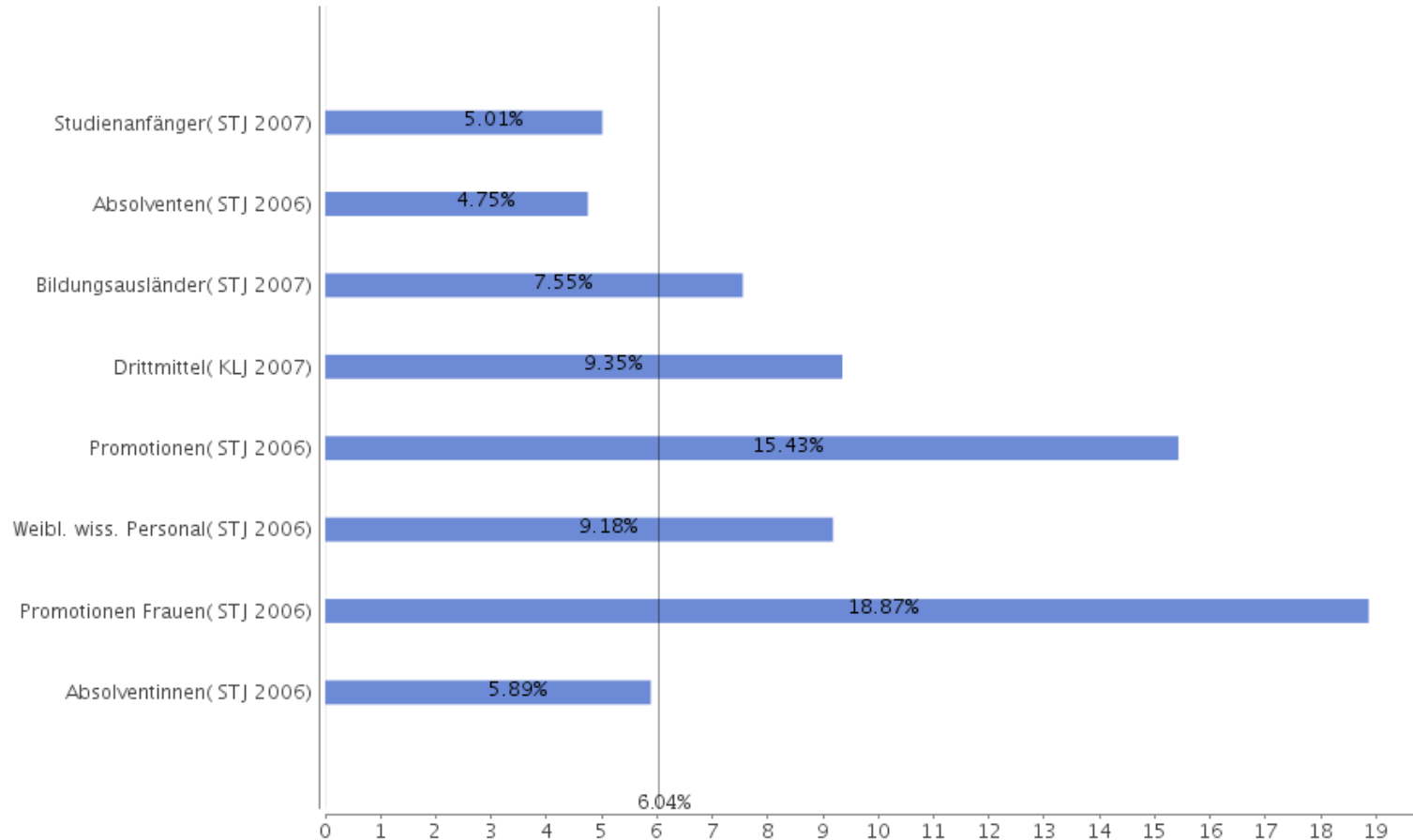
- Formula output
 - per FSG with weighting of the formula areas (i. e. output = 48% teaching + 48% research + 4 % gender equality = 100%)
- Simple Performance measurement:
 - output > input within a FSG: good performance
 - output < input within a FSG: bad performance
- **BUT:** We want to compare inbetween Universities, which can't be done on basis of FSG!
- For that purpose we have to measure performance of smaller units!

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U Göttingen | Biologie

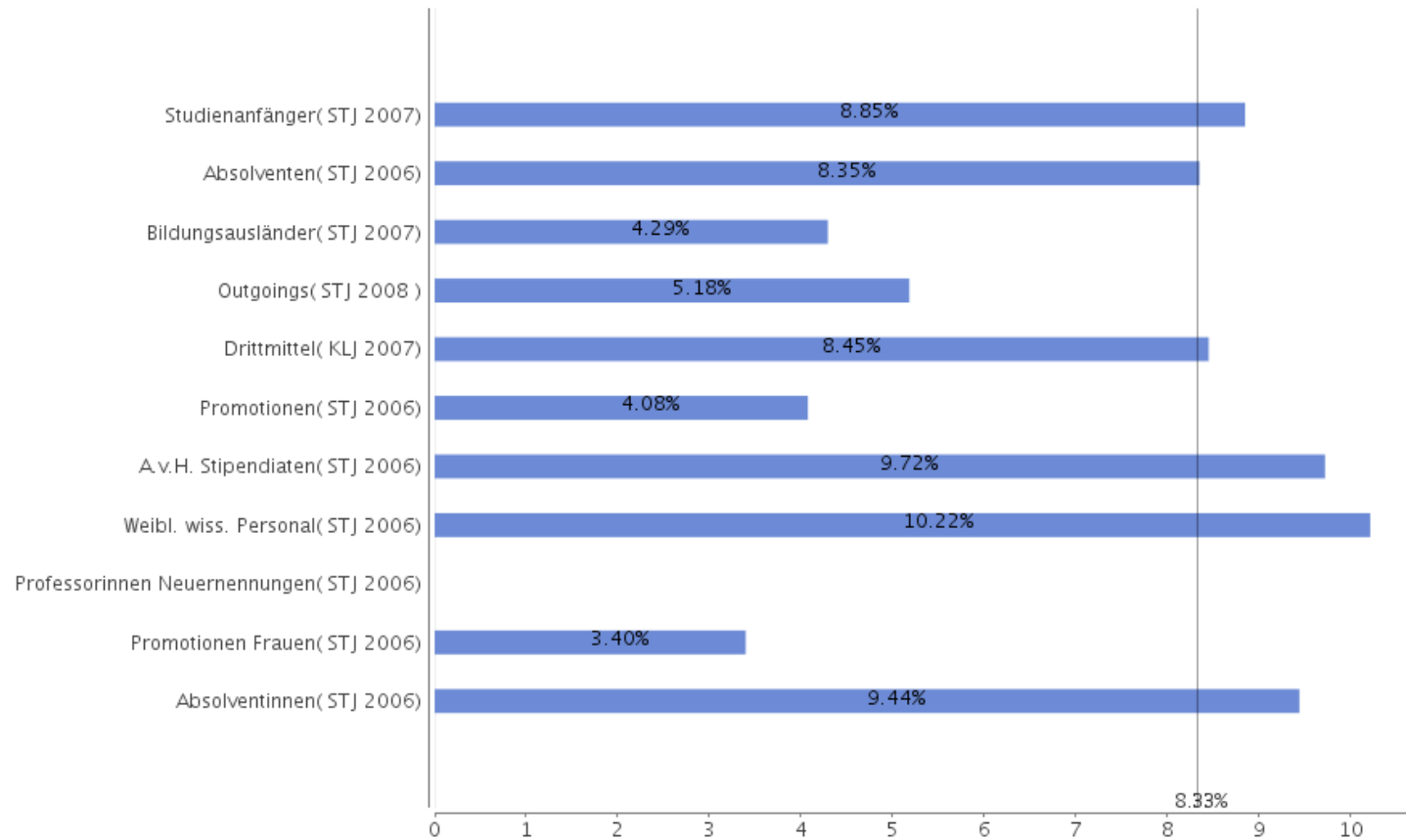
Anteil der Leistungsparameter an der Summe des jew. Parameters
in der Formelfächergruppe Naturwissenschaften (U)
Senkrecht: Anteil an den Haushaltsmitteln



U Osnabrück | Insgesamt

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web portal

- Main goal: transparency for all involved HEIs, basis for decision making
- Users:
 - HEI management staff
 - ministry for HE
 - (maybe later: broader public, press)
- Possibility to view and download data in all aggregation levels
- Data protection: restriction of access based on user roles possible
- diagrams to visualize results

Live in action ...

The Lower Saxony Indicator System for Higher Education Funding (HKS - Hochschulkennzahlensystem)

Hochschulkennzahlensystem Niedersachsen

Logout

Start

2009

Fachhochschulen

Hochschule Braunschweig /
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Hochschule Osnabrück

Universitäten

Hochschule für Bildende
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Technische Universität
Braunschweig

Guten Tag, Herr Muessig!

Sie sind als HKS-Administrator eingeloggt.
Wählen Sie eine Hochschule aus dem Menü links.

<http://icehks.his.de/>

eduSTORE – Main System Features

- **Web application:** Access via Java capable web browser
- **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)

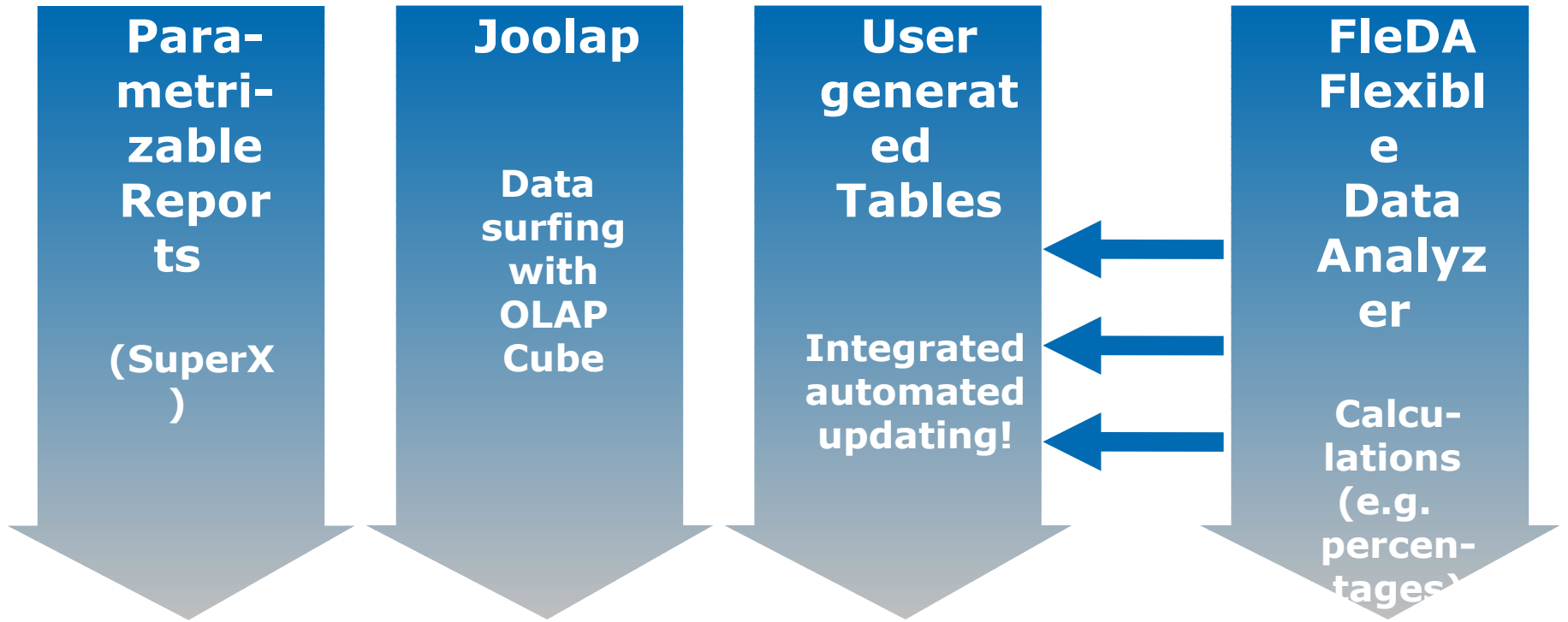
- XML → HTML, MS Excel, Gnumeric, PDF, LaTeX u. a.

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



eduSTORE

Free Software

Offering the
freedom of
free software

ICE is free software!

- Open Source: **Source code is available free of charge**
- Everybody is allowed to use the software
- Everybody is allowed to **change the source**
- Everybody could **adapt the software** to one's specific needs
- Open Source software provides you with the **freedom of independency**
- **No new dependencies** on foreign countries or on any company



N-HE

Using a
in Higher Edu

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Peter Muessig-Trapp, HIS Hanover

Colombo, 16 July 2008

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