

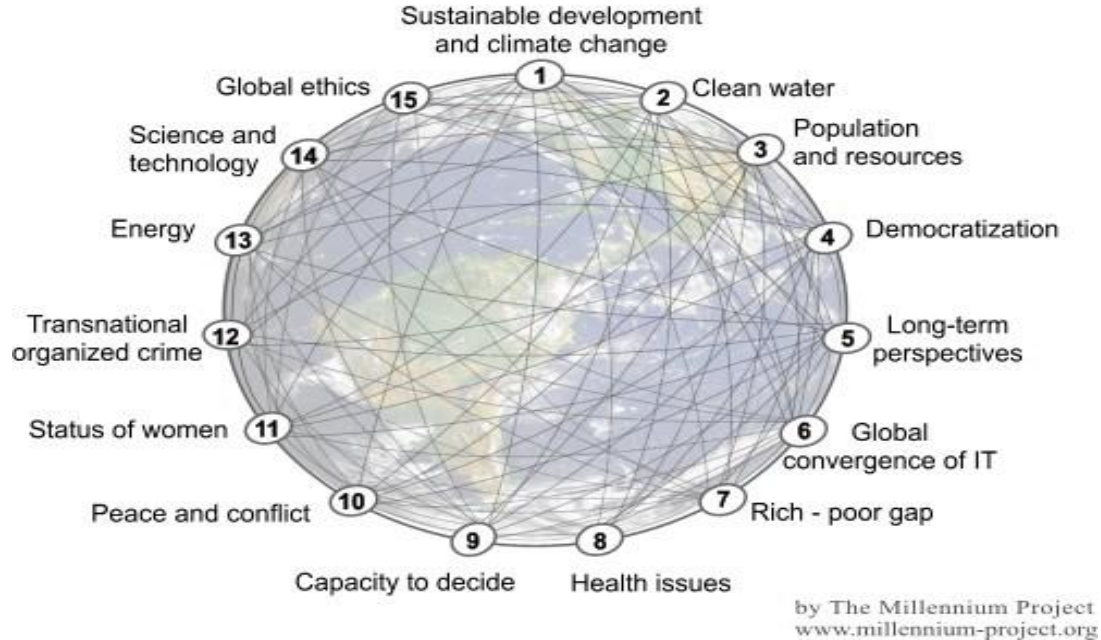


ACADEMIC FACULTY

CHALLENGES FACING EUROPEAN UNIVERSITIES



15 GRAND GLOBAL CHALLENGES



POPULATION EXCEEDING 7 BILLION

Today, society at large face major challenges

- Imbalances in global population
- Health, demographic change and wellbeing
- Food security, sustainable agriculture and the bio economy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate change, resource efficiency and raw materials
- Inclusive, innovative and open societies
- Macroeconomic dependencies

AN EMERGING NEW MINDSET

Universities are key in national innovation systems and fundamental research must to a greater extent be defined in a global social context:

- Educate advanced human capital
- Develop solutions to meet the grand challenges
- Contribute to innovation, competitiveness and economic growth
- Graduates must to a greater extent be trained to work across disciplines so they can solve complex tasks

Universities will increasingly engage in Academic Social Responsibility (ASR)

GLOBAL POOL OF TRAINED BRAINS

'ADVANCED HUMAN CAPITAL' IN DEMAND

Innovation Union 2020 predicts 1 million new research jobs while the European Research Area Board (ERIAB) recommends the following milestones for 2030:

- 50% of the EU's research funds should be allocated to ground-breaking basic research
- 20% of EU doctoral candidates should work outside their home country, and researchers should generally be more internationally mobile
- 5% of GDP should be spent on research. Two-thirds of this spending should come from the private sector.
- The EU and its member states should triple investment in higher education programs to 3.3 % of GNP
- EU investments, 50% increase in budgets to research, innovation and mobility – Horizon 2020, Marie Curie, Erasmus for all etc.

COMPETITION FOR TALENT

Universities move from local recruitment of students to increasingly global recruitment.
Attracting the best talent is a challenge

- Students will be looking for an international element in their education, be it a summer school, a semester or a full degree at an institution abroad
- International students will play an increasingly important addition to the student body at any given university
- In Europe, Erasmus and national programs are active and more and more students realize the opportunity to study in another country of the continent
- Global student mobility

DIVERSIFICATION OF STUDENT POPULATION

Will universities respond to new educational demands

- Traditional (young) national students will still be an important group
- International mobility students will increase in numbers
- International full degree students will increase in numbers
- Virtual students will out number on campus students
- On-the-job students will increase in importance because of changing labor demands
- Life-long-learners, including 3rd and 4th age students, are seeking further education

INTERDISCIPLINARITY

Societal demands are increasingly complex, and traditional curricula and academic organization are under stress. Because of employability of graduates change rapidly, graduates must be capable to adapt. Likewise research activities must, while maintaining the long sight into the unknown also become daring and responsive to the need for new insight and know how. Universities will develop:

- Interdisciplinary curricula that encourage students to explore other worlds
- Flexible intra institutional structures that allow researchers to collaborate across disciplines
- Rewards systems so researchers are not hampered by doing interdisciplinary research

AN OPEN EUROPEAN MARKET FOR ADVANCED HUMAN CAPITAL

The Bologna process has been a great success. It has played a great role in the increased mobility of students in the EU (also facilitated by the Erasmus Programmes). But Europe has very uneven career systems and academic traditions for researchers and scientists.

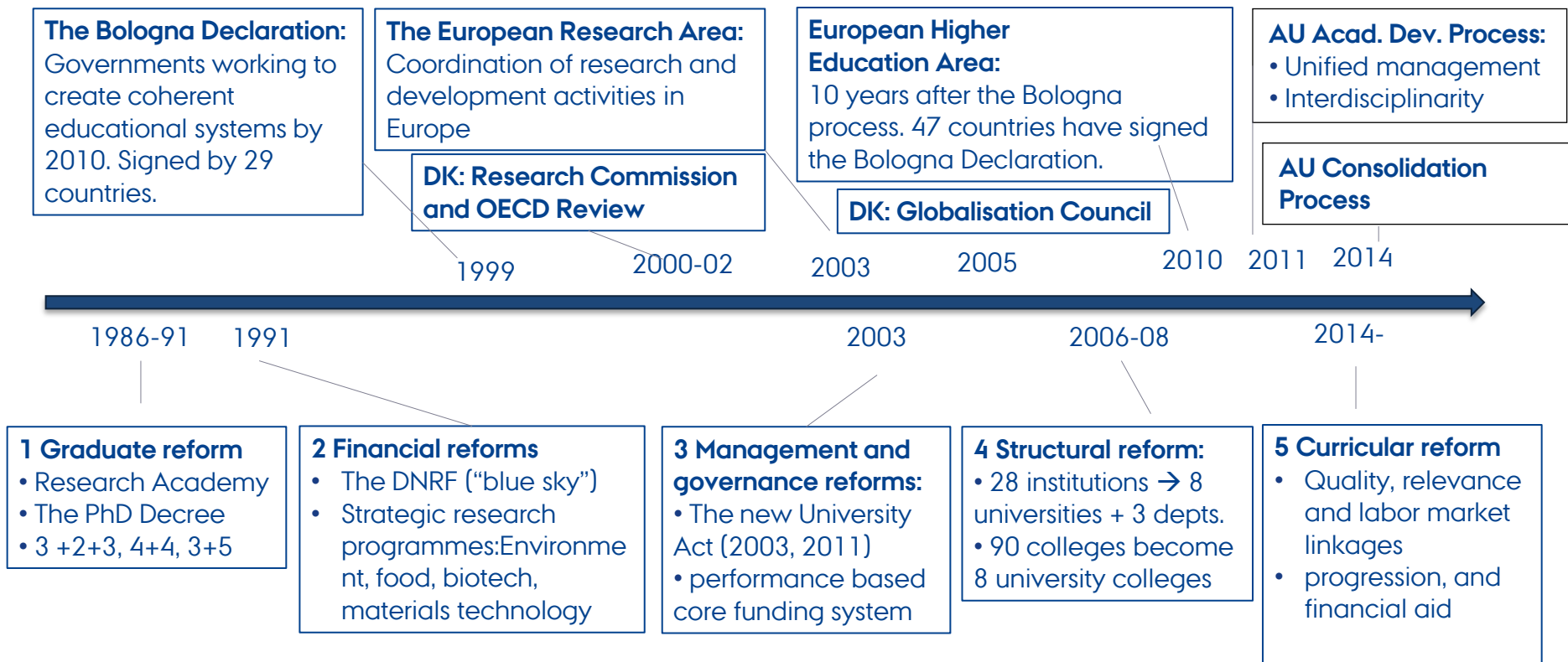
- There is a need for a unified open market for ‘advanced human capital’, an effective ERA
- In such a market, well trained people will behave like other types of capital
- Human capital, investment capital and risk capital concentrates in innovative regions

CHALLENGES FOR MOBILITY

- ▶ While there is evidence that reasonable job security and salary levels are important, other factors such as the quality (and international outlook), professional reward structures and access to state-of-the-art equipment and excellent students play a major role in academics career decision. A healthy system for brain circulation benefits all, and artificial barriers must such as lack of transferability of pension rights, social benefits, medical insurances, and so on
 - Structures prevent the flow of talented researchers, no matter the age
 - Many chose a career in the private or public sector out side of academia
 - For academic faculty there may be lack of support structures, and a poor work/life balance
 - Pension options. EU's pilot scheme RESAVER may lead to a solution

ATTRACTING TALENT EXAMPLES FROM DENMARK

DK'S REFORMS IN EUROPEAN CONTEXT



AIAS - AARHUS INSTITUTE OF ADVANCED STUDIES

Aarhus University decided to proactively participate in the development of advanced global talent, and established AIAS in 2013. AIAS is an open, interdisciplinary institute for advanced study. *aias.au.dk*

- Advancing highest quality research at Aarhus University (AU) by recruiting talented, highly qualified fellows worldwide and within all disciplines
- Fellows (35) are free to develop their research in periods of 6 month to three years
- Fellows are invited to participate in various kinds of collaboration with researchers, research teams and advanced students at AU and abroad
- Budget: EU co-fund – 7 M Euro and Aarhus University Research Foundation - 16 M Euro

ARCTIC RESEARCH CENTRE

Aarhus University decided to take responsibility for advanced and unique research infrastructure for the benefit of the international research community. One of these is organized by the Arctic Research Centre, which in few years has developed a comprehensive set of facilities that are open for international research cooperation

- Canadian-Greenlandic-Danish leadership
- Aims to answer critical questions related to climate change and Arctic populations The partnership shares laboratories, research infrastructure, field stations, vessels and equipment enabling scientists to study the arctic under all conditions
- Mutually planned educational programs facilitates student exchange
- Research stations in Canada and Greenland (Daneborg, Zackenberg, Station North and Nuuk)

SINO-DANISH CENTER (SDC)

SDC in Beijing is a joint college for education and research established in 2011

- Aims to promote and strengthen collaboration between Danish and Chinese research and learning environments for the benefit of both countries
- Offers opportunities within education and research through joint education (joint degrees) and research activities (Ph.D. programs)
- Eight Danish universities, the Danish Ministry of Science, Innovation and Higher Education, the University of the Chinese Academy of Sciences (UCAS) and the Chinese Academy of Sciences (CAS) contributes
- 350 master students, 100 Ph.D. students, 250/yr exchanged professorial staff
- 12.000 m2 new building and annual budget of 15 million Euro
- First graduates 95 (2014)

THE ACADEMIC PROFESSION

CHALLENGES FACING EUROPEAN UNIVERSITIES

The role of universities, is changing rapidly as the demands on the European higher education sector becomes increasingly complex and challenging

- Europe's main resource is its human and cultural capital
- The European universities play a central role in maintaining and building this resource
- Trends towards consolidation of Europe's research activities and infrastructure
- Are European universities ready for diversified and competitive funding systems?
- Are Europe ready to employ it's advanced human capital and for evidence based policies?

LOST IN TRANSITION?

How to meet the challenges of interdisciplinary research, evidence based policy advice and social knowledge exchange?

- Change university curricula towards interdisciplinarity
- Create flexible institutional structures
- Rethink awards systems
- Engage policy makers
- Retain research integrity
- Disseminate scientific evidence to the public

ADAPTING TO A NEW REALITY

The answer to solving the challenges and thus adapting to a new reality does not lie in the classical (Humboldtian) research university model

- Comprehensive universities needs to accommodate a changing and diverse student population
- New ways of tackling the demands will be developed and the nations that manage these changes the best way will be more attractive for talent and research opportunities

CAREER PATHWAYS

The higher education sector and universities in Europe must engage in developing transparent and open career pathways for Europe's talent

- Attracting advanced student
- Focus on the following interfaces: from doctoral candidate or student researcher to post doc or research assistant, and on to assistant professor or researcher, towards final career positions as tenured faculty, senior researcher, associate or full professor
- Develop a new logic. Universities have moved from a tradition of one professor in each subject to several. Research is increasingly funded as large multi year team grants, the team being lead by a principal investigator. What will the emerging role of professors become? Who should have tenure the individual professor? or the team?



CONCLUSION



SHAPING THE FUTURE

Supporting the next generation of researchers

- Cultivating talent at all levels of career development
- Attracting and retaining the best talents in all their diversity
- Harnessing the educational potential of research
- Developing interdisciplinary research
- Encouraging the acquisition of diverse skills sets and outreach activities
- Promoting high-quality professional environment
- Facilitating mobility
- Sharing of good practice





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