



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

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)

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

« 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

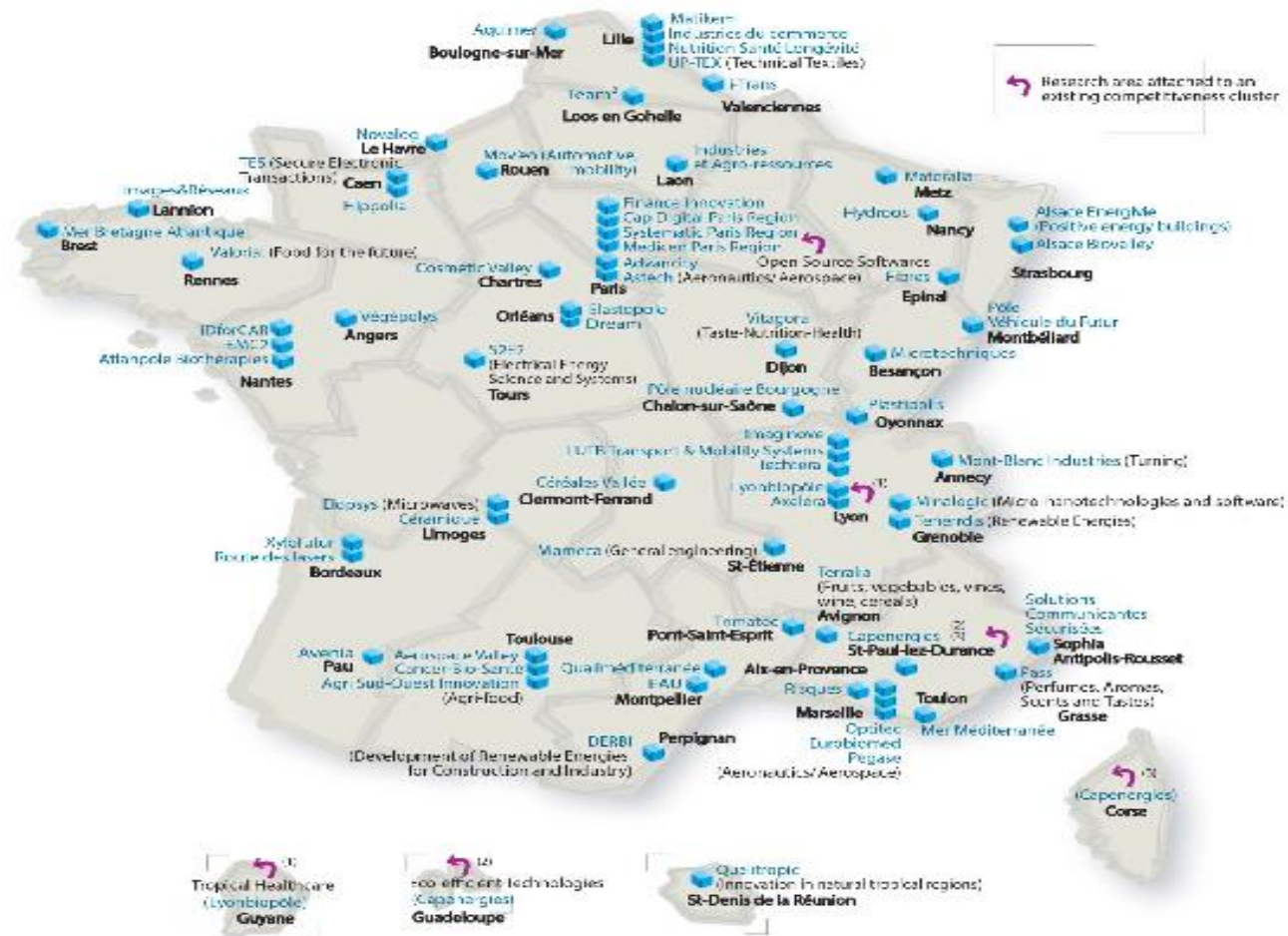


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LES PÔLES DE COMPÉTITIVITÉ
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Map of Competitiveness clusters (October 2014)

For more information about Competitiveness clusters : www.competitivite.gouv.fr/en



Source: INSEE, (October 2014)

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

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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

« Proof of Concept » funding... Why?

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

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France's response: SATT*, a new breed of TTO

3rd & 4th July 2017

***Société d'Accélération du Transfert de Technologie
Corporations for accelerating Technology Transfer**

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- 13th Edition -

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

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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



INSAVALOR

As a promoter of research at INSA, INSAVALOR 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 ...)
- Insavalor has Research Tax Credit (“Crédit Impôt Recherche / CIR”) agreement for years 2013 / 2014 / 2015