USOS

Student Management Information System for Polish Universities at its Tenth Anniversary

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Outline

- Information about USOS

- System components

- Development

- Best practices

- Benefits and challenges

What is the USOS

- Student Management Information System for Polish Higher Education Institutions (HEI)
  - Main task - administrative support of the teaching and learning process
  - Year 2000 - beginning of the development by experienced programmers, IT graduates with good knowledge of specificity of the higher education
    - therefore offers effective solutions and can compete with commercial products available on the educational market
  - University of Warsaw - project leader
  - Home page: http://usos.edu.pl/

Business model of USOS

- Owner:
  University Centre for Informatization (MUCI) – the unit created by the Conference of Rectors of Polish Universities in 2002
  - non-profit organization which gathers 38 HEIs
  - partner for consortia of European universities
  - mover and coordinator of other projects deployed in Poland (e.g., eduroam, electronic Student ID card)
- The base license fee and annual fees are very low
- All the collected funds are spent on the application development
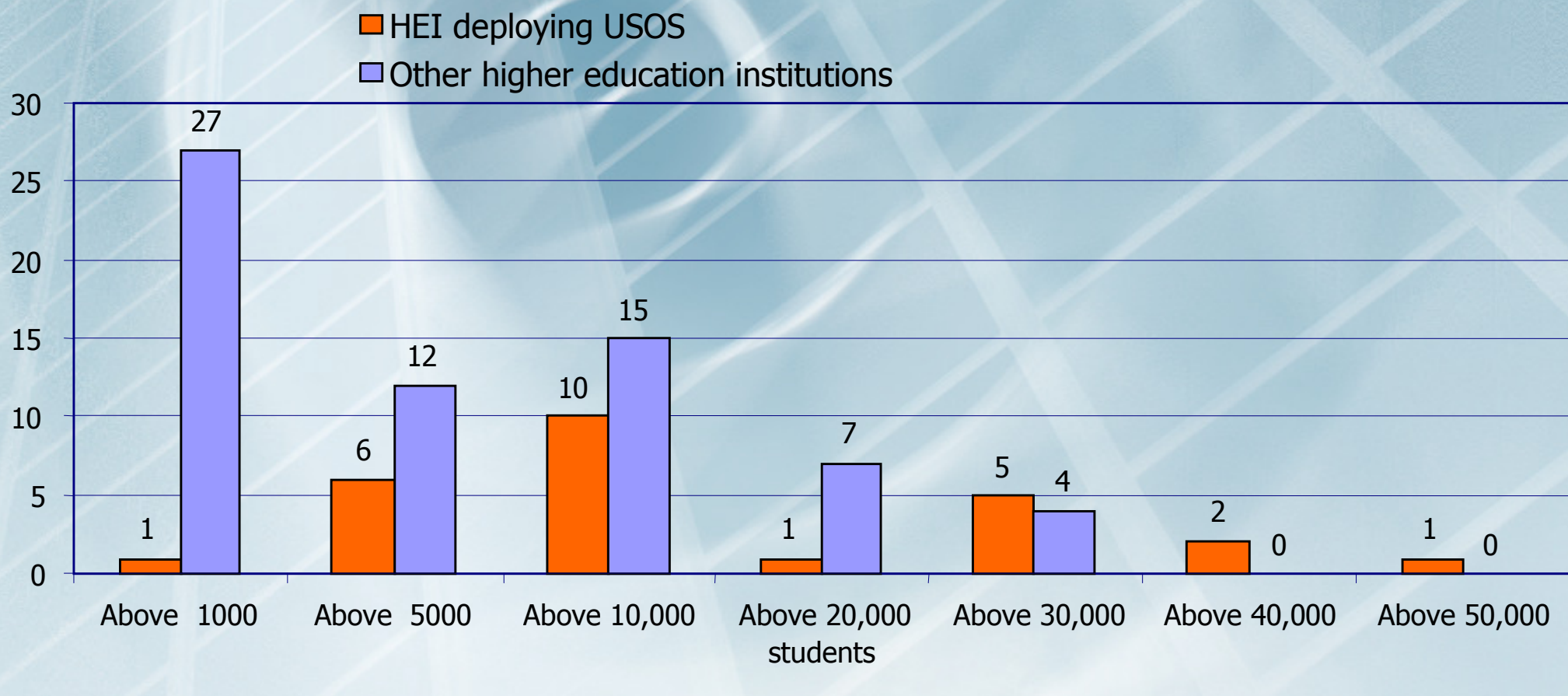
USOS and Educational Market in Poland

- The USOS in 2009 was used by 27 public higher education institutions, which constitutes
  - 20 percent of the universities in this category
  - 40 percent of their students

Categories of HEI Deploying USOS	Quantity	Participation in educational market	Participation in handling students
public	27 from 131	20,61%	40,00%
non-public	3 from 325	0,92%	0,74%

- In 2010 four more universities joined the project

USOS and HEI by number of students

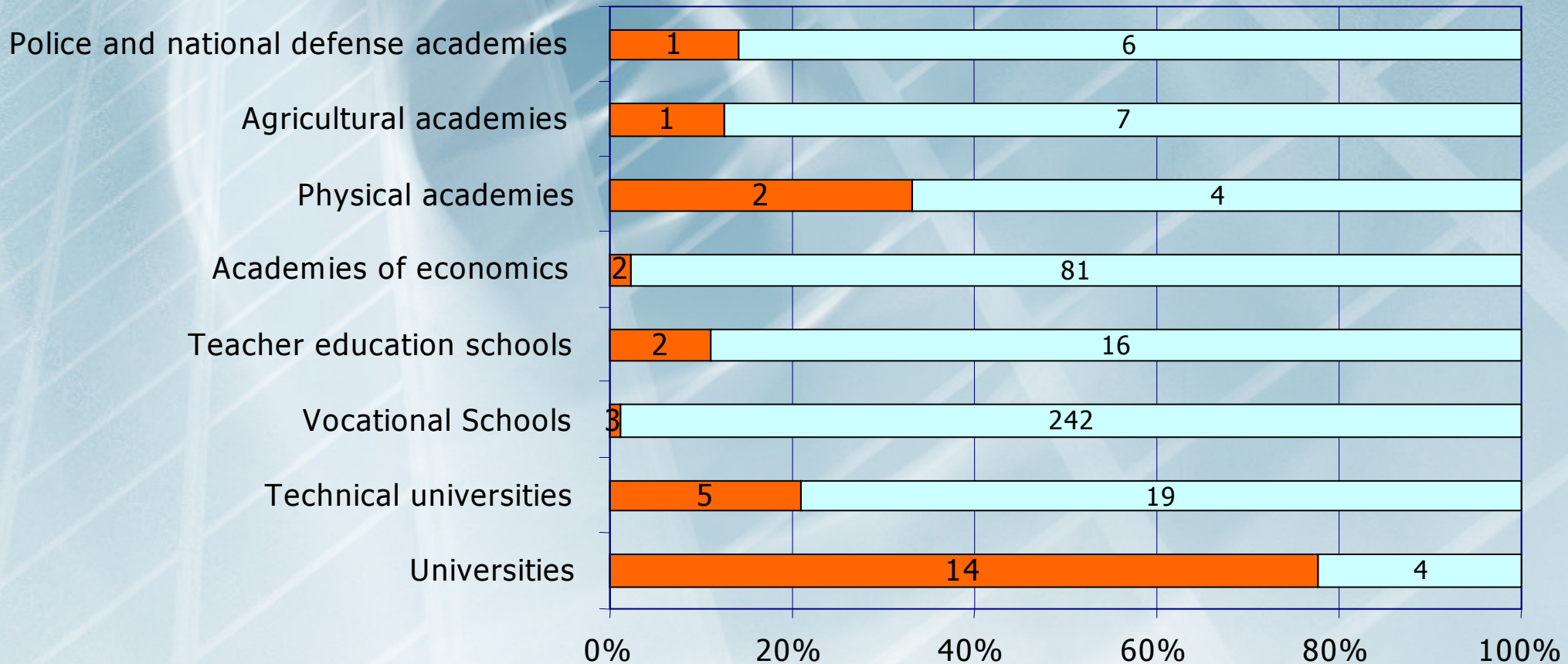- Eight of 12 largest Polish universities (over 30 thousand students each) deploy USOS

Legend: HEI deploying USOS (orange); Other higher education institutions (purple)

Category	HEI deploying USOS	Other higher education institutions
Above 1000	1	27
Above 5000	6	12
Above 10,000	10	15
Above 20,000 students	1	7
Above 30,000	5	4
Above 40,000	2	0
Above 50,000	1	0

USOS and types of HEI

- Not only universities are using this system

Chart legend: ■ HEI deploying USOS □ Other higher education institutions

Type	HEI deploying USOS	Other higher education institutions
Police and national defense academies	1	6
Agricultural academies	1	7
Physical academies	2	4
Academies of economics	2	81
Teacher education schools	2	16
Vocational Schools	3	242
Technical universities	5	19
Universities	14	4

USOS in numbers

- ## Selected figures describing the project

Total number of	Quantity
applications associated with USOS/installations	8 / 65
servers for main databases and associated applications	79
defined fields of study/courses	5702 / 528087
developers/people deploying the system	from 5 to 10 / 89
people in team deploying the system	from 2 to 7
users from HEI's administration / academics / students	3693 / 26798 / 497185

Where can we find USOS

Splendid USOS

- The most innovative elements of the system were presented at EUNIS and other conferences
  - EUNIS Elite Award for excellence in implementing information systems for higher education (2007)
  - http://www.eunis.org/
- Universities deploying USOS have the highest quality of education
  - for example three of them took three first places in the Ranking of Higher Education Institutions published in 2010 by magazines Rzeczpospolita and Perspektywy.pl
  - their position in this annual ranking has not changed for several years

System components

- **USOS-Admin**
  - interface for administrative staff
  - handling most aspects of university education
    - students and teachers personal data
    - study programs, plans and requirements, course of study
    - schedule of courses and classes, manage room resources
    - degree certificates (all processes support ECTS credit system and diploma supplements)
    - student financials (scholarships and fees)
    - survey and reporting

- **Associated web-based applications**
  - dedicated for students and academics
  - full functionality in English language version
  - can use Central Authentication Servise (CAS) to authenticate their users

Associated applications: USOSweb

- USOSweb - Virtual Dean's Office
  - presentation of students' results and achievements
  - filling in questionnaires on the teaching process
  - participating in the elections
  - communicating with other participants of groups and their teachers
  - changing photo for Student ID card
  - outgoing mobility
  - course registration which supports individual education plans and multiple methods of registration for classes

Associated applications: Admission and KReM

- Admission: Internet Registration of Candidates
  - supports the admission process with self-service functionality
  - gives full information about status of the qualification for registered candidates
  - administration, measurement and analyzing recruiting effectiveness becomes very easy
- KReM: Central Registry for Results of Maturity Examinations (https://krem.uw.edu.pl/)
  - provider: University of Warsaw
    - agreement between HEI and University of Warsaw
    - candidates' data essential for the recruitment process

Associated applications: Course and Diploma Catalog

- Fully compliant with requirements of the Bologna Declaration
- Course Catalog: electronic brochure
    - essential information about the university
    - programs of study offered by the university units
    - recruitment and practical information for students
- Diploma Catalog: graduate thesis
    - information about the topics, authors
    - carrying out the process of review and evaluate thesis by authorized persons
    - storing electronic versions of thesis and written reviews

Associated applications: Mobility (outgoing)

- Outgoing mobility of students and academic teachers
  - part of USOSweb service
  - bilateral agreements and recruiting
  - arrangements with coordinators (Learning Agreement)
  - returning with the Transcripts of Records
- Near future: The Mobility Project
  - main objective: electronically data exchange between partner universities by calling web-services
  - project gathers consortia of European universities (e.g., CINECA, MUCI, SIGMA, HIS, Ladok, etc.)
  - http://usos.edu.pl/Mobility/

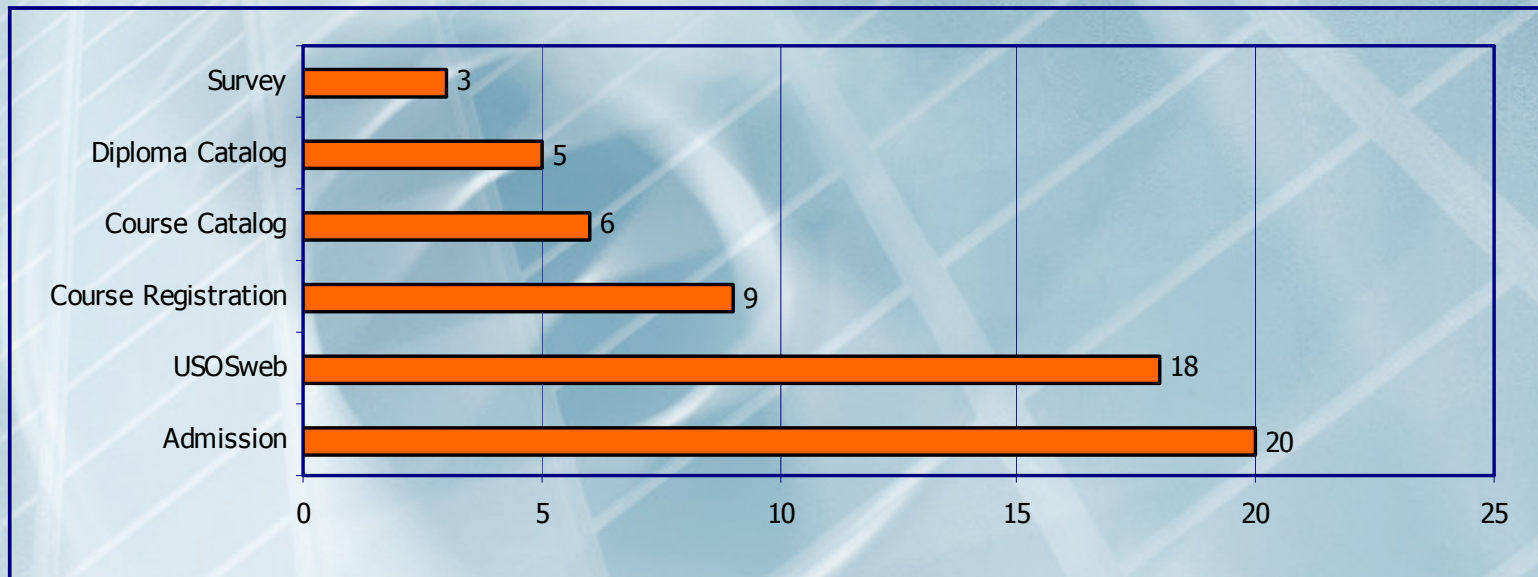# Associated applications: Mobility (incoming and domestic)

- **Incoming mobility of foreign students**
  - registration and process of qualification
    - personal data and accommodation
    - studying details: domains, units and courses offered by the university (integration with Course Catalog)
    - necessary electronic copies of documents
- **Domestic exchange (project "MOST")**
  - similar to original EU SOCRATES
    - dedicated for Polish universities
    - participate nineteen universities
  - central national registry
    - https://most.uka.uw.edu.pl/
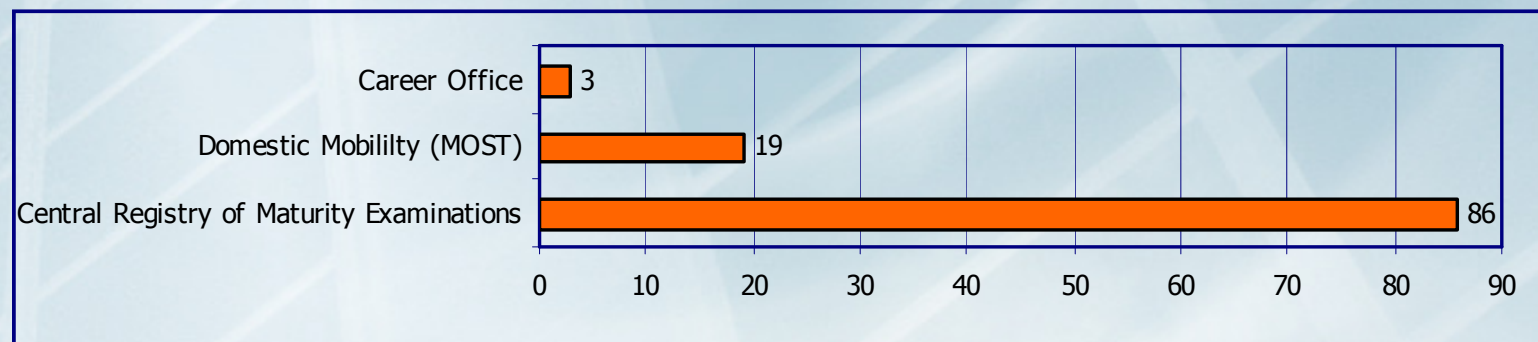
Associated applications: Career Office

- Promotion and guidance for students
  - central national registry - https://biurokarier.edu.pl/
  - validated by the system USOS students' data from several universities (of course, only those students who agree to share them)
  - employers allow to:
    - submit bids for practices and jobs
    - review the data
    - contact with students and alumnus

Associated applications used by HEI

- **The most popular applications installed on HEI**

Survey: 3
Diploma Catalog: 5
Course Catalog: 6
Course Registration: 9
USOSweb: 18
Admission: 20

(axis: 0, 5, 10, 15, 20, 25)

- **HEI benefiting from the central applications**

Career Office: 3
Domestic Mobililty (MOST): 19
Central Registry of Maturity Examinations: 86

(axis: 0, 10, 20, 30, 40, 50, 60, 70, 80, 90)

USOS integration with other IT applications

- Wide variety of IT applications which support HEI activities
  - exchanging data among systems

Category of system	Methods used
Human Resource Management	▪ CSV files
Financial Accounting and Management Information	▪ own scripts
Library Management	▪ table views
Student Mail Accounts	▪ special applications

- Integration – one of the main objectives of the future development of the system

USOS development (1)

- Partnership and exchange of experience
  - expectations of the universities determine the main directions of development
  - discussion leading to consensus
  - people deploying the system get assistance and support of colleagues from other universities in solving technical and organizational problems
- Software development principles and methods
  - similar to those used in open-source society
  - source code is available on request
  - local changes and developed own modules can be incorporated into the official version of the system

USOS development (2)

- Involvement of academics in development of the system
    - research of new algorithms and solutions, for example applying artificial intelligence to the registration of classes
    - support and assistance of graduate students which developed prototype versions of selected modules
        - gain the first experience
        - provides good recommendations
        - accelerates implementation of new expected features at lower cost

Best practices (1)

- The leader of the project
  - review any element of the system
  - describe status of tasks on a daily basis
- Tests of every new modules
  - two-level additional testing:
    - first on sample database
    - second at university which is an author and implements a prototype
- Reference sample database
  - latest structure
  - full but anonymous data
  - good for testing and training
- Sample scripts for data migration from old university databases are available on demand

Best practices (2)

- Access to bugtracker and testing tool (https://bugzilla.usos.edu.pl/)
    - also to the representatives of major users
    - used to suggest new ideas, exchange views and gather support for new projects
- Free training courses and workshops
    - also for other solutions used at universities, for example CAS or LDAP
- Constantly updated documentation
    - contains also all aspects of implementation (for example schedule of all activities, conducting training, legal acts, etc.)
    - helps in successful implementation of the system

Benefits of USOS

- Standardization of processes carried out in higher education
- Changing the university administration
  - more effective and efficient
- Improving management
  - human resources
  - educational buildings and rooms (e.g., planning teaching, filling classrooms)
- Improving communication among teachers and students (e.g., modules U-Mail, Exam)
- Maximizing value of teachers with functions (e.g., Erasmus Coordinator, Catalog Editor, Course Coordinator, etc.)

Challenges

- Develope better tools for data mining and visualization

- Provide better services for students, faculties and staff – more self-service functionality with non-stop system access

- Better integration and data exchange with other university information systems

- Time to rethink earlier technology decisions – parts of the systems will be rewritten using new technology platform

Thanks to
Janina Mincer-Daszkiewicz

- Leader of the USOS and all associated projects from their inseption