



Universidad Politécnica de Madrid

Transforming European universities: the experience of the UPM

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EXPERIENCE OF THE TECHNICAL UNIVERSITY OF MADRID (UPM)

21 engineering and architecture schools

UPM was created in 1971 but many schools have more than 100 years:
strong individual culture and autonomy

37,000 undergraduate students and
6,700 postgraduate students

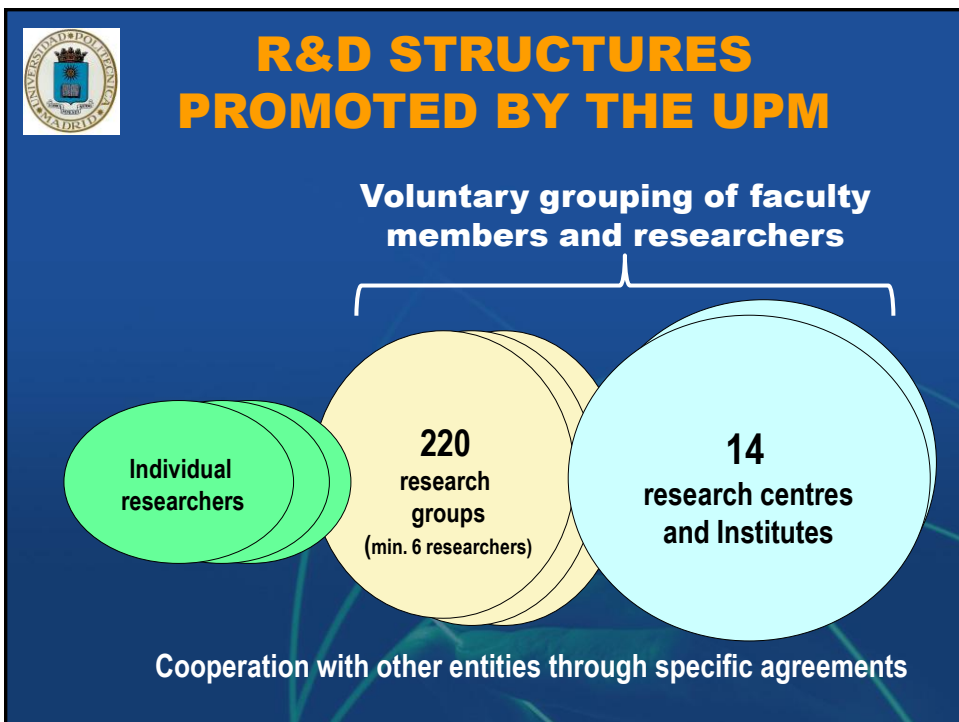
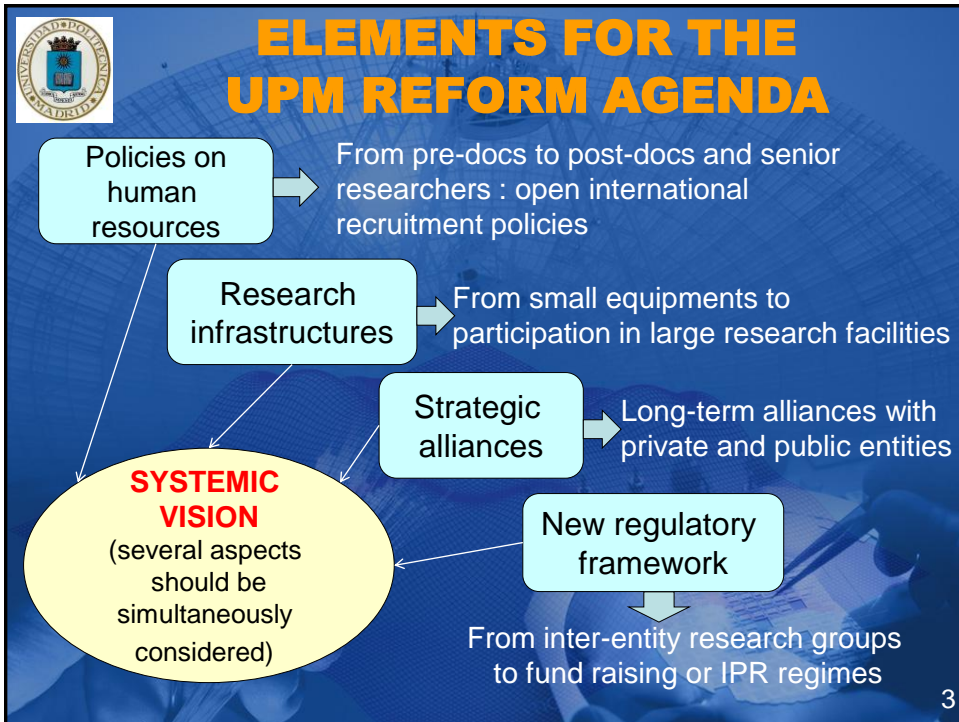
2,500 PhD students (500 with full time fellowships)

3,400 faculty members

2,500 administrative and technical personnel
500 engineers hired for R&D projects

120 M€ contracted for R&D in 2009

60% of research was financed by external private sources





LARGE INSTITUTIONAL R&D PROGRAMMES

SCIENTIFIC AND TECHNOLOGICAL INITIATIVES

Strategic long-term international positioning

BioTech (oriented towards “biomedical engineering”)

SpaceTech (oriented towards “satellite platforms”)

NanoTech (oriented towards “nanomanufacturing”)

CAMPUS OF EXCELLENCE

Official recognition by the Spanish Government

Campus Moncloa (with the Complutense University, UCM)

Campus Montegancedo

SCIENTIFIC AND TECHNOLOGICAL PARK

Moving UPM to entrepreneurship

4 sites in the region of Madrid

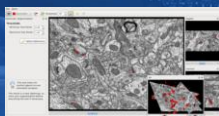
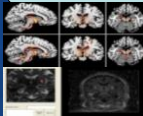


BIOTECH UPM

Multidimensional perspective

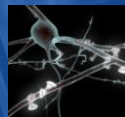
Education

(MSc and PhD on Biotechnology and bioengineering)



Internationalization

(Blue Brain, FP7 and other large international programmes)



Centres and scientific infrastructure

(CTB, MEG, microscopy)

Human resources

(positions for junior and senior researchers)



Agreements with external entities

(hospitals, universities and companies)



CAMPUS OF EXCELLENCE

Programme of excellence in universities created by two ministerial departments

Ministry of Education + Ministry of Science and Innovation



UPM has obtained a great success in 2009-2010 calls ...but funding is limited to loans



Campus of Moncloa
with the UCM
Emphasis on scientific knowledge in 5 clusters



Campus of Montegancedo
Emphasis on open innovation in ICT and biotechnology

UPM priorities are progressively related to these areas

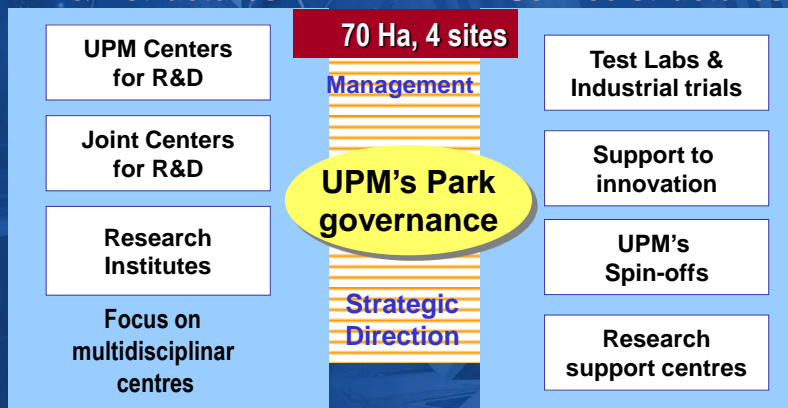


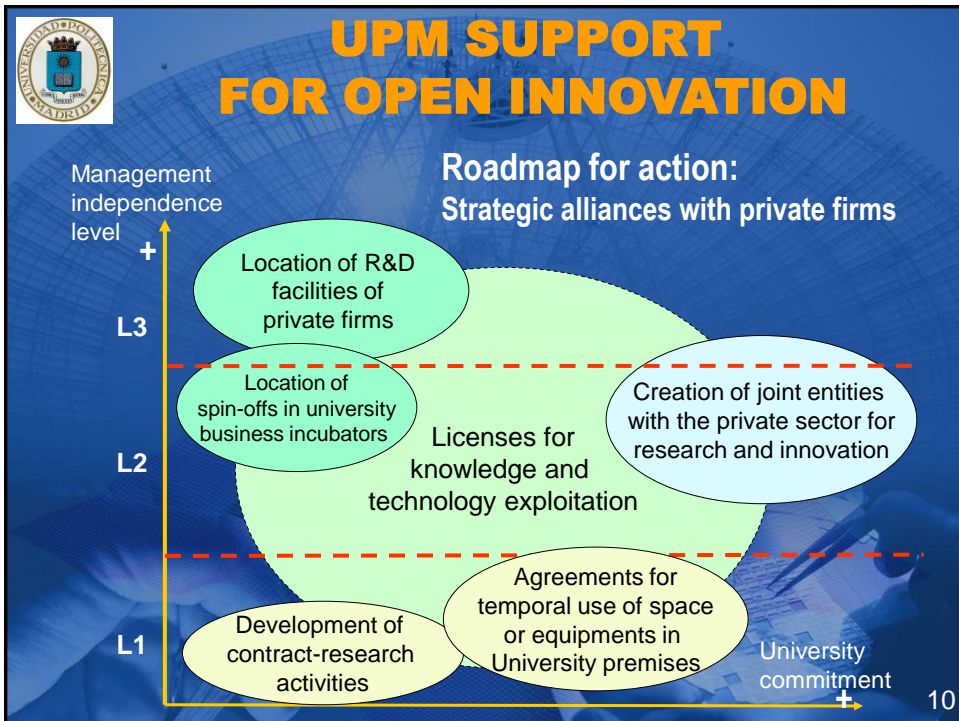
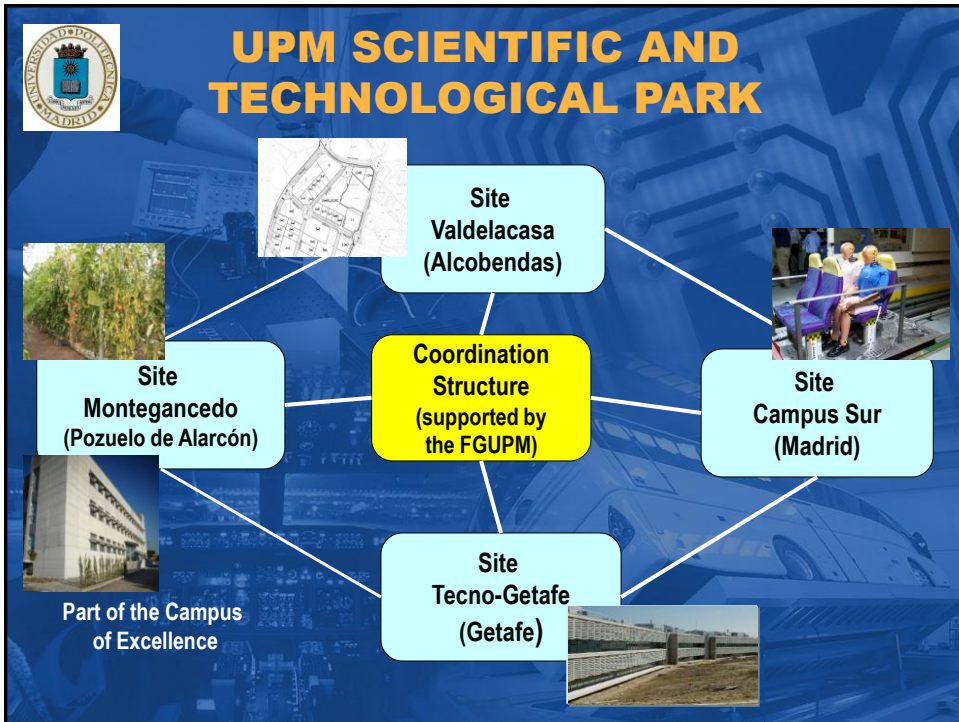
SCIENTIFIC AND TECHNOLOGICAL PARK

Mainly devoted to create new research centres and technology transfer and entrepreneurship support (based on loans from Spanish Governments)

R&D structures

Service structures







LESSONS LEARNED

Diversity of universities should be preserved

Universities should decide on their own priorities

Institutional approaches and governmental programmes should differ

UPM has defined institutional tools to address goals not covered by individual schools

based on top down priorities and focus of resources

Extensive use of Governmental programmes to improve competitiveness

too early to assess the success ... but there is a need for policy experimentation