Higher Education
Information Systems 1

The Overall Concept

In-house Seminar
CARDS 2003
Dr. Edgar Frackmann
Structure of the Presentation

• Information flows in Higher Education
• Information Facilitators
• Information for Management, Information for Decision Making
• Information and its sources
• Possible information systems and relations among these systems
• The overall concept of Higher Education Information Systems in Croatia
Do we need an information system only dedicated for quality assurance processes? (i.e. for external accreditation, evaluation and audit)
Exchange process model of higher education

Service Provider  
Fund Receiver

\[=\]

\[=\]

Fund Provider  
Service Receiver

ex-ante information
Funds
accompanying information
Services
ex-post information
Information needs in the exchange processes

Government

Funds

Monitoring Information Accountability

Higher Education Policy

Higher Education Institution

Core Processes

Supporting Processes

Resources Management Processes

Education

Library & Information Services

Institutional Management

Research

Students / Potential Students

Employers

Funds

Services

Informing

Evaluation

Self-Evaluation Self-Knowledge

Informing

Evaluation

Services
Information needs in the exchange processes

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Services

Informing

Evaluation

Self-Evaluation Self-Knowledge

Informing

Evaluation

Services

Employers
Information Systems needed

- To inform potential students and employers of graduates
Information Systems needed

- To inform the government for higher education policy decisions
Information Systems needed

• To provide **self-knowledge of the institution** (self-evaluations)
Information Systems needed

- To support the educational and resources management process
Information Facilitators in Croatian Higher Education

- Policy Advisory Body: National Council
- National Quality Assurance Units: Council and Agency
- National Statistics Unit: Central Bureau of Statistics
- Higher Education Information Centre: ?
- Research on Higher Education Unit: ?
Information Systems in Croatian Higher Education

- For Decision Making:
  - Students/Employers: Study Programme Register (PR)
  - Government: Higher Education Data Base (HEIS)
  - Institutions: ISVU

- For Management
  - Educational Process Management: ISVU
  - Resources Management: ? (e.g. SAP)
• Snapshots from ISVU to be sent to HEIS once a year or once a semester at fixed dates from all programmes and institutions

• See handout: Report: Student Profile of the Programme
Input – Process – Output
Management and Decision Making

Input

Students
(Potential Students)
Decision: To study a certain programme at a certain institution

Process
Admission Management
HR Management
Financial Management
Non-personnel Resources Management
Educational Process Management

Output
Public Relations
Company / Employer Relations
Placement Services (incl. for internships)
Alumni Relations

Decision Making

Students

HEIs
Decision: Student Intake according to capacity
Decision: Provide capacity according to student demand
Decision: Provide capacity according to societal goals and labour market needs

Employers
Decision: To employ graduates

Study Places

Supply

Demand

Graduates
Overall Concept for Higher Education Information Systems in Croatia

National Level
- Evaluation Process Support for Council and Agency
- QA related Information Exchange
- QA Forum

MOZVAG

Study Programme Register
PR

Study Programme Information
Students Staff Courses Examination

Higher Education Information System
HEIS

Finances Space

Research on Higher Education
- Student Surveys
- Student Feedback Surveys
- Alumni Surveys
- Employer Surveys

Statistical Data:
- Census Data
- School Statistics
- Labour Market Statistics

Higher Education Statistics at the National Statistics Office

HEI Level

Study Process Management System
- Admission
- Programme
- Student Record
- Teaching Premises
- Teaching Staff
- Course Delivery

ISVU

Resources Management System
- Accounting
- Procurement
- Human Resources and Payroll
- Asset Inventory
- Premises
- Stock Control
- Budgeting

SAP (eg.)
<table>
<thead>
<tr>
<th>Information for</th>
<th>Management</th>
<th>Decision Making</th>
<th>4. Informing Potential Students and Employers / Informing the Public</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The Educational Process</td>
<td>ISVU</td>
<td>ISVU</td>
<td>HEIS</td>
</tr>
<tr>
<td>2. Institutional Policy</td>
<td>ISVU</td>
<td>ISVU</td>
<td>HEIS</td>
</tr>
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<td>3. National Higher Education Policy</td>
<td>ISVU</td>
<td>HEIS</td>
<td>PR</td>
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<td>4. Informing Potential Students and Employers / Informing the Public</td>
<td>HEIS</td>
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**Information on**
- 1. Individual Participant in Educational Process
- 2. Individual Study Programme
- 3. Provider of Educational Service
- 4. The Higher Education System
Overall Concept for Higher Education Information Systems in Croatia

Study Process Management System
- Admission
- Programme
- Student Record
- Teaching Premises
- Teaching Staff
- Course Delivery

Study Programme Register (PR)

Higher Education Information System (HEIS)

Resources Management System
- Accounting
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ISVU

SAP (eg.)

Higher Education Statistics at the National Statistics Office

Statistical Data:
- Census Data
- School Statistics
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Research on Higher Education
- Student Surveys
- Student Feedback Surveys
- Alumni Surveys
- Employer Surveys

MOZVAG
- Evaluation Process Support for Council and Agency
- QA related Information Exchange
- QA Forum
Let’s have a break
Higher Education Information Systems 2

System Specifications/System Design for Croatian Higher Education Information Systems

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Dr. Edgar Frackmann
Information and Quality Assurance

- Information that is thought to be self-knowledge (self-report)

- Information that is thought to inform the evaluators
Information and Quality Assurance

• Should the information be generated and updated only for the quality assurance procedures?
• Shouldn´t it be available permanently as so-called self-knowledge of those being responsible for the educational processes?
• Shouldn´t this be the same information to be provided permanently to the stakeholders of the educational processes?
MOZVAG Restrictions

- Only process support (workflow system)
- Information on study programmes only in non-structured text files
- Few data, few quantitative data
MOZVAG Benefits

- MOZVAG is a national level information system
- MOZVAG is a Study Programme Register on national level
- MOZVAG is accepted as a national level information system
- MOZVAG is filled in the course of legally based processes
- MOZVAG has proved to be a useful tool for QA processes
What the new system should achieve:

• Contain and present homogeniously structured qualitative and quantitative information about the study programmes.

• Contain and flexibly present in reports quantitative data on higher education, i.e. on input, processes and output of study programmes, Faculties and Higher Education Institutions.
System Overview
Overall Concept for Higher Education Information Systems in Croatia

Study Programme Register (PR)
- Study Programme Information
- Staff
- Courses
- Examinations

Higher Education Information System (HEIS)
- Students
- Finances
- Space

Study Process Management System (SPMS)
- Admission
- Programme
- Student Record
- Teaching Premises
- Teaching Staff
- Course Delivery

Resources Management System (RMS)
- Accounting
- Procurement
- Human Resources and Payroll
- Asset Inventory
- Premises
- Stock Control
- Budgeting

MOZVAG
- Evaluation Process Support for Council and Agency

QA related Information Exchange
- QA Forum

Higher Education Statistics at the National Statistics Office
- Statistical Data:
  - Census Data
  - School Statistics
  - Labour Market Statistics

Research on Higher Education
- Student Surveys
- Student Feedback Surveys
- Alumni Surveys
- Employer Surveys

ISVU

SAP (eg.)
Study Programme Register (PR)

- To inform the potential students in competition for the best high school graduates to enrol in the respective programme/institution
- To inform potential employers of the graduates in order to facilitate the employment of the graduates
Higher Education Data Base (HEIS)

- Contain data about staff, students, finances, space, courses, examinations
- Flexible report generator
- Provide accountability information
- Inform the general public
- Provide the Central Bureau of Statistics with Higher Education Data
- Provide Council and Ministry with decision related information
Students?:

- Applicants
- Newly enrolled students
- Enrolled students
- Graduates
- Deregistering students
Overall Concept for Higher Education Information Systems in Croatia

Evaluation Process Support for Council and Agency
QA related Information Exchange
MOZVAG

QA Forum

Study Programme Register
PR

Higher Education Information System
HEIS

Study Programme Information
Students Staff Courses Examination
Finances Space

Higher Education Statistics at the National Statistics Office
Statistical Data:
- Census Data
- School Statistics
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ISVU

Resources Management System
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SAP (eg.)
QA Process Support (MOZVAG 2)

• To help the Agency, the Council and the Higher Education Institutions to jointly manage the QA processes as efficiently as possible

• To make the relevant QA related documents accessible
Before Development starts: To-do-List

• Write System Specifications/System Design (including data flow definitions)
• Achieve consensus about system functionality
• AZVO having the assignment of the responsibility for the system
• Consensus with HEIs to fill Study Programme Register
• Consensus with HEIs to deliver data to HEIS
• Legal basis for the obligation of HEIs to fill PR and feed HEIS
• Financial commitment of the Ministry
• Contract for the development of the system
• Detailed System Design together with developer
QA Process Support & Document Archive (MOZVAG 2)

Flexible Step/Status Support:
- Make Mozvag to be used for all potential QA procedures:
  - Accreditation of new programmes
  - Reaccreditation of programmes
  - Progarm Review
  - Evaluation of Higher Education Institutions
  - Audit of Higher Education Institutions
  - Licensing of new Higher Education Institutions
  - Evaluation of Research Unit

Access and Editing Authorization

Flexible Document Attachment (Documents referring to Study Programme / Faculty / HEI code)
- Use Programme Descriptors and Reports instead of former Text Documents

Comprehensive Logging (History) and procedure schedule monitoring

Study Programme Register (PR)

Study Programme

Identification and Characteristics

Faculty

Curriculum Plan

Modules

Descriptions of the programme

Link to documents

Higher Education Institution

Identification and Characteristics

Reports

Higher Education Data Base (HEIS)

Data Base

Containing data on:

Staff
- Students:
  - Applicants
  - Admissions (1st year and others)
  - Enrolled Students
  - Graduates (based on candidates for examination)
  - Deregistering Students

Finances

Space

Courses

Module Examinations

Report Repository

Flexible Report Generator

National HE Statistics incl.
- CBS statistics
- Annual Reports of Council
- HE Performance Indicators of Intern Statistics

Indicators for QA Exercises

Reports on Request
Information Units Hierarchy

- A Higher Education Institution consists of Faculties
- Faculties offer Study Programmes
- Study Programmes consist of Modules
- A Module can be studied and is offered in a concrete semester or more than one semester in the form of Courses
- A Course may be a lecture and/or a seminar and/or exercises
Study Programme Register

- Identification and Characteristics of the Programme (see handout)
- Description of the Programme (see handout)
- Curriculum Plan (see here)
- Module Description (see handout)
- Study Programme related reports (see handout)
- Reports for the QA procedures (see handouts)
## Curriculum Plan of the Programme

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Weekly Hours per type of course and semester</th>
<th>Total hours per semester week</th>
<th>Type of assessment / exam for Module</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>L</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Code</td>
<td>Title</td>
<td>Compulsory Modules</td>
<td>Classification needed</td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elective Modules</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total hours weekly**

ECTS credits compulsory

ECTS credits elective

ECTS credits total

Description of options with regards to elective courses

**Abbreviation:**

L: Lecture
S: Seminar
E: Practical Exercise

} maybe more options
Study Programme Register

• Identification and Characteristics of the Programme (see handout)
• Description of the Programme (see handout)
• Curriculum Plan (see here)
• Module Description (see handout)
• Study Programme related reports (see handout)
• Reports for the QA procedures (see handouts)
Student records

- Example see handout
**All Programme Identification fields in the students records have to be subdivided:**

<table>
<thead>
<tr>
<th>Main Programme (main in the sense, that in this student record it is reported about the student applying or being enrolled in this programme)</th>
<th>Programme Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Programme consisting of: (in case of possible combinations):</td>
<td></td>
</tr>
<tr>
<td>Partial Programme 1:</td>
<td>Programme Code</td>
</tr>
<tr>
<td>And</td>
<td></td>
</tr>
<tr>
<td>Partial Programme 2:</td>
<td>Programme Code</td>
</tr>
<tr>
<td>Second Programme:</td>
<td>Programme Code (just for information that the student is enrolled also in another programme. This field is empty, if this is not the case. In case this field is filled, then a second student record exists, where this programme is the main programme)</td>
</tr>
</tbody>
</table>
QA Forum

• There should be a broad information base related to QA

• The Forum discussion should be initiated by the Agency

• The open question and answer part of the platform should be guided by the Agency
QA Forum: Information Base

- News
- Calendar of events
- Laws and regulations
- Procedures and forms
- Activities of Council and Agency
- Annual Evaluation plan
- Description of Croatian QA experiences
- Foreign Experiences
- Link to Croatian HEIs
- International Links
- QA in the Corporate World
- Literature Pool
QA Forum: Theme related Forum

- Work in Progress
- Student Surveys
- Teacher and courses evaluations
- Monitoring student progress
- Use of ISVU for QA
- How to generate data on length of studies, drop-out, success rates, retention/attrition
- Assessment of educational outcomes
- Curriculum development
- Establishing alumni links
- Labour market studies
- What is self-knowledge
- Indicators for educational quality?
- Organize institutional QA
- SWOTs analysis
- QA and strategic planning
QA Forum: Q&A Forum

Guided by the Agency
That's it, Thank you