

UNIVERSITÉ
— PARIS-EST



Positioning university-industry relations in Higher Education evolving environment

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- 1- Overall environment
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3 lasting factors of change & their consequences



- A lasting (budgetary) crisis, with stronger effects in countries where fees are marginal
- A stabilised population of students driving to growing competition between higher education institutions
- The central role of undergraduate students (70%+ stop at the bachelor level)

Some 'safe' anticipations

- a shifting balance between research excellence and teaching relevance
- professionalisation will become central both at bachelor and master levels.



Repositioning University missions

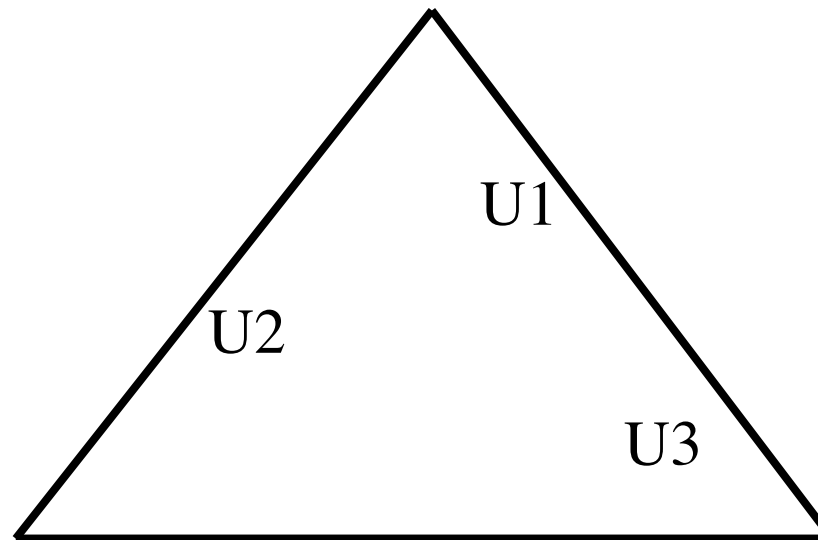
- The central role of universities in society: educated people!
- Rankings* as revealers of a paradigm shift in continental Europe
 - The university is no longer an undifferentiated operator (training is not the same wherever you are)
 - The quality of training depends upon the university: relevance of curricula, performance in delivering knowledge, quality and involvement of staff
- Revisiting “multi-activity”
 - Other missions are associated to training: research (Humboldt model) and ‘direct relations with actors in the external world’ (so-called third mission)
 - Multi-activity does not come from the 3 missions but from the ways in which the 2 latter are entangled with ‘training’

*of course not only Shanghai ranking who is only one among thousands!



From 3 'missions' to 3 'activities'

Mass tertiary education, professional Bachelor
& public proximity service



Professional
specialised
graduate
education

Academic
training
& research
in world
competition



Part 2 - University 3 activities

- characteristics of each activity
- positioning industry-university relations
- discussing tensions

Mass Tertiary Education



- Central diploma: professional bachelor
- Mostly linked to proximity (recruitment & employment)
- Main changes
 - Professionalisation: co-design of curricula with ‘industries’ / involvement of industry actors in teaching / internships/ ‘alternate education’ (the German way)
 - Performance associated with jobs obtained and ‘throughput’ (tension between productivity increases & handling growing diversity in knowledge bases of students / mentoring)
- University tensions:
 - HR- Reshaping careers to reward teaching involvement
 - Innovations in curricula & teaching central to performance
 - Organisational- classical faculties/departments vs ‘collegialisation’
 - Profile- ‘opt out’ (only a few general bachelor degrees for longer-term studies) vs ‘regional adaptiveness’

Specialised Graduate Education



- Central diploma: professional masters
- Characteristics:
 - focus on the profession or the industry,
 - recruiting and placement areas are at least national,
 - increasing role of European accreditations (e.g. management)
 - identity building: tension between differentiation and critical mass
- Relations with industry: a rich mix of forms. internships, continuing & executive education, consultancy, contract research, professional doctorates (or joint ones e.g. CIFRE in France), industry-funded chairs...
- Problem solving research mostly in a project-based mode
- An emerging demand: life long learning
- Main performance criteria: jobs and salaries, professional rankings (e.g. business schools)

Academic training & research (1)



- Scientific communities are defined at world level --> recognition and influence as driving forces
- 2 key products & performance criteria: articles (citations) & PhD (where they go) + prizes / position in world communities
- ‘valorisation’ remains a secondary issue: 3 main forms (co-research with large firms, IP, spin-off firms)
- Tensions around the research production space
 - within universities, teaching vs research structures (departments vs labs)
 - growing role of ‘project-based’ networks: toward autonomous ‘research entrepreneurs’ ?

Academic training & research (2)



- Research training: toward a complete transformation
 - from individual supervision to doctoral school
 - curricula for speeding up acquisition of competences
 - new capabilities to acquire (transferable skills, research autonomy, multiple methods...)

Driving to strong critical mass issues
- Implications for universities
 - seldom in a position to develop this third activity in all areas
 - selection of areas is first an issue of research critical mass (at the group level)
 - to capture 'economies of scope' (often associated to interdisciplinary relations), there is an issue of overall critical mass (around 3000 academics, Bonaccorsi 2007)



Part 3

Typical configurations of universities

AN IMPORTANT ISSUE

Since this defines how firms can/should relate to different universities at different levels

Universities as unique ‘patchworks’



- Sources of diversity
 - variety of professions & industries (especially in services - main source of employment)
 - attractive fast growing fields in Science (not that numerous though!)
 - new societal challenges & the renewal of classical fields (e.g. REACH & Green Chemistry; global warming & new energy sources)
- Some key hints
 - services, and even more services to the person (health, tourism, leisure, culture, ...) require more and more SS&H.
 - importance of engineering and integration capabilities for problem solving research
 - many fast growing research areas are not (no longer) connected with student demand and/or diversified job markets (i.e. better fit for dedicated public research institutions)

The 'rare' situation: world leading universities (1)



- The Harvard/MIT/Caltech model
 - limited general undergraduate studies (half the size of master ones)
 - At the core, 'research enlightened' but mostly 'professionally-oriented' masters
 - Powerful field doctoral schools (e.g. 500 candidates over 5 loosely coupled specialities)
 - more and more 'societally-oriented' multi-disciplinary research centres focused on long-term breakthrough research
- In how many fields can a European comprehensive university be leading? At best, very few (most often 1)
 - strongly path dependent
 - sustainability linked to composition (the danger of 'lonesome stars', age structure,...), attractiveness (foreign PhD) & top-class facilities
 - existence of a lasting demand (students) and of a diversified 'job market' (variety of jobs for masters, & of post-docs for PhDs)
 - strongly associated with ability to distort university profile (resources, recruitments, buildings & labs)



The 'rare' situation: world leading universities (2)

- Relations with external world:
 - Public funding agencies and Not for Profit foundations (such as the Gates foundation) are central 'partners'
 - Relations with firms mostly through recruitment (quality brand)
 - University-Industry research only when long-term alignment of interests (see examples from previous session)
 - Most frequent form otherwise: direct IP based relations, indirect through buying start-up firms



A Growing sub-type: professional post-grad schools

- In a ‘knowledge-based’ economy, the need for more and more industry or profession ‘tailor-made’ training
- Two options for specialised professional training
 - research-based (but, for each industry, is there room for more than a few places in Europe?)
 - problem-solving focused (short & medium term mostly ‘incremental’ research; critical role of ‘executive’ & ‘life-long’ learning education)
- Multiple and intense industry-university relations
- But need for longer time frames: requires that industries, at the collective level (from regional to European) engage more into strategic partnerships

The regional professionalised University as a reference



- Let us simplify and assimilate
 - focus on Academic R&T = academic
 - focus on ‘specialised HE’ = professional
 - focus on ‘mass tertiary education’ = regional
- The dominant shape of European universities:
 - mostly regional with 1 or few recognised professional positions
 - performing ‘well’ in term of university-industry relations
 - complemented by fragmented research (‘lonesome’ researchers in diverse fields, coupled through projects to key external research centres)
 - difference between universities linked to their foci and the degree of articulation with local key industries: *in a knowledge-based society there should be clear alignments between industry and training specialisations at local level.*



To conclude

- Remember: capacity building is at the core of relations between universities and firms.
- Need for a multi-layered approach to industry-university relationships
- Most surveys at the local level (including large firms) show need to focus on undergrad training
- The professional master level is the core node for dealing with industry-specific knowledge bases (training & problem solving research)
- The so-called world leading universities require firm long term vision and engagement to develop productive relationships in nurturing breakthrough research