Managing curriculum development and enhancing quality

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The problem

There are many ineffective educational development projects

- Superficial needs analysis
- Sketchy stakeholder analysis
- Missing stakeholder management plan
- Poor coordination between partners, developers
- Weak quality management
- Lack of business plan

Aims & Outline

Aims

- to share some practical ideas, which were usefully applied in GIS curriculum development, and
- to discuss some aspects of educational management and quality enhancement.

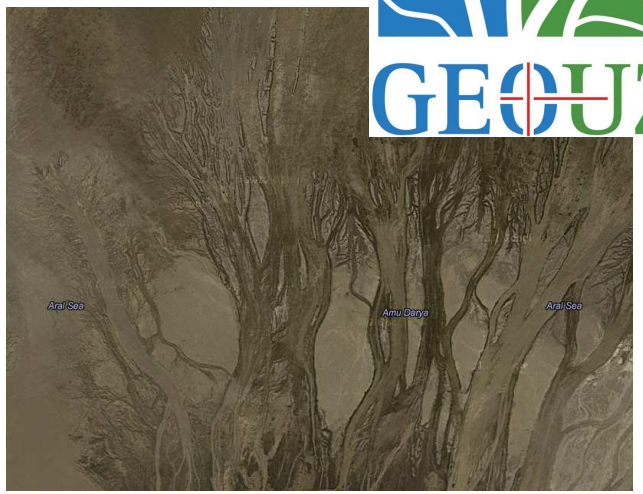
Outline

- Management tools
- Needs analysis
- Competency matrix
- Quality tools

Tempus GE-UZ

Objectives

- Develop a successful MSc in Geoinformatics
- Ensure qualified staff for course delivery
- Build a sustainable educational network
- Support UZ in sustainable development



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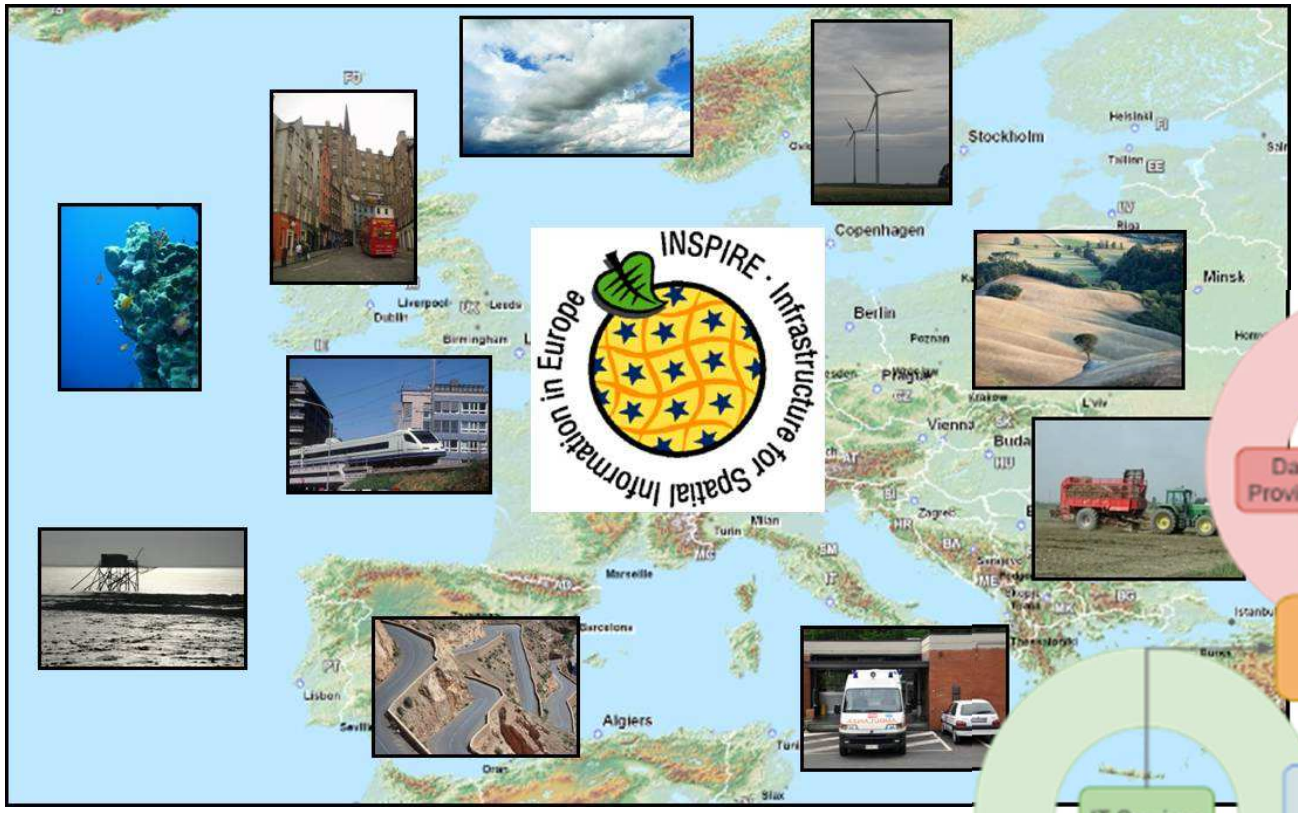
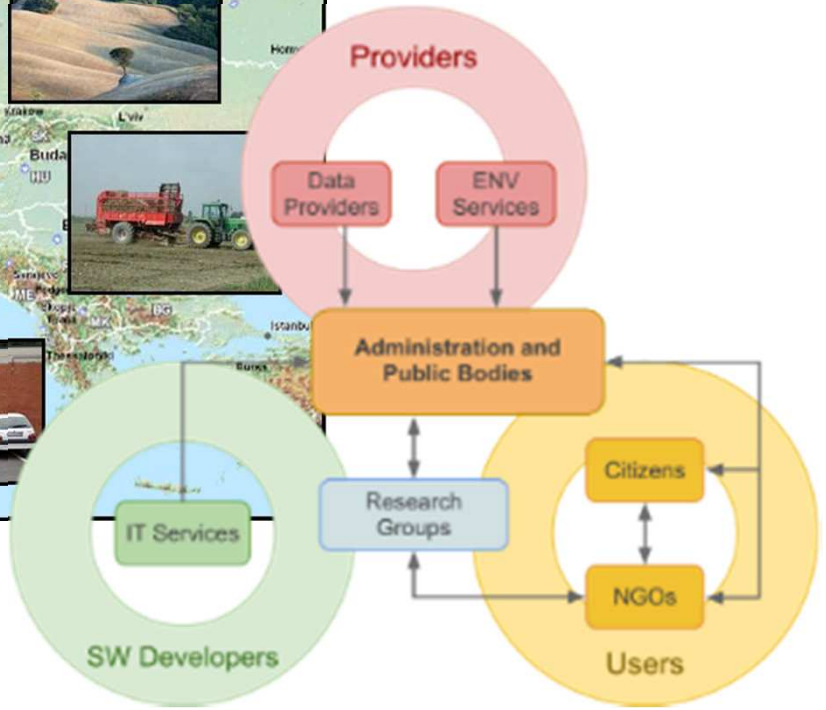




cip competitiveness and innovation framework programme 2007–2013

Management tools

- Proposal writing
  - LFM
- Implementation phase
  - As-is analysis
  - Stakeholders power interest matrix
  - Needs analysis – market demands
  - Competency matrix
  - Quality manual

As-is analysis

Where we are?

- Current situation (internal & external)
  - Organizations
  - People
  - Processes
  - Systems

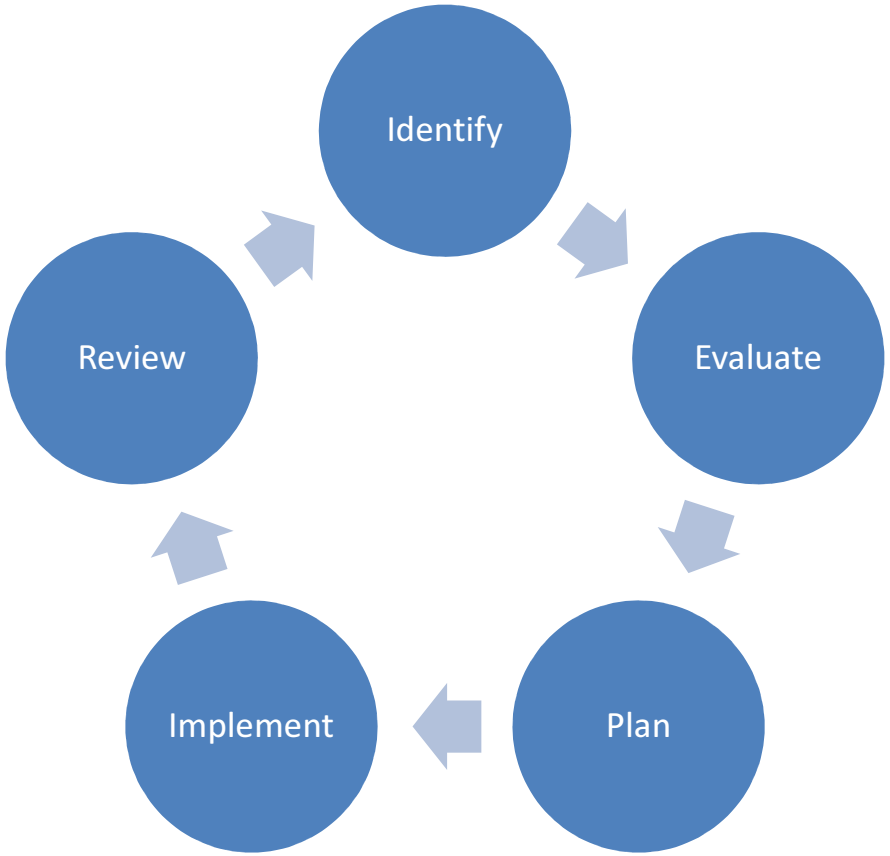
Needs analysis

Where should we go?

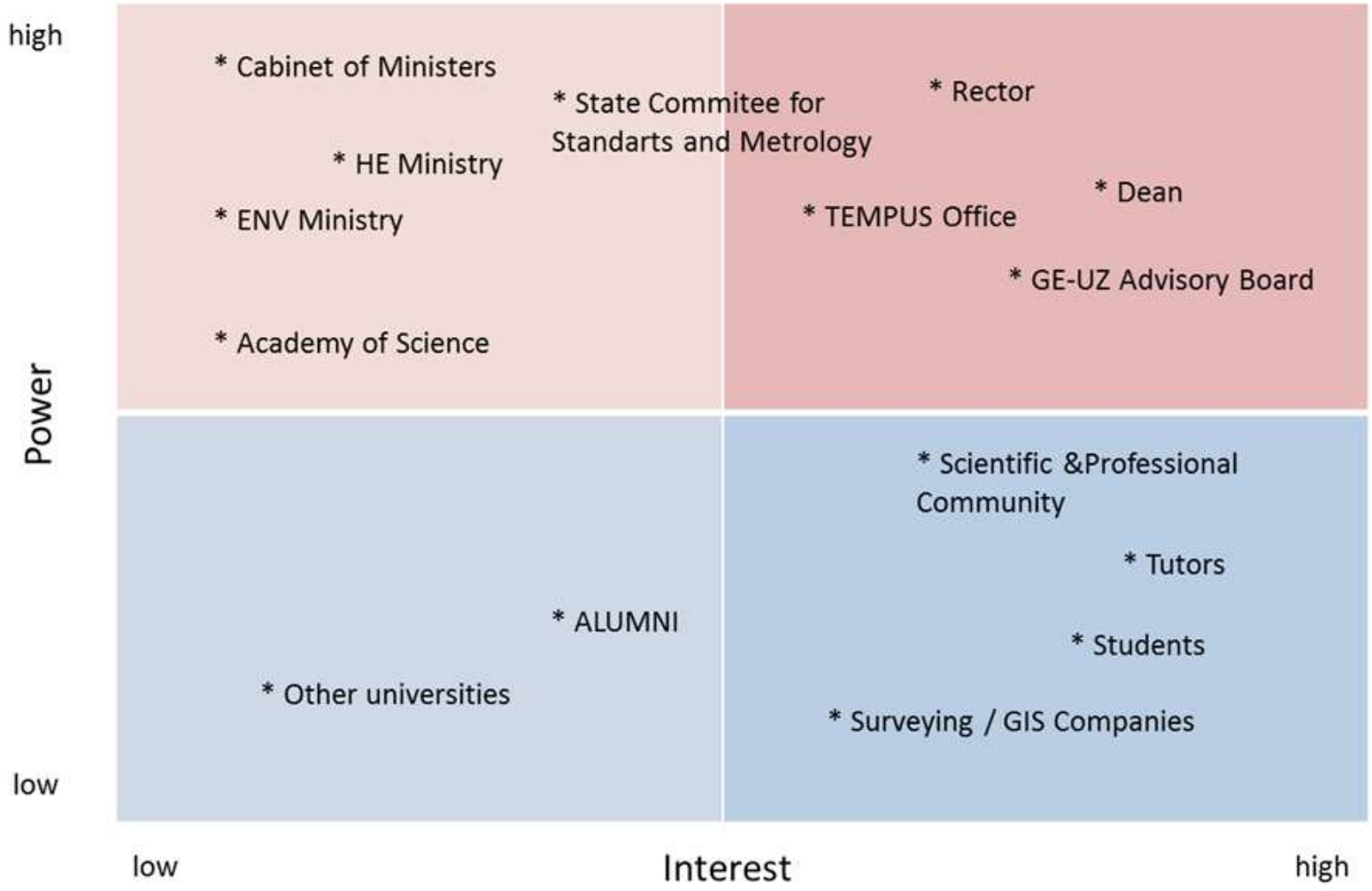
The needs analysis should

- describe the problems, what gaps exist;
- determine the needs for education or training;
  find out what are the main trends and driving forces;
- evaluate existing programmes;
- assess the potential learning possibilities;
- discover information about logistical concerns and constraints, and
- define the expected skills and competences.

Stakeholder management process



Stakeholders: power / interest



Stakeholder management plan

Students	What to do?	When to do?	How to do?	Where to do?	Whom to do?
To create a student society	To organize student unions and assign leaders	Starting from September	Organizing meetings for students to communicate with each others	National Partner universities	Coordinators and teachers
Include in research and applied activity	Include in research and applied activity	During project implementation and after	Promote international projects and international cooperation, including study abroad	In all partner universities	Partner participants, teachers and developers. EU Partners

Competency matrix

COMPETENCES / MODULES	Geoinformation Systems and Science	Remote Sensing	Data Acquisition and Data Integration	Cartography and Geovisualization	Spatial Data Models	Spatial Analysis	Geodatabases and Distributed Architectures	Project Management and Organisation
have knowledge of contemporary issues	X	X	X	X	X	X	X	X
understanding of management GIS projects								X
understanding of professional and ethical responsibility			X				X	X
originality in application of scientific knowledge	X	X		X	X	X		
apply remote sensing and photogrammetric knowledge		X	X					
apply cartographic knowledge				X		X		
apply GIS knowledge	X	X			X	X	X	
apply cadastre and land information knowledge			X					
ability to use data acquisition techniques, skills		X	X		X	X		
ability to analyze and interpret spatial data	X	X	X	X	X	X	X	
ability to integrate and manage spatial databases	X		X		X		X	
ability to design webGIS services				X			X	
ability to comprehend legal issues and standards in geographic information								
ability to solve complex spatial problems in global context	X	X		X		X		
ability to design GIS projects	X				X			X
ability to write simple computer programmes			X	X	X	X	X	
ability to work in multi-disciplinary teams	X	X	X	X		X		X
ability to communicate effectively	X	X						X
ability to engage in life-long learning	X	X	X	X	X	X	X	X
have critical awareness of current problems and/or new insights		X		X		X		X
comprehensive understanding of new techniques and technologies	X	X	X	X	X	X	X	X
ability to evaluate critically current researches	X	X		X	X	X		
ability to evaluate methods and propose new approaches	X	X	X	X	X	X	X	
ability to deal with complex issues creatively and systematically		X	X	X		X	X	
demonstrate self direction and originality in tackling and solving problems		X	X	X		X	X	
ability to act autonomously in planning and implementing tasks		X	X		X	X		X
ability to communicate to specialist and non specialist audiences					X	X		X
apply knowledge of economics								X

Competency matrix

Competency matrix is connecting modules,
like entablature in a Greek temple

Short specificaton

Module title
Introduction to Geoinformation Systems and Science
Compulsory or optional
Compulsory
Prerequisites
-
Aims and objectives
The module aims to introduce Geoinformation Science and Geographical Information Systems; to develop basic knowledge and comprehension. By completing the module, the student should:

- Be familiar with key GI concepts and terms
- Recognize spatial decision and spatial operation problems
- Discuss reasons why spatial perspective provides value added in many fields
- Identify major components of GIS as technical as well as organisational systems
- Understand aspects of integrating spatial information into general ICT

Content

- Introduction to spatial thinking; how to solve geographical problems and classical use of GIS
- GIS terminology and scope
- GI as tool; GI as infrastructure; GIS for decision support
- GIS software, categories (desktop, mobile, server) and fields of application
- Spatial reference systems: coordinate reference systems and projections
- GIS in action: where, when and how GIS solution are being used (case studies)
- Current trends

Bibliography
K. T. Chang (2010): Introduction to Geographic Information Systems, Mc Graw-Hill International Edition
Selection of articles from magazines
Teaching and learning methods
Lectures, computer exercises, self-learning on articles in magazines
Required infrastructure
Class room with computer projector, computer laboratory with GIS software
Assessment
To pass this module, the students are required to complete all the exercises; and pass the written exam
Credit allocation
6 ECTS (2 ECTS for lectures, 2 ECTS for labs, 2 ECTS for self-study)

Chapter level description

2. EARLIER REGISTERS OF LAND AND PROPERTY (L/P)

CONTENTS

OBJECTIVES

In the historic review of Chapter 2, the registration types kept earlier in Hungary, as cadastre of land property tax, the public land property register, the land register and the reasons of calling into being the L/P registration are discussed. The main characteristics of the L/P registration systems are also presented.

WHAT STUDENT WILL LEARN

- the cadastre of property tax in Hungary,
- the public land-register,
- the cadastral register,
- the reasons of creating the land and property register,
- the L/P registration systems of Europe.

LEARNING OUTCOMES

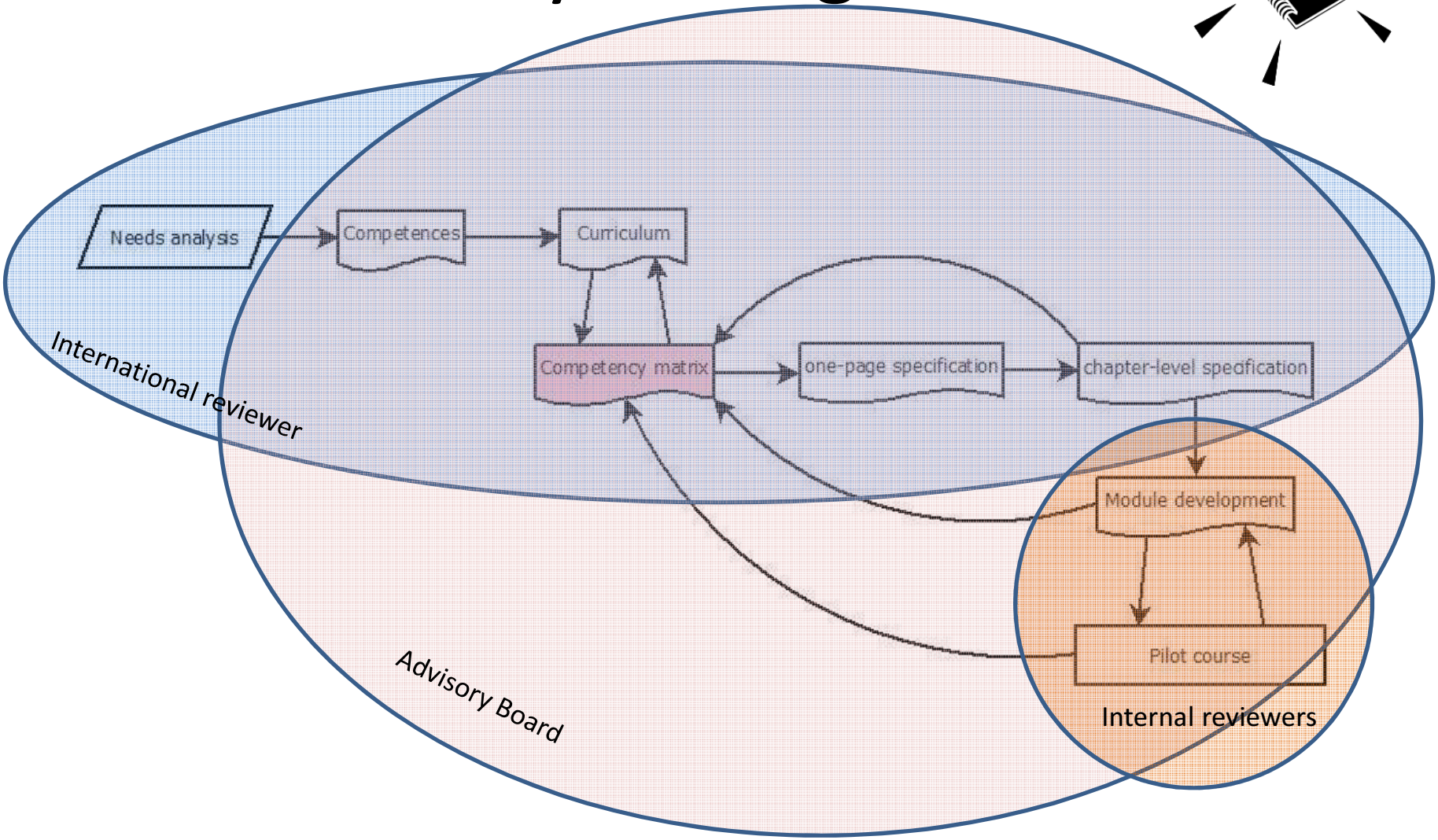
By the end of this chapter, students should be able to

- define the essence of the registration systems kept in Hungary earlier and the reasons of their calling into being.
- understand the differences between the different registers,
- justify the necessity of setting up the present Hungarian land and property registration,
- distinguish the foreign land and property registration systems.

REVIEW QUESTIONS

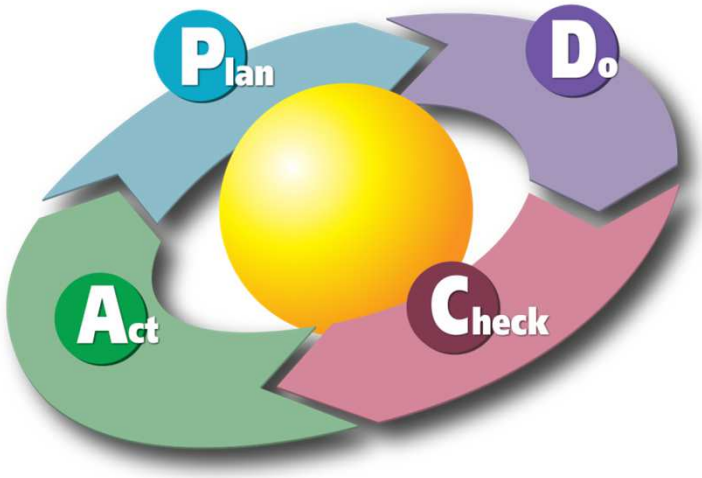
1. What was the essence of the land tax system planned by the Emperor Joseph the Second?
2. What is the land tax cadastre?
3. What is the aim of the land register ?
4. What was the justification for the establishment of the land and property registration?

Quality management



Quality enhancement

1. Quality policy, strategy and quality procedures
2. Course initiation, regular monitoring, internal evaluation
3. Marking
4. The teaching conditions: staff and infrastructure
5. Student support and services
6. Internal information system
7. Publicity



ENQA: European Association for Quality Assurance in Higher Education Standards and Guidelines for Quality Assurance in the European Higher Education Area (http://www.enqa.eu/)

Conclusions

- When we plan any educational development, we should look carefully both the current needs of the society, and look into the future.
- The curriculum must be based on the needs of stakeholders, founded on clearly defined skills and competences.
- In the design of detailed content the competency matrix can help to harmonize the work of the development team.
- Quality is omnipresent– like the ubiquitous cloud of computers. Quality enhancement should be part of our everyday life.
- There is a strong demand for international cooperation in educational developments.