

UPC

**La universidad generando impacto en
la sociedad a través de la innovación**



UNIVERSITAT POLITÈCNICA
DE CATALUNYA
BARCELONATECH

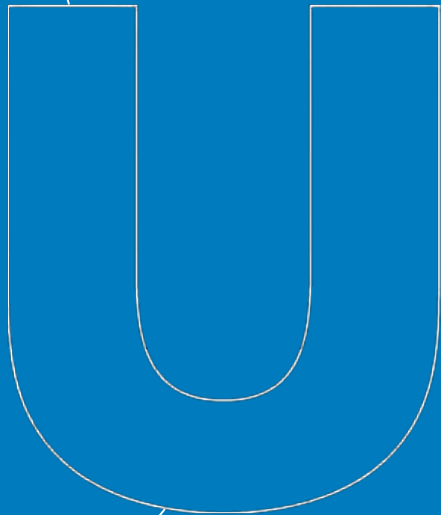
International Campus of Excellence



The **Universitat Politècnica de Catalunya – BarcelonaTech** is a public institution of **Higher Education and Research**, specialised in the areas of **Architecture, Engineering, Science and Technology.**



31,224 students



21 schools

275

3,015 teaching and research staff



63 Bachelor's degrees

2016 budget (million euros)

205 research groups



70 masters's degrees

49 doctoral programmes





Departments and Institutes

Agri-Food Engineering and Biotechnology

Architectural Design

Architectural Representation and Visual Analysis I

Architectural Representation and Visual Analysis II

Architectural Technology II

Automatic Control

Chemical Engineering

Civil and Environmental Engineering

Computer Architecture

Computer Science

Electrical Engineering

Electronic Engineering

Engineering Design

Engineering Presentation

Fluid Mechanics

Heat Engines

History and Theory of Architecture

Management

Materials Science and Metallurgy

Mathematics

Mining, Industrial and ICT Engineering

Nautical Science and Engineering

Optics and Optometry

Physics

Service and Information System Engineering

Signal Theory and Communications

Statistics and Operations Research

Structural Architecture

Telematics Engineering

Textile and Paper Engineering

Urbanism and Regional Planning



UPC Technology

A network of core research facilities that play a prominent role in innovation and development, and turn ideas into reality.





UPC Technologies



**MATERIALS
TECHNOLOGIES**



**ADVANCED
MANUFACTURING
TECHNOLOGIES**



**ENERGY AND
ENVIRONMENTAL
TECHNOLOGIES**



**URBANISM AND
SUSTAINABILITY
TECHNOLOGIES**



**INFRASTRUCTURE
TECHNOLOGIES**



**INFORMATION &
COMMUNICATION
TECHNOLOGIES**



**BIOMEDICAL
ENGINEERING
TECHNOLOGIES**



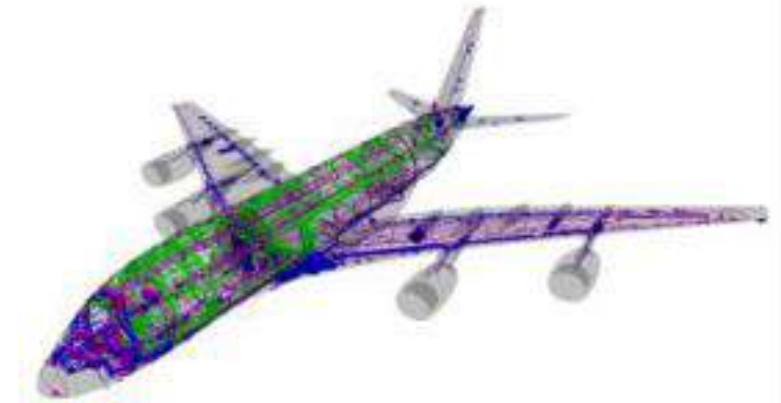
**CHEMICAL AND FOOD
INDUSTRY
TECHNOLOGIES**



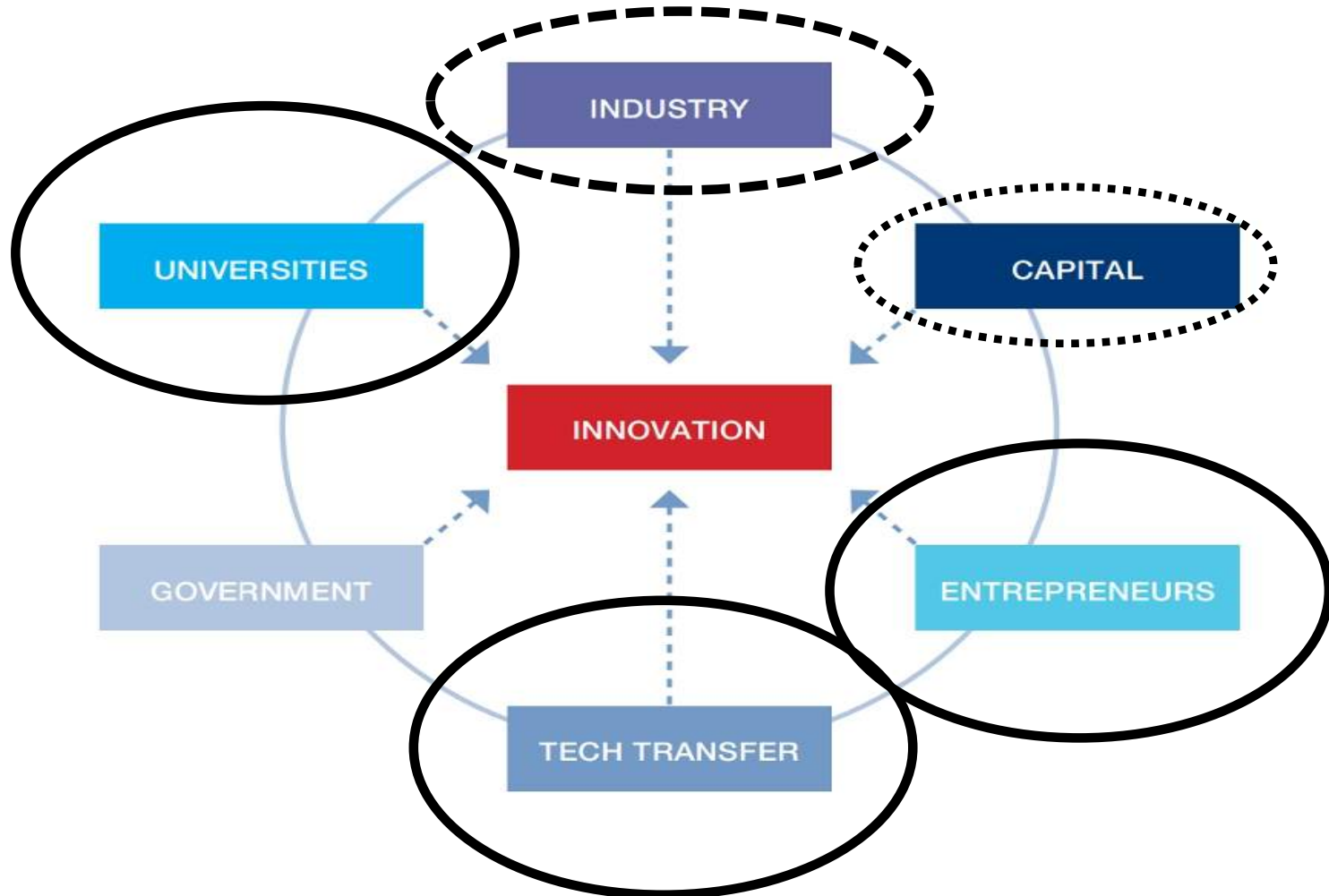
**LOGISTICS AND MOBILITY
TECHNOLOGIES**

Scopes of application

- Aeronautics
- Automotive
- Finances and Insurances
- Food
- Health
- Industrial systems and process
- Public Administrations
- Railway
- Smart cities
- Sport and Leisure
- Textile
- Tourism and Commerce
- Others...



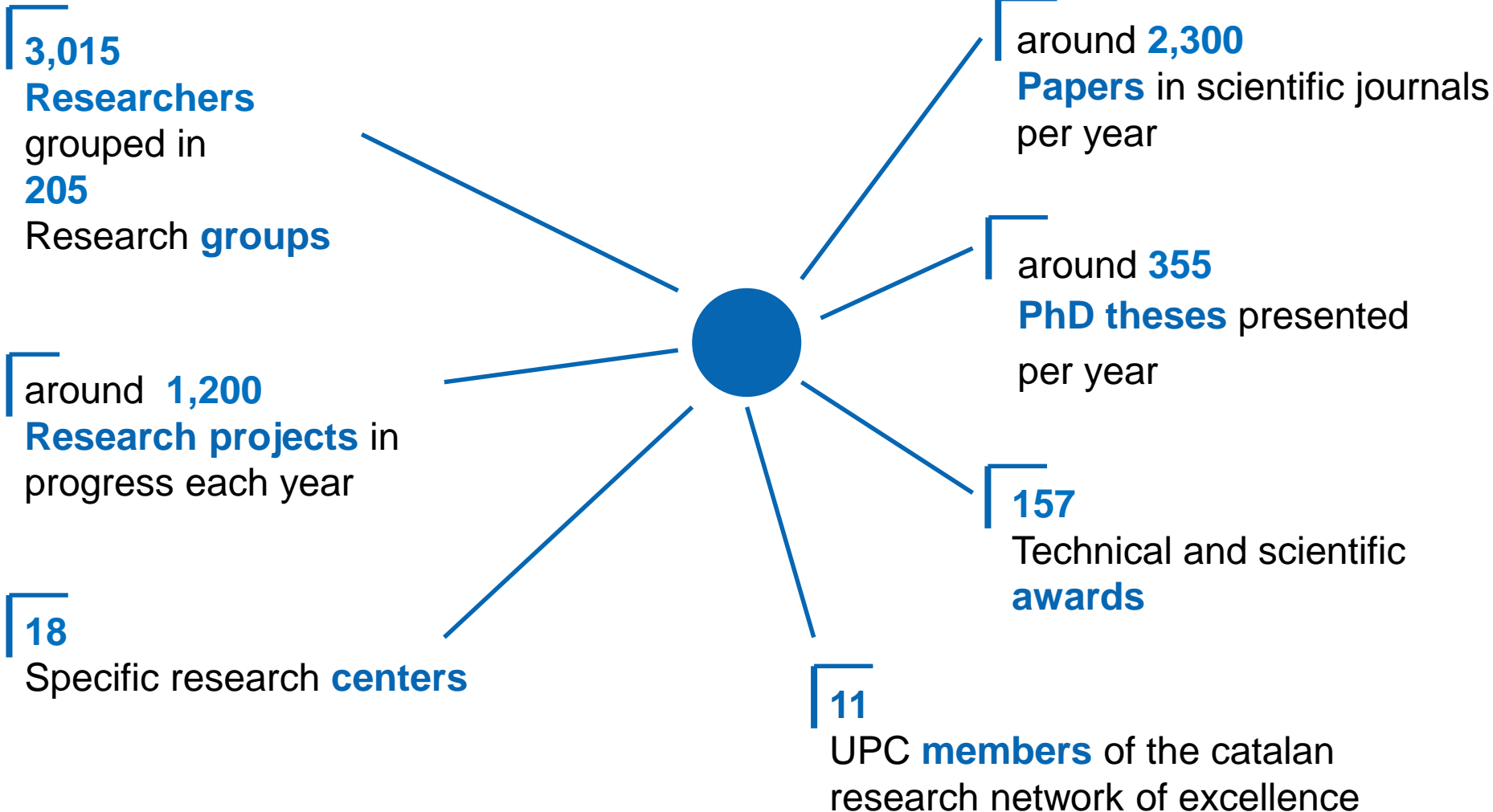
Innovation Ecosystems



Partners in the Innovation Ecosystem

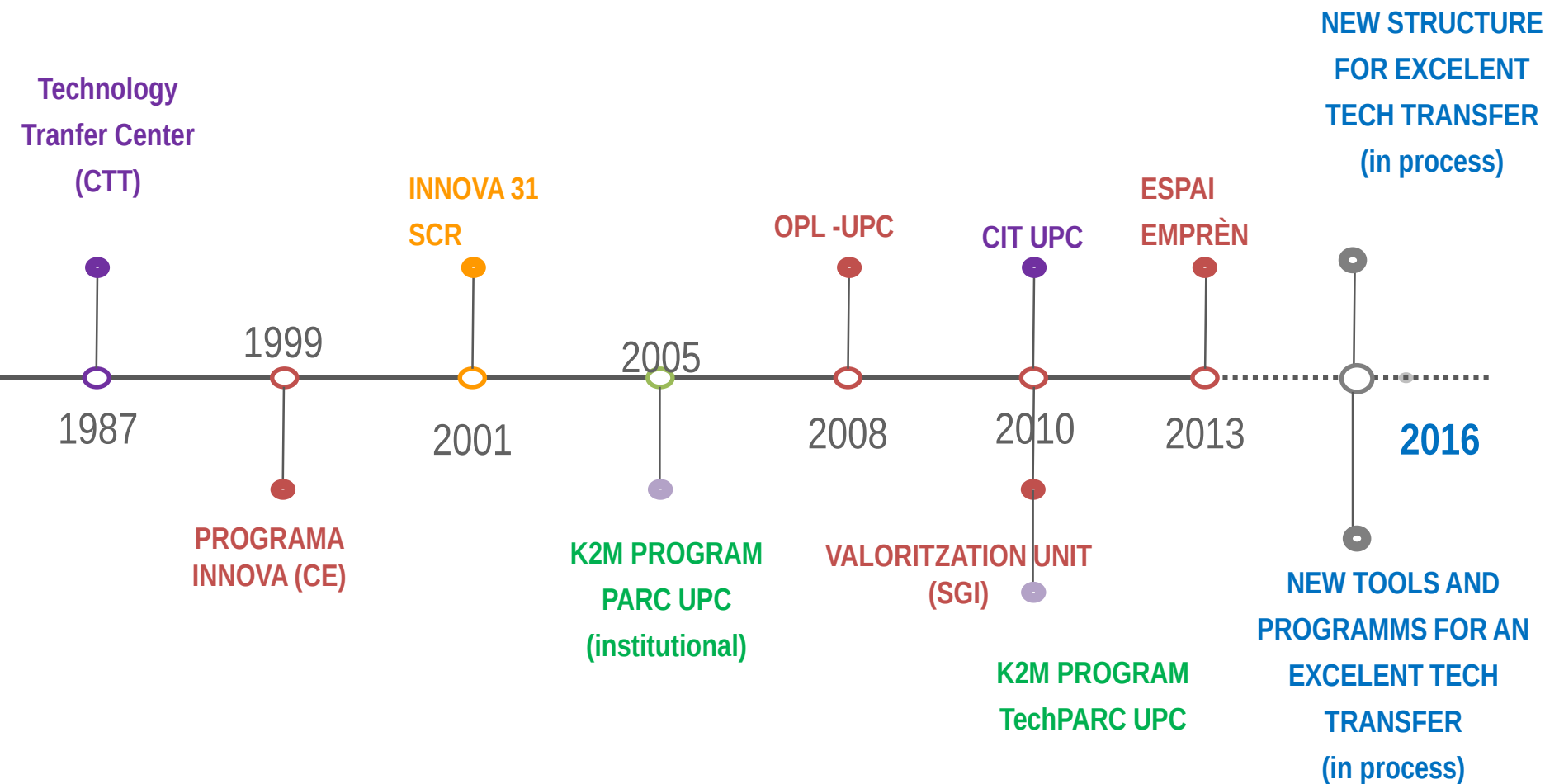


Research to Innovate





Technology Transfer System, Entrepreneurship and Innovation UPC



- **Research groups:** UPC puts the university research capability of the **205 UPC research and technological transfer groups** at the service of the **innovation in businesses**, and deals with their technological needs, providing an integral and multidisciplinary technological service, thereby supporting the enterprise innovation (Technology Transfer Center, 1987).



- **Scientific and technical services** of the UPC as installations, laboratories and forefront equipment to support research and innovation for companies and promote relations between university-enterprise.





UPC Facilities

- **Innova program:** UPC boosts and facilitates the protection, valorization and transfer of its research results. UPC brings its research and innovation closer to those who need it, executing the most suitable option for each need (Innova 1999, Patents Office 2008, Valorization Unit 2010).



Programa Innova

UNIVERSITAT POLITÈCNICA DE CATALUNYA



NICE FRUIT

*Sparsity



- **Parc UPC**, the Science and Technology Park of the UPC, is aimed to facilitate knowledge transfer and the development of innovation ecosystems by making facilities and value-added services available to technology-based companies, organizations and initiatives. ParcUPC provides facilities, technological infrastructures and value-added services, all aimed at fostering synergies between research stakeholders and companies and ultimately designed to ensure successful projects and enterprises (2005).

Parc 





UPC Facilities

- **Espai emprèn:** UPC offers incubation spaces and boosts Entrepreneurship for UPC students, graduates and researchers (2013).





- The **UPC Technology Center (CIT UPC)** is a non-profit entity, attached to the UPC but with its own legal personality. It is dedicated to applying university research capabilities to innovation in business (CIT, 2010).

CIT UPC was created to promote greater business competitiveness by creating, developing and implementing in companies differential technological knowledge that is generated in the UPC's research and development centers.

To become an international benchmark for excellence in research, technology transfer and innovation in technological areas that impact companies and economic growth.





UPC - COMPANIES



Internship programs, development of **graduate tailor-made courses** for companies and **programs of identification of talent** through real projects of the company.



Diagnosis Programmes of the technological situation of the company and proposals for the improving productivity, encouraging research through the integration of UPC scientific and technological capabilities. Offer of Labs and scientific equipments to promote **open innovation**.



Programmes for the development of sector **technological entrepreneurship projects**, for the **incubation and mentoring** of new business ideas and innovative projects. Acces to a broad portfolio of **patents** and to **investment** forums of the best start-ups generated by UPC



From 1998 to 2015:

291 spin-off and **start-up**

455

Patent licenses

(from 2009 to 2015)

62,507,381 €

Research income (2016)

18,679,000 € of which coming
from contracts with companies

150 companies located in Parc UPC

ESA (European Space Agency)

Business Incubation Center

Located in the UPC and supported by the
UPC

2,494

Sponsoring and **collaborating**
companies

OPEN INNOVATION

IS NOT SUITABLE (nor possible) TO INNOVATE ALONE.

The most effective solution is to network in a context of open innovation. Sharing risk and reward with other partners.

Much of the funding for innovation is aimed at promoting cooperation between different companies and academic institutions.





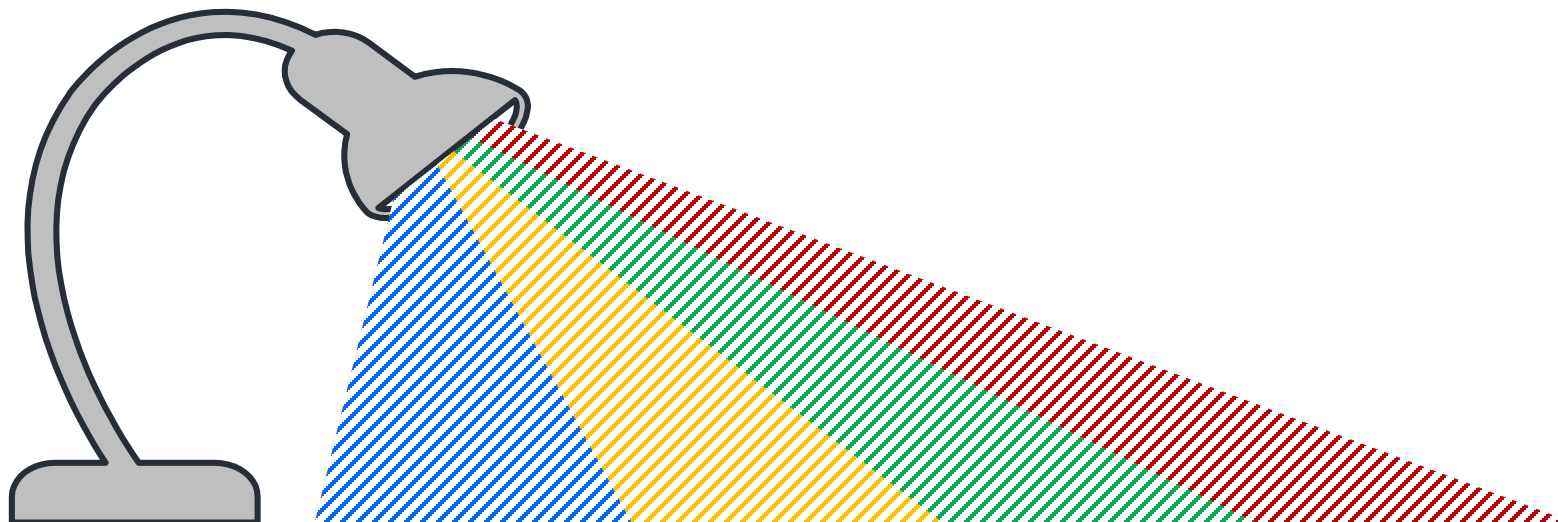
OPEN INNOVATION

Classical University model

Isolated services: Patents Office, Licensing, Contract research,
Individual relation with Companies

New model

More complex and network system. Collaborative research
and development



Be more proactive

**Define new tools,
vehicles and structures**

**Define strategic
sectors and
technologies**

**Creating new
Partnerships**

UPPC



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MUCHAS GRACIAS !

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Internships

Attracting talent through educational cooperation agreements through apprenticeships at companies or the development of Bachelor or Master's Thesis in topics of common interest and defined by the company.

Millennials UPC challenges

Identification of talent programme through real projects of the company.

Master and Graduate Programmes

Participation in Master's degree Programmes and development of graduate tailor-made courses for companies with the possibility of In Company training through qualified teachers and the company own staff.

Talent UPC-Empresa scholarships

Scholarships Programme for students developing part of their Master or Graduate training programme in collaboration with the company and under supervision of an external tutor

Forums of Entreprises

UPC offers some forums to connect companies with last-year students and alumni.



Diagnosis Programmes of the technological situation of the company and proposals for the improving productivity, encouraging research through the integration of UPC scientific and technological capabilities. Offer of Labs and scientific equipments to promote **open innovation**.

UPC Technological Diagnosis Pills

Technological needs Diagnosis Programme for the improvement of the technological position of the company.

UPC makes a great cast of technological capabilities and knowledge available for companies, in order to improve their technological and innovative position.

UPC Technological Diagnosis Pills aim at identifying technological needs of the companies, allowing the improvement of their procedures, business, etc through technological developments ad hoc. The pills are intended to be a channel for the identification of technological innovation needs and the first step to set up added value technological collaborations with an advanced technological supplier like UPC.

Some examples of these pills results:

- Studies of technological and state-of-the-art surveillance

- Studies of technological and industrial viability

- Testing and validation of pilot projects and new methods

- Experimental testing and validation of new prototypes, new products in/or services

Offer of labs and scientific equipments

UPC enables the innovative activity of the companies through a wide spectrum of labs, scientific equipments and staff specialised to facilitate their technological and innovative development

Industrial Doctorate Programme

This programme fosters the linking between research staff and companies in order to develop research projects.



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LET- Technological Entrepreneurship Lab

Programme for the UPC-Industry bilateral development of technological entrepreneurship projects in pre-seed phase of an idea in order to become a company project, developed by Students, Phd candidates, Researchers, external Entrepreneurs with a technological project solving present problems.

Sector Technology Incubation Programme

Bilateral UPC-Industry development of Corporative Incubation of Technology Entrepreneurship projects in the sector of interest of the company at an advanced stage of development.

UPC Technological Patents

Access to a broad portfolio of patents

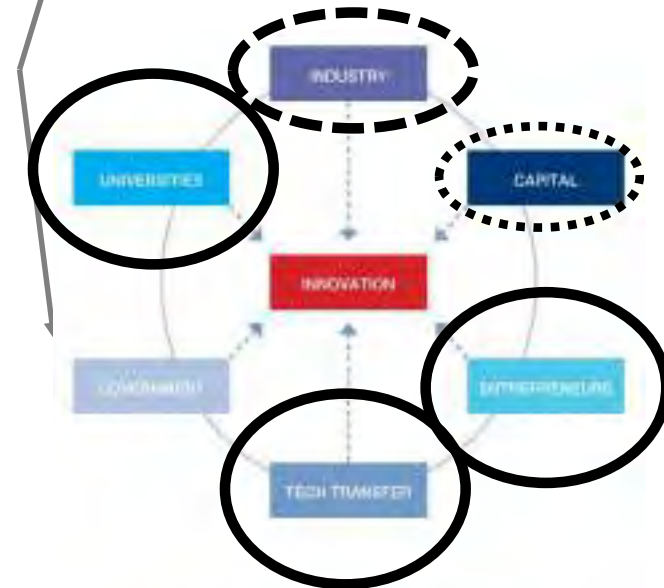
ACCEL UPC - Investor's Day

Investment Readiness Programme for high potential industrial projects (UPC environment).

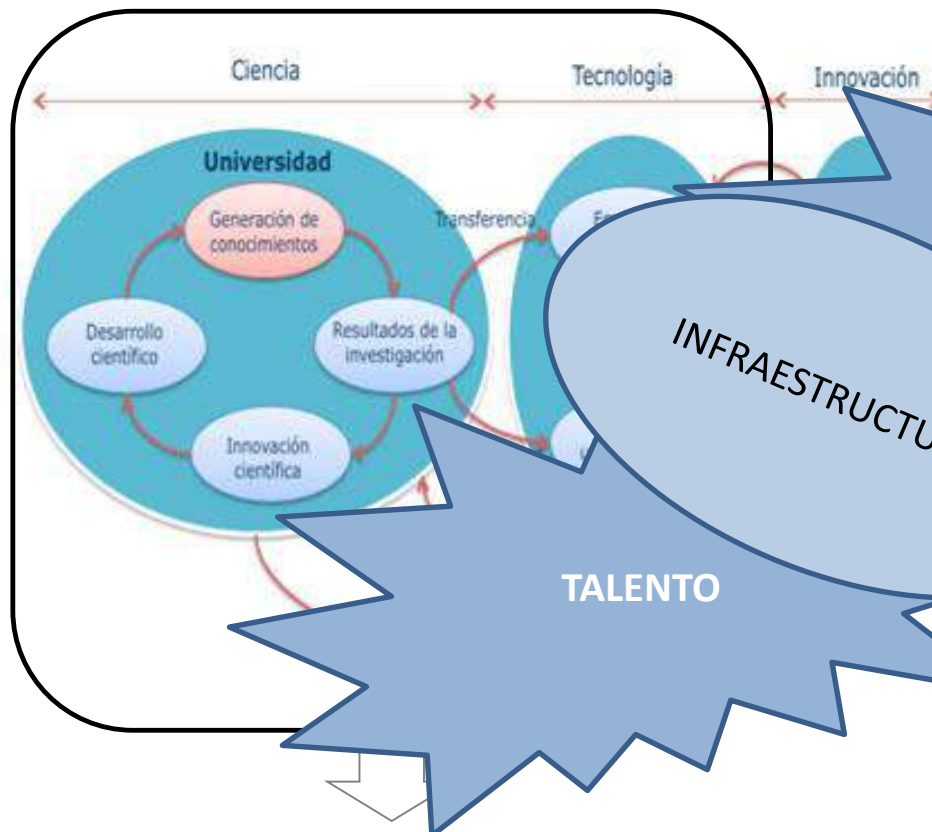
Un **Parque Científico** **estimula y administra** la transferencia de conocimiento y tecnología entre universidades, instituciones de investigación, industria y mercado; Impulsa la **creación** de **empresas innovadoras** y el **crecimiento** a través de mecanismos de incubación, y proporciona no sólo espacios de calidad e instalaciones, sino también servicios de valor añadido.

ECOSISTEMAS DE INNOVACIÓN

Parque Universitario



Y es en la cadena de innovación donde el Parc UPC se convierte en un elemento estratégico del ecosistema Innovación



El principal logro de la incubación universitaria es la conexión entre la investigación universitaria y las empresas, creando una nueva generación de empresas y pequeñas empresas, incrementando así la creación de empleo y el desarrollo económico de su territorio.

CONOCIMIENTO /TECNOLOGÍA

TALENTO

INFRAESTRUCTURAS

Parque Científico y Tecnológico de una Universidad
Modelo de incubación K2M (Knowledge to Market)

- Colaboración entre grupos de investigación y centros de investigación y empresas.
- Infraestructuras científicas.
- Talento



https://www.youtube.com/watch?v=_kJx6t-pWrw



El Parc UPC se constituye el 29 de Noviembre de 2005 por aprobación del Consejo de Gobierno de la UPC. En julio de 2009 se constituye la Fundación Parc UPC, y en diciembre 2015 se internaliza a la UPC.

La **misión** del **Parc UPC** es:

- Impulsar el compromiso social de la UPC favoreciendo la investigación, la innovación, la transferencia de resultados y el progreso tecnológico.
- Convertirse en un agente dinamizador socioeconómico entre la universidad, las administraciones y las empresas, en acción coordinada con el Consejo Social.



Los **objetivos fundamentales** del Parc UPC son:

- **Incrementar la riqueza** de su comunidad **promoviendo la cultura de la innovación** y la **competitividad de las empresas** e instituciones generadoras de conocimiento instaladas en el parque o asociadas a él.
- Promover y facilitar la **investigación**.
- Impulsar la **permeabilidad del conocimiento**.
- Facilitar el **contacto** universidad-empresa y la **difusión** de los resultados de la investigación universitaria en la sociedad.
- Ayudar a la creación y desarrollo de **empresas** tecnológicamente **innovadoras**.

El Parc UPC es un agente catalizador de generación de conocimiento y transferencia tecnológica en un entorno de servicios a la innovación y a la tecnología.



DISTRIBUCIÓN TERRITORIAL PARC UPC

Terrassa

1. Edificio GAIA I – Incubadora proyectos R+D
2. Edificio GAIA II – Incubadora proyectos R+D
3. Edificio GAIA III – Incubadora proyectos R+D
4. Edificio Laboratorio Bioclimático CTTC
5. Entorno IPCT – vivero empresarial e incubadora



Barcelona Campus Nord-Sud

6. Edificio K2M – Incubadora proyectos R+D
7. Edificio PTB - Parc Tecnològic Barcelona
8. Edificio CRnE – Investigación Nanoingeniería
9. Edificio Nexus I – Vivero de empresas R+D
10. Edificio Nexus II – Vivero de empresas R+D



Barcelona Diagonal Besòs

1. En proyecto

Viladecans

11. Agrópolis – Investigación agroalimentaria, biotecnológica, medio ambiente y paisaje.



Castelldefels

12. PMT – Parque Mediterráneo de la Tecnología
 - 12.1. Edificio RDIT – Edificio de valorización R+D



Vilanova i la Geltrú

13. Neàpolis - Incubadora TIC
14. ViGct – Centro Tecnológico



Manresa

15. CTM - Centro Tecnológico Manresa



**MÁS DE 100.000 m2
CONSTRUIDOS**



Espacios **PARC UPC**: adecuados a las necesidades específicas



UPC LABS 1ª ubicación grupos de investigación
2752 profesores/investigadores



K2M
Incubación



NEXUS
Desarrollo empresarial



Entornos
Incubación
Desarrollo empresarial
Parcelas
Espacios de campo
Invernaderos
Fab-labs



ICFO
234 investigadores



BSC
140 investigadores



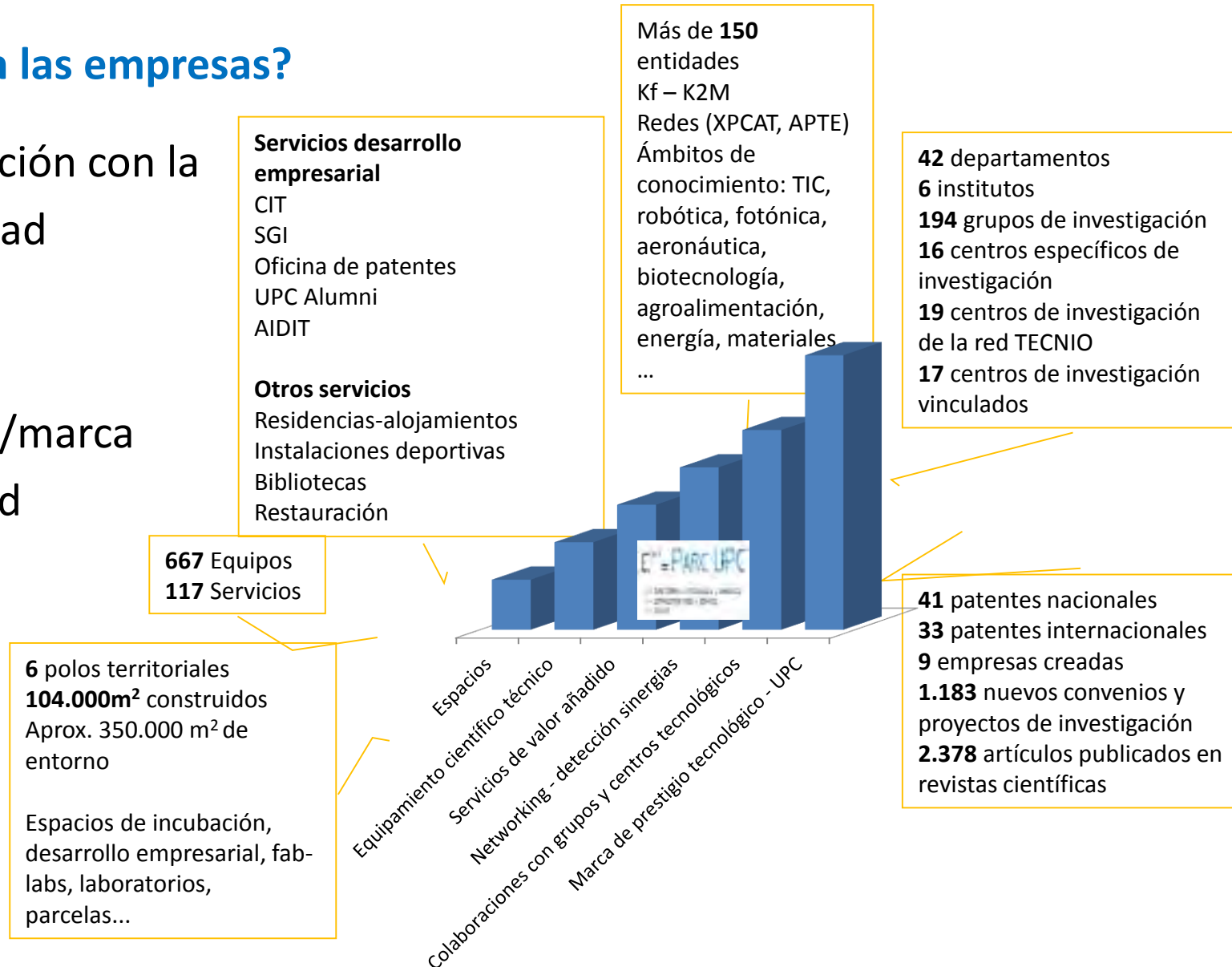
CIMNE
208 investigadores

SELECCIÓN !!!

- Ámbitos estratégicos de interés de la Universidad.
- Alineadas con la política de investigación de la Universidad
- Modelo / procedimiento

¿Qué buscan las empresas?

1. Colaboración con la universidad
2. Talento
3. Vecindad
4. Identidad/marca
5. Visibilidad





PROGRAMAS (algunos)

PROYECTOS (algunos)





Más de 150 empresas/entidades ubicadas en Parc UPC

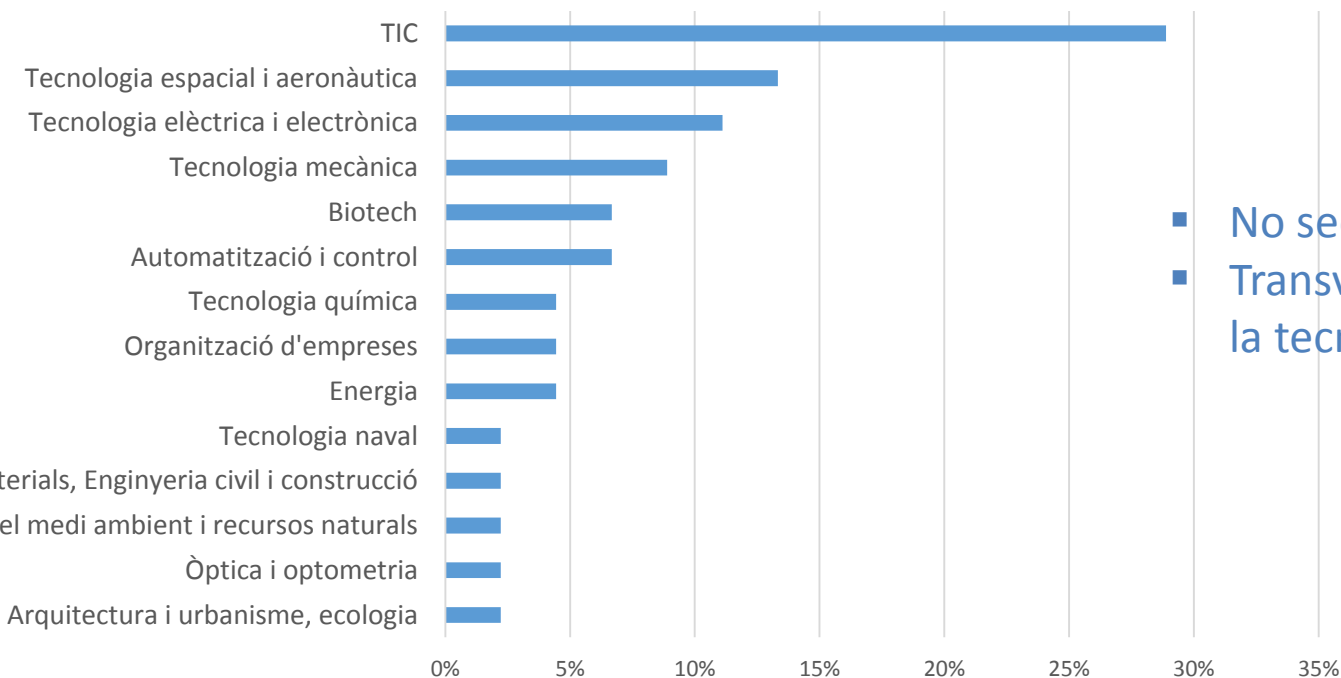
Aprox. 90% micro-empresas



Más de 4.000 personas trabajando en empresas/entidades del Parc UPC

65% doctores
23% mujeres

Distribución por sectores de actividad (% de cada sector sobre el total de empresas)

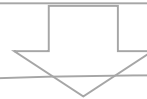


■ No sectorial
■ Transversalidad de la tecnologia



En resumen, **PARC UPC ES:**

- La cuna de proyectos tecnológicos innovativos
 - El mejor sitio para spin offs y start ups - El mejor sitio para emprendedores
 - El mejor sitio para Centros tecnológicos
 - El mejor sitio para ubicar unidades de I+D+I de grandes compañías
- Donde se genera la mejor tecnología innovadora para una mejor calidad de vida
- Donde se fomenta la transferencia de tecnología y conocimiento entre Universidad y empresa
- Donde las empresas pueden contribuir en la educación y formación universitaria
- Donde se generan oportunidades para los jóvenes profesionales



Contribuyendo al incremento de PIB (GPD)
Contribuyendo al incremento de ocupación

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