

UNIVERSITÉ  
— PARIS-EST



# Positioning university-industry relations in Higher Education evolving environment

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EIRMA Roundtable, January 28, 2011



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- 1- Overall environment
- 2- University activities: key trends
- 3- Typical university configurations

# 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

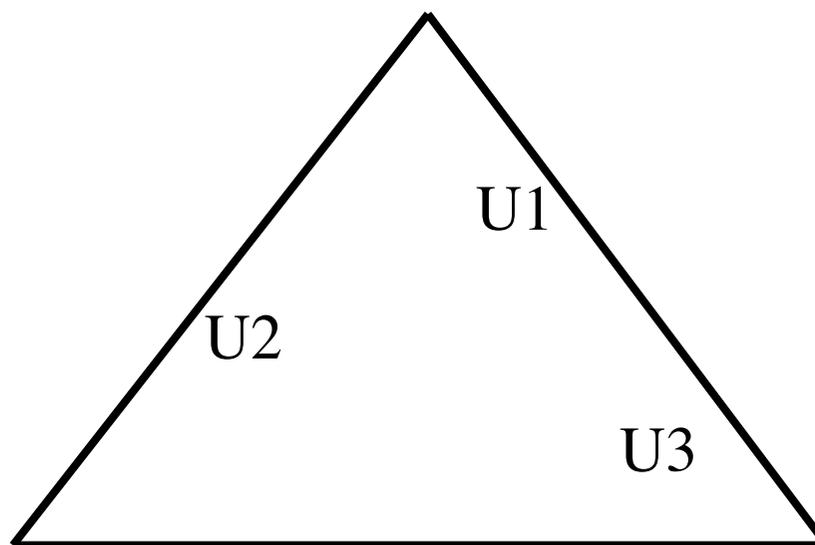
- The central role of universities in society: educated people!
- Rankings\* as revealers of a paradigm shift in continental Europe
  - The university is no longer an undifferentiated operator (training is not the same wherever you are)
  - The quality of training depends upon the university: relevance 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