



Politechnika Wroclawska

A new quality of higher education institution

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What factors have an influence on new quality of studies at higher education institution ?

- demographic changes;
- globalization of education services;
- growth in importance of the interdisciplinary research;
- rise in crucial costs of studies;
- the formation of specialistic centers research;
- the academic entrepreneurship and the so-called scientific business;
- collaboration with industry and with economy in the regional and global scale.



How it is possible to understand new quality?

- ***„Quality - the concept of thinking, which causes, that is applied and without a break looks for best solutions”***
- **„ Качество это способ мышления, который вызывает применяется и постоянно ищет лучшие решения”**

(Edward Deming)



On so understood the notion of qualities they consist of following solutions:

- the attractive mission and the vision and the development strategy;
- flexible and less hierarchical structure;
- good and efficient internal communication;
- organizational culture focused on experimentation;
- network structure of science and research;



On so understood the notion of qualities they consist following solutions:

- open to new ideas and valuable academic community;
- financial infrastructure focused on individual development of academic staff and students;
- co-operation with industry and region;
- development of scientific research and its transfer to the economy.



The higher education institution

Higher education institutions are institutions firmly rooted in European tradition, history and culture.

Currently they are quite a diverse group - there are many models of higher education institution functioning and operations.

However, a common problem is the quality of education and research and the management of these organizations.



Surrounding the modern higher education institution

Higher education institutions are complex organizations that fulfil different functions and affect a number of aspects of social and economic life. They always operate in a specific context that affects their operation. Basically, it is difficult to examine the models of national higher education or the ways of action of individual institutions without a broader international, national or even local context.



The new role of higher education institution

- global change and transformation;
- the development of knowledge-based economy

this determinants define a new role of higher education institution as an organization initiating the transfer technology industry and the economy.



The new role and strategy of higher education institution

The technology transfer from the university for the industry is important strategically for many reasons, among others because he is a source of finance of researches, as well as sources of innovations for companies.

This transfer is also an important component of the economic development of the state.

This is instruments of development of the economy based on knowledge and increased competitiveness.



The new role and strategy of higher education institution

The new role requires, in addition to the traditional functions: education and research, including:

- create a flexible framework of the institution;
- dissemination of strategic management;
- introduction of modern methods of research and education;
- development of mechanisms to ensure quality control of education;
- orientating the broad innovation.

The new role of higher education - new concepts, strategies and models are aimed at the development of innovation and effective marketing.



Contemporary concepts of management higher education institution

Currently, the role of the university is examined most often on four planes:

- the university as an economic unit;
- the university as a knowledge producer;
- the university as an institution shaping human capital;
- the university as a regional actor.

G. Boucher, C. Conway, E.V.D. (2003). *Tiers of Engagement by Universities in their Region's Development*. *Regional Studies*. 37(9).



Modern conceptions of management by higher education institution

J. Drucker and H. The Goldstein identify eight functions of a modern higher education institution, which can potentially influence the economic development of spatial systems where they operate. These are::

- creating knowledge;
- creating human capital;
- transferring existing knowledge;



Modern conceptions of management by higher education institution

- technological innovations;
- capital investments;
- regional leadership;
- creating knowledge infrastructure;
- affecting regional environment.

H. Goldstein, C. Renault (2004). *Contributions of universities to regional economic development: a quasi-experimental approach*. *Regional Studies*. 38.



Modern conceptions of management by higher education institution

An interesting analysis of changes in European higher education is presented by J.K. Thieme presents closer three models of education:

- ❑ with the predominance of state authority over higher education institutions (French, Soviet),
- ❑ market model (Anglo-American or, more generally, Anglo-Saxon) as well as
- ❑ a model with a large role of academic oligarchy (Humboldtian or Germanic).



Modern conceptions of management by higher education institution

The basis for this model are three components, i.e.:

- state (large - small),
- scope of legal regulations (loose - strict),
- value system (culture- or service-based).



Models of the higher education institution

(Dereń, Skonieczny)

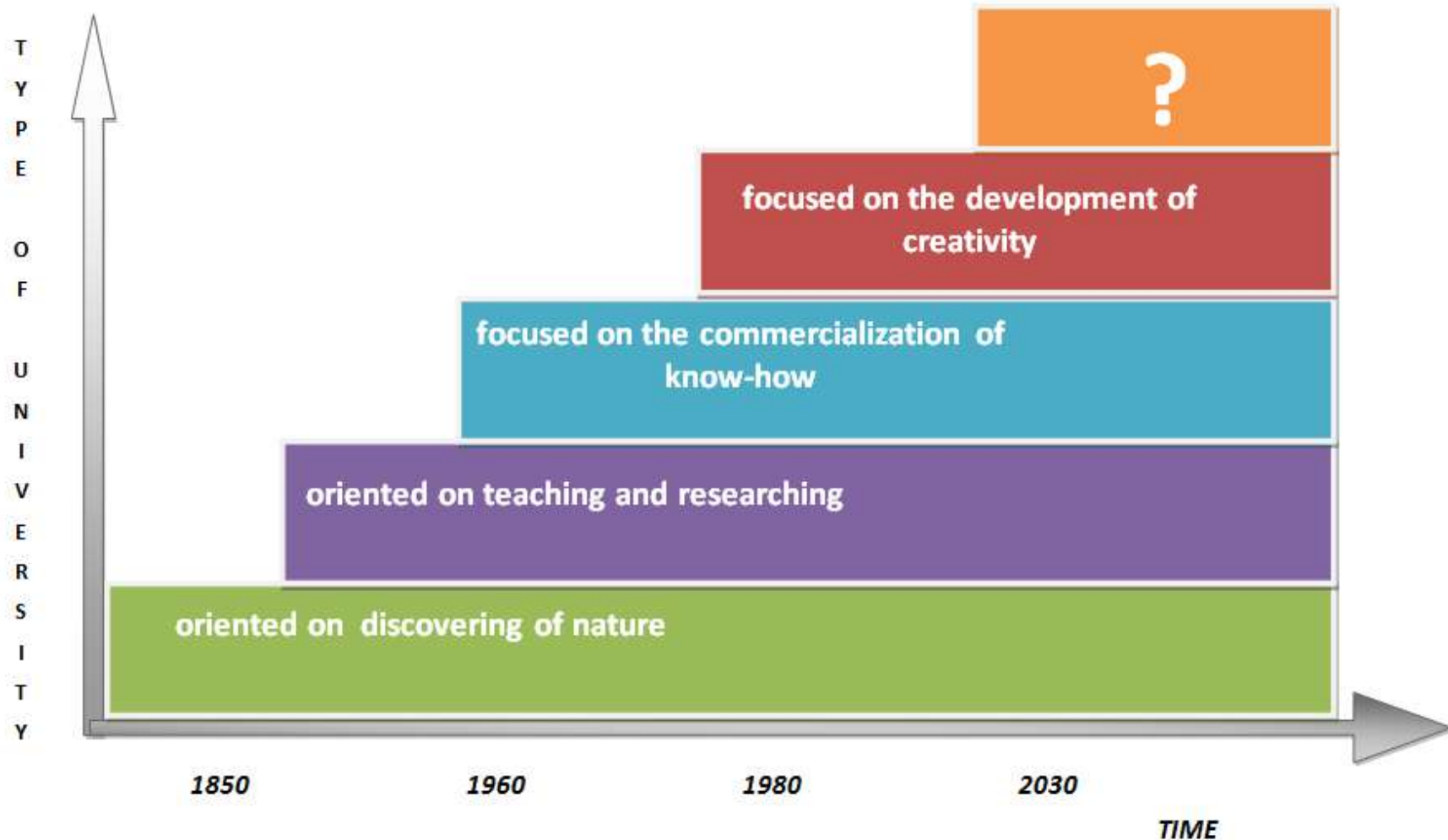
Type of economy	Factors-driven economy	Efficiency-driven economy	Innovation-driven economy
Description of economy	Development of agriculture mining raw materials, creating the grounds for large-scale production	Industrialization, domination of large companies cooperating with small and medium companies	Research and development, knowledge, development of the services sector, increasing innovative potential of companies
Basic requirements	Production	Efficiency	Knowledge, entrepreneurship, innovations, creativity
Type of university	First generation university	Second generation university	Third generation university
Objective	Education	Education and research	Education, research and use of know-how
Task	Defence of the truth	Discovering nature	Generating values
Method	Scholasticism	Modern mono-disciplinary science	Modern interdisciplinary science
Education	Specialists	Specialists and scientists	Specialists, scientists and entrepreneurs



Range of operation	Universal	National	Global
Language	Latin	National languages	English
Organizational structure	National guilds, faculties, colleges	Faculties	Academic sections (departments)
Management	Chancellor	Scientists and administrative employees	Specialized managing personnel



Types of university





University oriented on discovering of nature

Range of activities:

Discovering nature

Expansion

The main role of the scientist:

Explorer, voyager, discoverer

The main instruments of operations :

Geographical and natural discoveries,

Voyager expeditions



University oriented on teaching and research

Range of activities:

teaching

research

The main role of the scientist:

teacher, researcher

The main instruments of operations :

observations

experiments

grants



University focused on the commercialization of knowledge and technology

Range of activities

innovativeness,
entrepreneurship

The main role of the scientist:

entrepreneur, inventor, innovator, creator,

The main instruments of operations

centers of excellence

academic entrepreneurship incubators

technology transfer centers



University focused on the development of creativity

Range of activities

Creativeness, new technologies, talent and open people,
tolerance

The main role of the scientist:

designer, visionary, creator, artist

The main instruments of operations

world class labs

science and technology parks

global network of technology

knowledge integration communities (KIC)



New quality of Wroclaw University of Technology

1. Where we are now

- Position of Polish universities in the world;
- Position of WrUT in Poland;
- University in XXI century;

2. What we did

- changes in teaching programmes;
- changes at WrUT, new structure and new business entities;

3. What are barriers for cooperation between university and regional business.



Where we are

❑ Shanghai list universities 2016 - (Top 500)

<http://www.shanghairanking.com/ARWU2015.html>

1. University of Warsaw - 301-400st place;
2. Jagiellonian University - 301-400st palce;

❑ Webometrics Ranking of universities in Europe (and World) 2016

http://www.webometrics.info/en/Ranking_Europe?page=1

121.(287.) Jagiellonian University, 122.(288.) University of Warsaw, ... 173.(390.) AGH University of Science and Technology in Kraków, ... 190. (430.) Warsaw University of Technology, ... 215.(493.) Adam Mickiewicz University of Poznań, ... 254. (577.) **Wrocław University of Technology**, ... 258.(585.) Nicolaus Copernicus University, ... 265. (594.) Wrocław University;

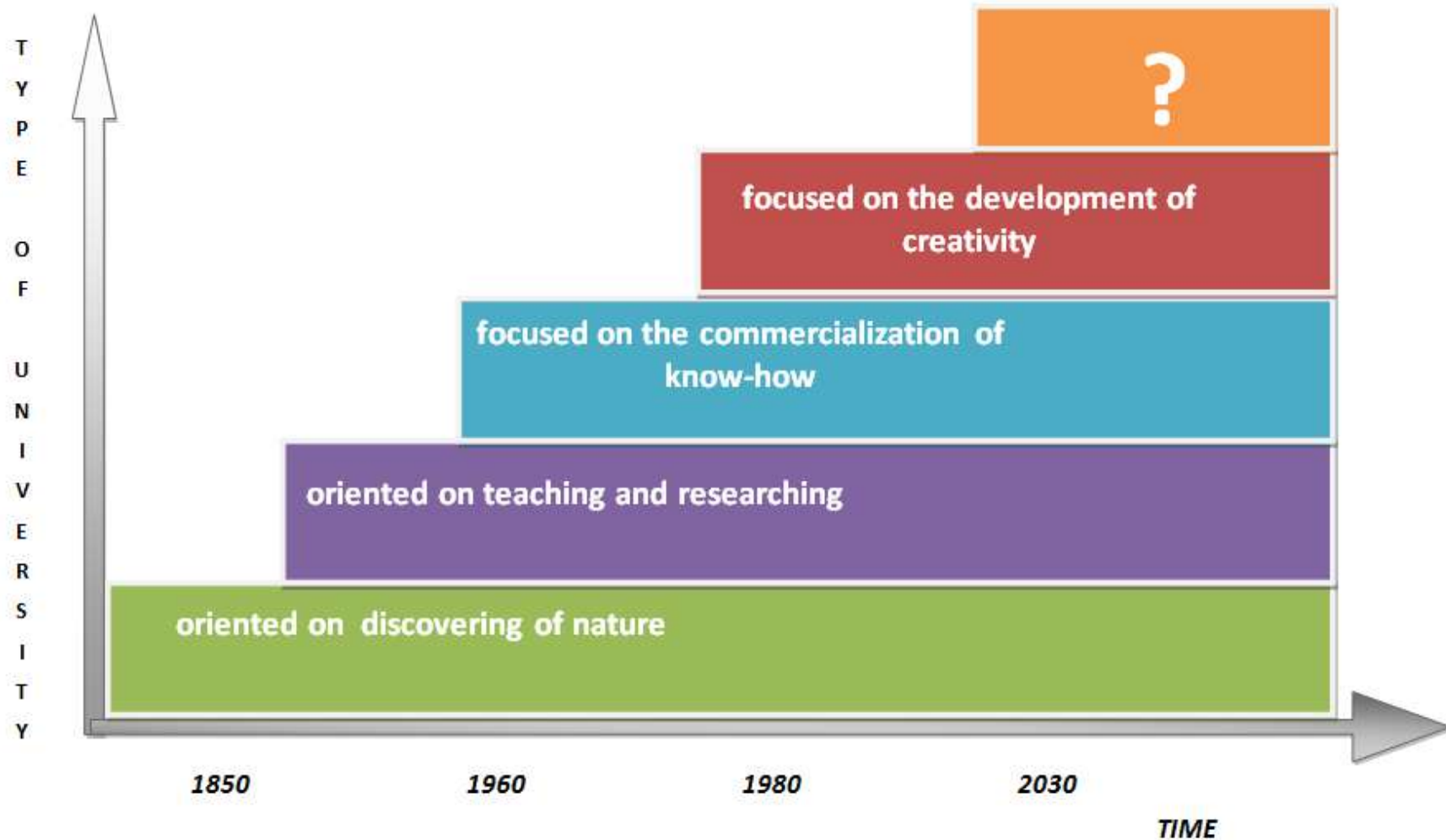
❑ Heiher Education Ranking in Poland (2016)

<http://www.perspektywy.pl/RSW2016/ranking-uczelni-akademickich>

1. University of Warsaw, 2. Jagiellonian University, 3. Adam Mickiewicz University of Poznań, 4. Warsaw University of Technology, 5. **Wrocław University of Technology**;



4 generations of university





What we are doing

New profile of study:

- ❑ Faculty: Computer Science & Management
- ❑ The field of the study: Management
- ❑ Master study -2 years (4 semesters)
- ❑ Spezialization "Entrepreneurship, Innovations and Projects"



What we did

New specialisation: „Entrepreneurship, Innovations and Projects”

New courses:

- Strategic entrepreneurship
- Innovation
- Business incubators and regional supporting institutions
- Intellectual Property Policy
- Product design
- Marketing of innovation
- Measuring of entrepreneurship & innovation (scoreboards)
- Business based on Knowledge (BbK)
- Project Management



New business entities





Barriers of co-operation between university and industry





PROJECT: „creative engineer” Humbolt University in Berlin

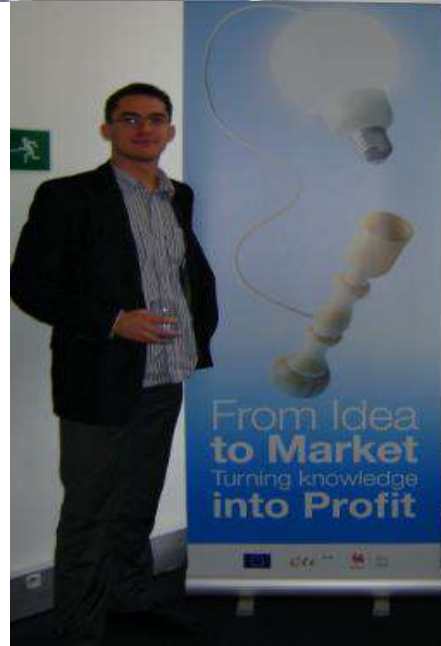




European Commission Brussels Technische Universität Dresden



Europese Commissie
Commission européenne





European Parliament Strasburg





Meeting with members of European Parliament, Strasburg





Thank you for your attention!