Joint Research Centre
Introducing the Competence Centre on Technology Transfer

NCP Info Session
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Alessandro Fazio, Head of Competence Centre on Technology Transfer, JRC, European Commission
Made in China 2025 strategy aims to make China a world leader in 10 key industrial sectors:

- Next-generation IT
- Advanced rail
- Aerospace and aviation
- Maritime engineering
- New vehicles
- Electrical equipment
- Agricultural machinery
- New materials
- Numerical control machinery / robotics
- Biopharmaceutical & medical devices

EU-15 (West) 67,884 (1/3 from DE)
EU-13 (East) 1,246 (1/3 from PL)
US 42,300
China 8,330 (x2 in 3 years)
Japan 21,712

Chinese Shares in European Firms
(% growth from 2000)

World Share of High Impact Publications

R&D Intensity
Component of S&P 500 market value (from Ocean Tomo)

<table>
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<tr>
<th>Year</th>
<th>Share of intangible Assets</th>
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<tr>
<td>1975</td>
<td>17%</td>
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<tr>
<td>1985</td>
<td>32%</td>
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<tr>
<td>1995</td>
<td>68%</td>
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<tr>
<td>2005</td>
<td>80%</td>
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<td>2015</td>
<td>84%</td>
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Market valuation in billion US dollars

End 2006
- Exxon Mobil
- General Electric
- Gazprom
- Microsoft
- Citigroup
- Bank of America
- Royal Dutch Shell
- BP
- PetroChina
- HSBC

2018 1Q
- Apple
- Alphabet
- Microsoft
- Amazon
- Tencent
- Berkshire Hathaway
- Alibaba Group
- Facebook
- JPMorgan Chase
- Johnson & Johnson

Source: Bloomberg, ycharts
The Advent of Artificial Intelligence

- Exponential growth of AI startups (15b$ in 2017 from 1b$ in 2012),
- US leads but China is catching up very fast
- Europe is growing but at slower pace
- Investment if AI startups reached 50% of total investment in start-ups in OECD
- AI share expected to grow
- Different shares depending on applications
Data Vs Computing Power

Technological solutions emerge

- New powerful chips
- Edge and Fog computing
- Quantum computing...

Data Growth
40% per year

CPU Processing Power
20% per year

Silicon-Born AI on single Chip

Dedicated AI accelerators + smart sensors

General Purpose Microcontrollers + sensors
Deep-tech start-ups are key to Europe’s competitiveness and industrial renewal, delivering high socio-economic impact.

Contrary to US-type digital companies, EU-type deep-tech start-ups have great life expectancy and low rate of failure.

Need higher financial support early on, even though they tend to balance out at a later development stage.

They heavily rely on patent protection.
"Research transforms money into knowledge…

….Technology Transfer transforms knowledge into money”

Geoffrey Nicholson, 3M, father of Post-It
General unavailability of private investments
High transaction costs
High risk
Difficult to evaluate opportunity
Competence Centre for Technology Transfer

• Single reference point for expertise on technology transfer at the EC

• To support EU policy development, from upstream concept stage to the downstream implementation phase

• To deepen understanding and knowledge of technology transfer through research and aggregation of results and best practices
The Technology Transfer Ingredients

**Framework**
- IP framework
- Institutional Processes
- People

**Finance**
- Proof of Concept
- Industrial scale-up
- Private Equity (VC)

**Places**
- Plan
- Orchestrate
- Manage

S3
TT Offices Procedures

- Licensing Policies
- ND/NCAs
- IP policies
- Spin-off Policies
- Material Transfer Agreements Policies
- Disclosure policies
- PoC Support
- Contract Research policies
• Technology Scouting
• IP Identification
• IP Generation (patentability, freedom to operate, etc.)
• IP Management (valuation, evaluation)
• IP Licensing
• IP Assignment
• Dispute Resolution (arbitration and mediation)
• Spin-off Creation and Management
• Investor Relations
• Entrepreneurship
Urban Innovation Hubs on the rise in Europe

Paris - Station F (opened on 29/6/17)
Hosts up to 1000 start ups (3000 desks), 38,000 m², 310m x 58m, 20 accelerator programs, dismissed freight station, hotel (800 rooms) + restaurant (1000 seats)

Lisbon - Criativo do Beato (gradual opening)
35,000 m² in 20 buildings in former army food factory, 200m€ VC fund + tax incentives, plans for 100,000 m² extension to 3000 start ups

London – Plexal (opened on 12/6/2017)
6,300 m² incubator in Queen Elisabeth Olympic Park (250ha). 800 desks, several acceleration programs.

Milan – Areexpo (masterplan in development)
New S&T park in Expo 2015 area of 100ha, focus on health, big data, agrifood and biotech. Includes university, hospital and large research centre.
Studies

• IP collateralisation and securitisation (2016)
• PPPs in Science and Technology Parks and Innovation Districts (2020)
• Corporate Venturing (2020)
• TT Metrics I (2020)
• TT Tools (2021)
• TT Metrics II (exp. 2021)
• Innovative investment models for Innovation districts (end 2021)
• Impact investing for the Western Balkans (end 2021)
Supporting EC DGs with Expertise and Competences

- RTD – Conception and ex-ante evaluation of InnovFin TT
- DG NEAR – Coordination of TT related capacity building measure in the Western Balkans
- DG NEAR - Regional proof of concept support scheme for the Western Balkans
- DG REGIO – Assessment and recommendations on improving operational performance of Sofia Tech Park
- DG REGIO – Strategic Evaluation of Bulgarian Centres of Competence and Centres of Excellence
- DGs RTD/NEAR – Benchmarking study of TT ecosystems in 12 neighbourhood countries
- DG COMP – Study on the application of the state-aid regulation to RDI organisations
- DG REGIO – Strategic evaluation of the technology transfer and IPR protection systems of Bulgaria, Croatia and Romania
- INTPA – Medicines and Vaccines manufacturing in Africa
- Slovakia
30+ Public Research Organizations
200,000 staff
35,000 patents
4,200 Startups
5,200 software