The knowledge transfer in the French context: an overview

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Information and Knowledge for All:
Towards an Inclusive Innovation

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• France’s position regarding R&I as a source of competitiveness: a paradigm shift starting in the 90’s

• A local illustration of the French Mechanisms & supporting tools for the collaboration between Universities / Research Institutes / enterprises in innovation & technology transfer:
  • Competitiveness clusters
  • The SATT model
  • The articulation with local TTOs
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R&I: a key challenge for competitiveness
• Most European countries turn to research & innovation as a key source of competitiveness in the late 90’s (Lisbon Strategy: 2000)

France’s position was not the most favorable
• High quality research, poorly transferred towards industry
• Weak interactions between public labs and private companies
• Low private R&D spending
• Fragmented landscape of TTOs, long & complex processes for tech transfer
• Funding mechanisms for public research based on a “per head” approach, and mostly aimed at “fundamental research”
France’s position regarding R&I as a source of competitiveness: a paradigm shift starting in the 90’s

A structured approach for a paradigm shift over 10 years

• New legal framework for research and innovation (1999/2002)
  Foster the creation of start-ups & the participation of public researchers as shareholders
  Creation of “public incubators” to foster the development of start-ups

• Shift towards a “project-based” funding mechanism for public research (2005)
  Creation of the “National Research Agency”, operating under a “competitive call for proposal” system
  ➔ A clear turn towards a “competitive and meritocratic” funding system
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A structured approach for a paradigm shift over 10 years

• Revamped « R&D Tax credit » system to attract and develop private R&D investment (2005/2008)
  Tax credits from 500M€ in 2003 to over 5B€ in 2012
  Most competitive rates in Europe: 30% to 40% tax credit for “private” R&D;
  60% to 80% for R&D subcontracted to public laboratories!

• Creation of competitiveness clusters: building competitiveness out of public research (2005)
  • Strengthen regional innovation systems through collaboration between:
    “Industry – Research – Training” (triple helix)
  • Develop and fund collaborative research programs between public labs and companies:
    over 4B€ funding

• National Research & Innovation Strategy (2009)
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« Investing for the Future » Program: a bold answer during the crisis period (2009/11)

- 22B€ to fund projects presented by public entities or public/private consortia, to “feed” tomorrow’s competitiveness
- Competitive calls for proposal – International Jury: funding excellence in a meritocratic system
- An Investment, not a grant: ROI (financial & socio-economic) is required
- A 10 year funding: visibility & sustainability
- Few emblematic calls:
  - Attract and retain talents: “Campus of Excellence” (800M€ / 1B€)
  - Focused research operator in Public Private Partnership: “University – Hospital Institute” (IHU) / “Technological Research Institute” (IRT) (150M€ / 300M€)
  - Super TTOs: consolidating collaborative research, investment in “Proof Of Concept”, and licensing (35M€ / 70M€)
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Illustrating French Policy with the Auvergne-Rhône-Alpes case
Two approaches to public-private partnership in Research

• The Competitiveness Cluster Policy

• The “SATT” Policy: Accelerating Technology Transfer
Two approaches to public private partnership in Research

• **The Competitiveness Cluster Policy:**
  • Developing competitiveness through research collaboration & Open Innovation
  • Focused on Collaborative Research programs between public research labs and private companies as a tool to develop industry competitiveness
A bold initiative based on M. Porter’s Cluster theory: research collaboration leads to innovation and growth

A not so young (1979) but proven approach

- Deployed in North America in the mid-80’s
- Remarkably focused in Canada on 5 strategic sectors and through a sustained effort
- Canadian policy has produced over 20 years world class industrial sectors (ICT/gaming, Aeronautics, life sciences, materials)

Based both on “assets” and a dynamic of collaboration anchored in a territory

- A critical mass of companies, training organizations and public research organizations involved in a specific industrial sector in a given territory…
- Involved in collaborative projects with several partners
- With the sole objective to boost innovation and growth in industry

Leveraging strong incentives to foster these collaborations

- **Substantial funding** to finance collaborative research programs & initiatives
- Teams of dedicated professionals to provide support services
Map of Competitiveness clusters

(October 2014)

For more information about Competitiveness clusters: www.competitivite.gouv.fr/en
A sustained effort over 10 years (2005 – 2015)

72 Clusters have been created among which 17 « World Class »
- Covering key industrial priorities identified in the National R&I strategy: energy, transportation, health, materials, …
- Based on strengths & assets of each territories

Clusters have succeeded in federating key players
- 100% of publically traded companies
- 100% of PROs
- 50% of innovating SMEs

Substantial investment has led to growth
- 1445 collaborative R&D projects between companies and PROs, mobilizing over 15 000 researchers
- 6,4B€ of R&D investment, 3,9B€ coming from private companies
- 70% of companies involved in a cluster have experienced higher growth
Two approaches to public private partnership in Research

- The Competitiveness Cluster Policy

- The “SATT” Policy: accelerating Technology Transfer
  - Proof of Concept funding as a key tool to boost Technology Transfer from academia to industry
An agreed upon fact:
Most European countries perform poorly in technology transfer from public research
  • Despite a high quality public research in terms of scientific publication…
  • Transfer of public technologies towards industry is still lagging behind (whatever metric used)
  • Various explaining factors: culture, professionalization / specialization, fragmentation of actors & lack of critical mass, lack of demonstration…

Lack of demonstration / maturity:
a key barrier to transferring public technologies towards industry
  • Public research lacks material and financial resources to carry out “demonstration phase” of research projects
  • Functional prototype
  • In vivo validation (molecule)

To reduce their risks, most industrial partners / investors will require a strong POC
« Proof of Concept » funding…

What?

A definition? Some definitions…?

• A starting point?
• What kind of work / activities should be financed?
• Where should it stop?...

From a TTO standpoint, a POC project should produce the data / prototypes / validation / information required

• by an industrial partner to decide on in-licensing a technology
• By a venture to invest in a start-up
  • Kind of work (technical, IP or market study…)
  • Outsourced or in the lab

The clearer definition is to start from the end point, and in a TTO perspective…
« Proof of Concept » funding…
What for?

Foster transfer of public research results towards industry by absorbing a larger portion of risks
  • Public research as a key source of innovation for industry
  • Critical for SMEs which internal R&D capabilities and financial means are weak

Higher return on investment made in public research
  • Socio-economic return through industry growth and job creation
  • Financial return through higher value of IPR

Stronger start-ups, with higher growth potential
  • Higher TRL foster fund raising for start-ups

POC funding mechanisms are today considered as key elements in the funding chain of innovation
POC funding mechanism are currently developed at EU level
France’s response: SATT*, a new breed of TTO

*Société d’Accélération du Transfert de Technologie Corporations for accelerating Technology Transfer
SATTs in France

- 14 SATT operating
- 850M€ of funding to invest in IP and Proof of Concept over 10 years
- 160 PROs have transferred exclusive management of IP & tech transfer to 14 SATT
- Over 470 professionals on the field (scouting, project management, business development, Intellectual Property, legal…)
- 930 patents filled, over 600 technology offers
- Over 150M€ invested in POC programs
- 180 licence deals closed – 60 start-ups created
Illustration of the articulation SATT and local TTO
Techno push vs Market Pull
INSAVALOR

INSA’s subsidiary for Research and Development, continuous training.

Main activities
• R&D training
• R&D valorisation and technology transfer
• Business and innovation center:
  • 10,000 m² of facilities
  • 50 companies and institutions

15M€ turnover / year
1000 contracts / year
As a promoter of research at INSA, INSALCAR furthers cooperation between laboratories and firms looking for technological solutions, skills and training for their innovative projects.

**Identifying scientific competences**
- understanding the needs of companies and identifying the laboratory or the group of laboratories which may provide answers: setting of research collaborations, engineering, service, consultancy, coordination of R&D projects, ...

**Providing support for a fruitfully cooperation**
- Contract under private law
- An help regarding intellectual and industrial property
- Capacity of employing missing resources

**Finding financial solution**
- helping laboratories to identify which Institution may give a financial help for making their research (collaborative projects ...)
- Insalcar has Research Tax Credit ("Crédit Impôt Recherche / CIR") agreement for years 2013 / 2014 / 2015