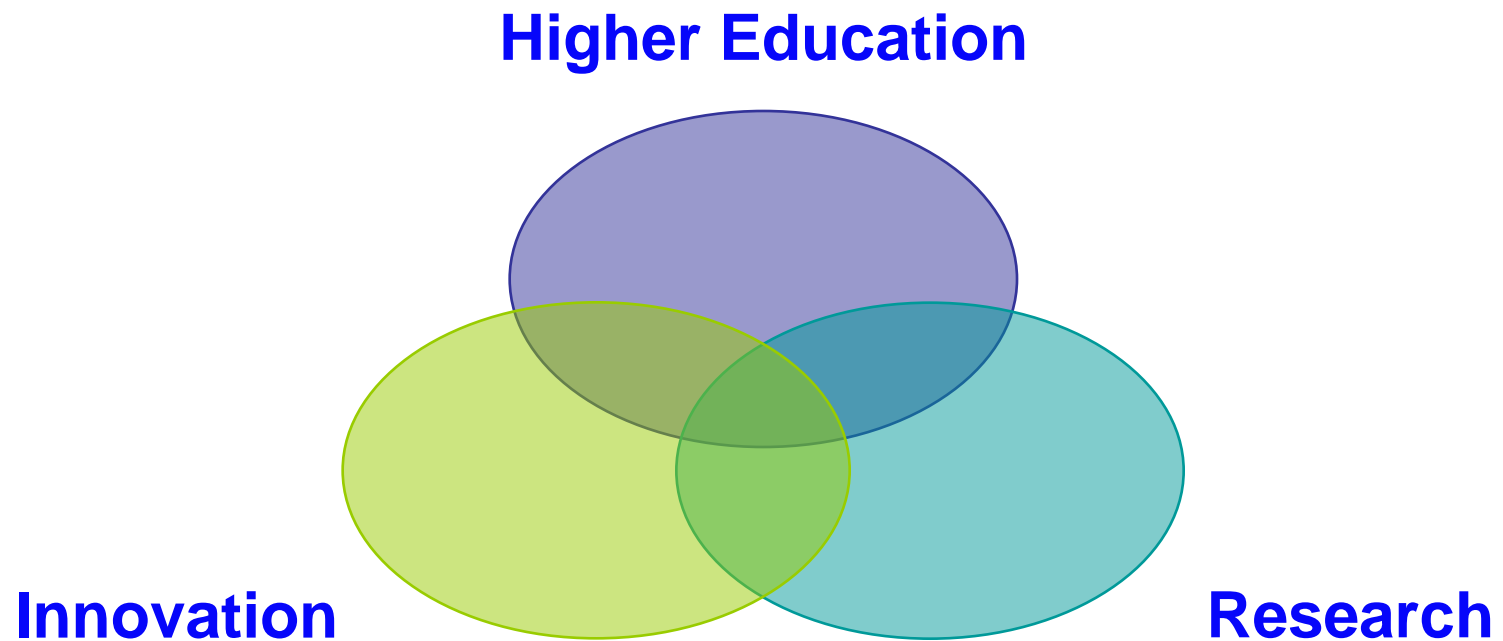


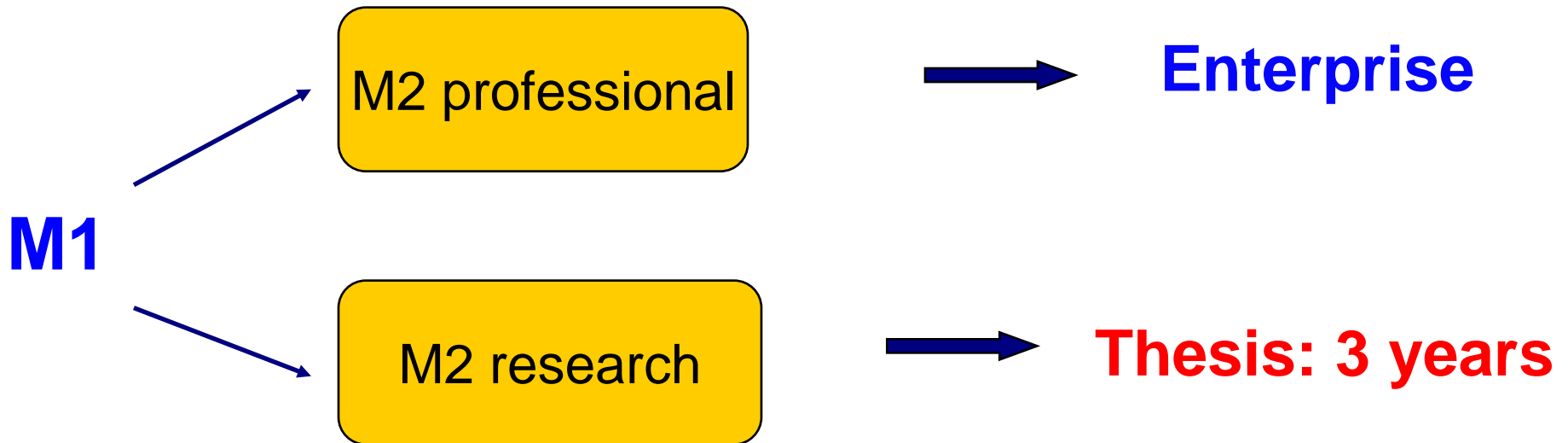
The University Magic Triangle



at the central position:
the doctoral level

European system:

3 years Bachelor + 2 years MASTER



Admission for thesis :

any degree equivalent to Master (minim. 5 years studies)

30% Foreign PhD students, increase by 10% since 2004

Doctoral Level :The Pivot between Training and Research

- **France:** organized in **Doctoral Schools**, by universities and scientific domains. Links between **students** and **labs**.
- 1 supervisor but joint seminars, workshops, parties...
- « **Doctoriales** »: a week training for job and enterprises
- **Support:** 3-years grants from French govt, open to foreign
+ regions, contracts, universities, enterprises, Foundations,
from home countries (partnerships)

See <http://www.campufrance.org/ecoledoc/>
Make direct contact with Doctoral School, team or Professor

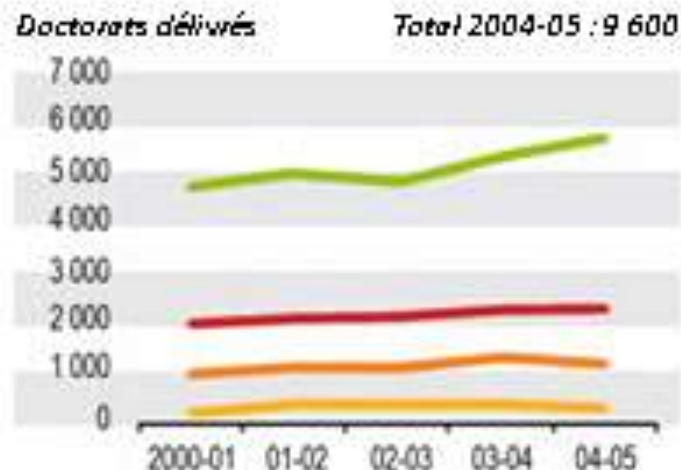
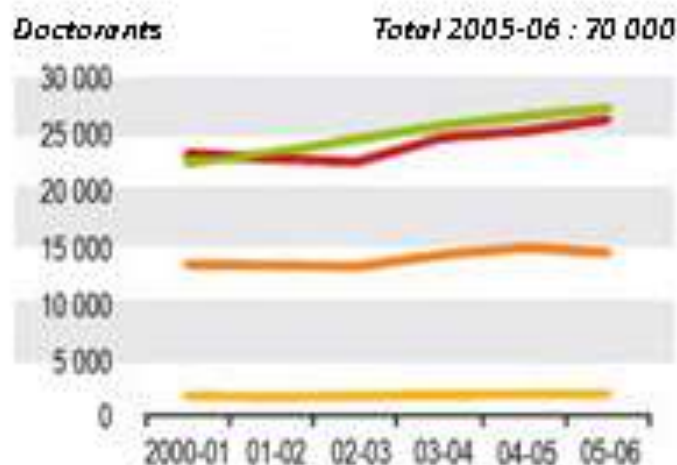
2008: 74 000 PhD students, 12 000 defences



Doctorants et doctorats délivrés

Evolution par discipline

- Sciences
- Lettres, langues, sciences humaines
- Droit, économie, AES (Administration économique et sociale)
- Santé



New Trends in Research and PhD's

- **Interdisciplinary research:**

Neurosciences (biology, physics...)

Nanosciences (physics, chemistry, biology...)

Environment (chemistry, biology, law, economics...)

Energy (physics, chemistry, economics...)

- **Networks of laboratories and enterprises** on these themes (at French or European level), **with thesis grants**
- Financial support of **Projects** (ANR: National Research Agency) **with thesis grants**

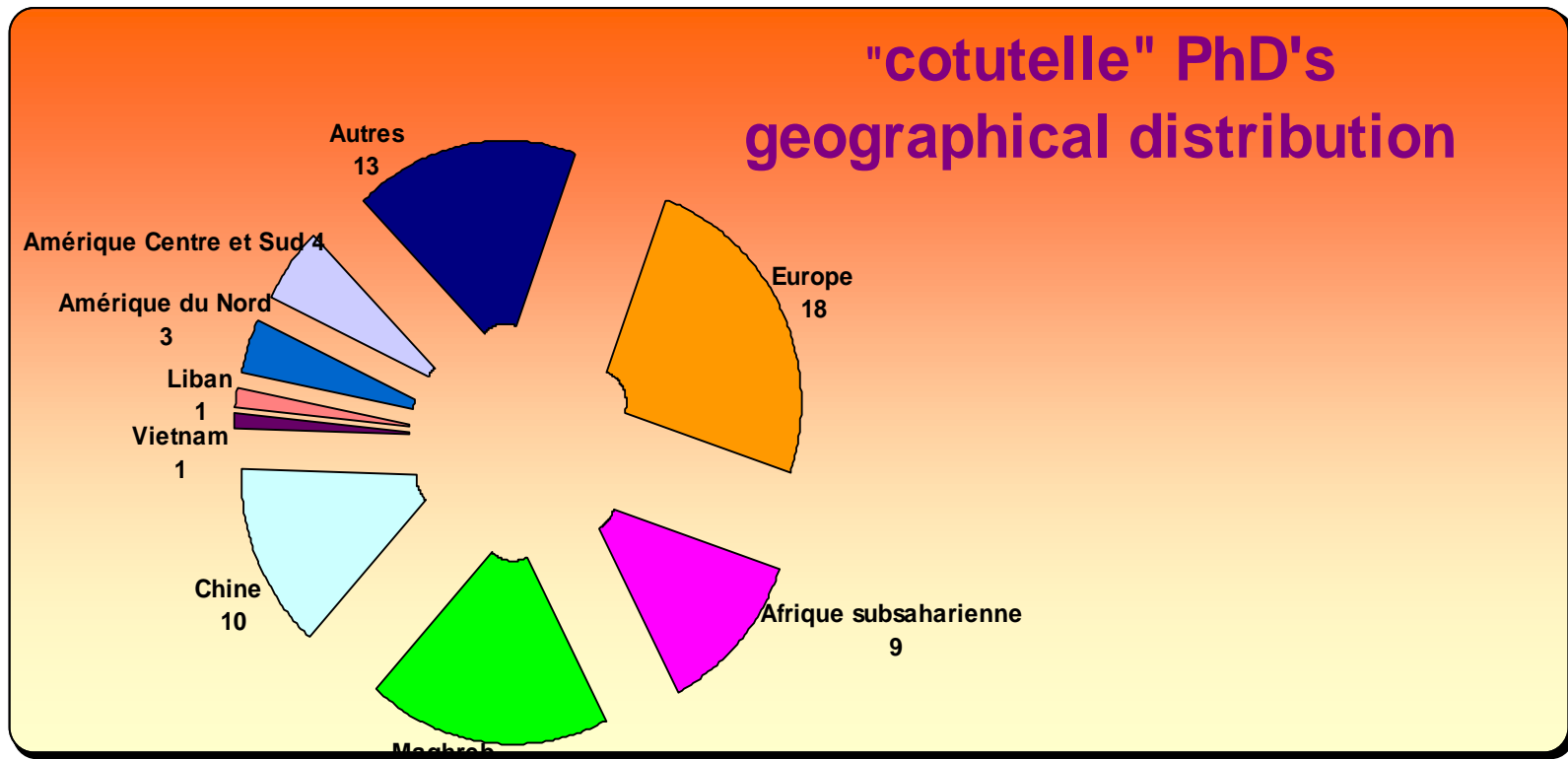
International Partnerships at the Thesis level:

« **cotutelle** » or « **sandwich** » thesis
→ alternate periods, **double diploma**

Benefits of a sandwich thesis:

- **for the student:** mobility, international contacts
English OK (in Sciences)
double diploma
- **for the laboratories:** beyond one student!
extended collaboration, joint publications, other students
- **For the country:** ***Less brain drain!***
- **Required:** good quality of internet connections
good communication between the teams
travel support for students and supervisors

**Example of Paris-Sud : 2600 PhD students (10% total),
500 foreign, 130 sandwich theses, 15 Doctoral schools**



Trends and Future: more synergies

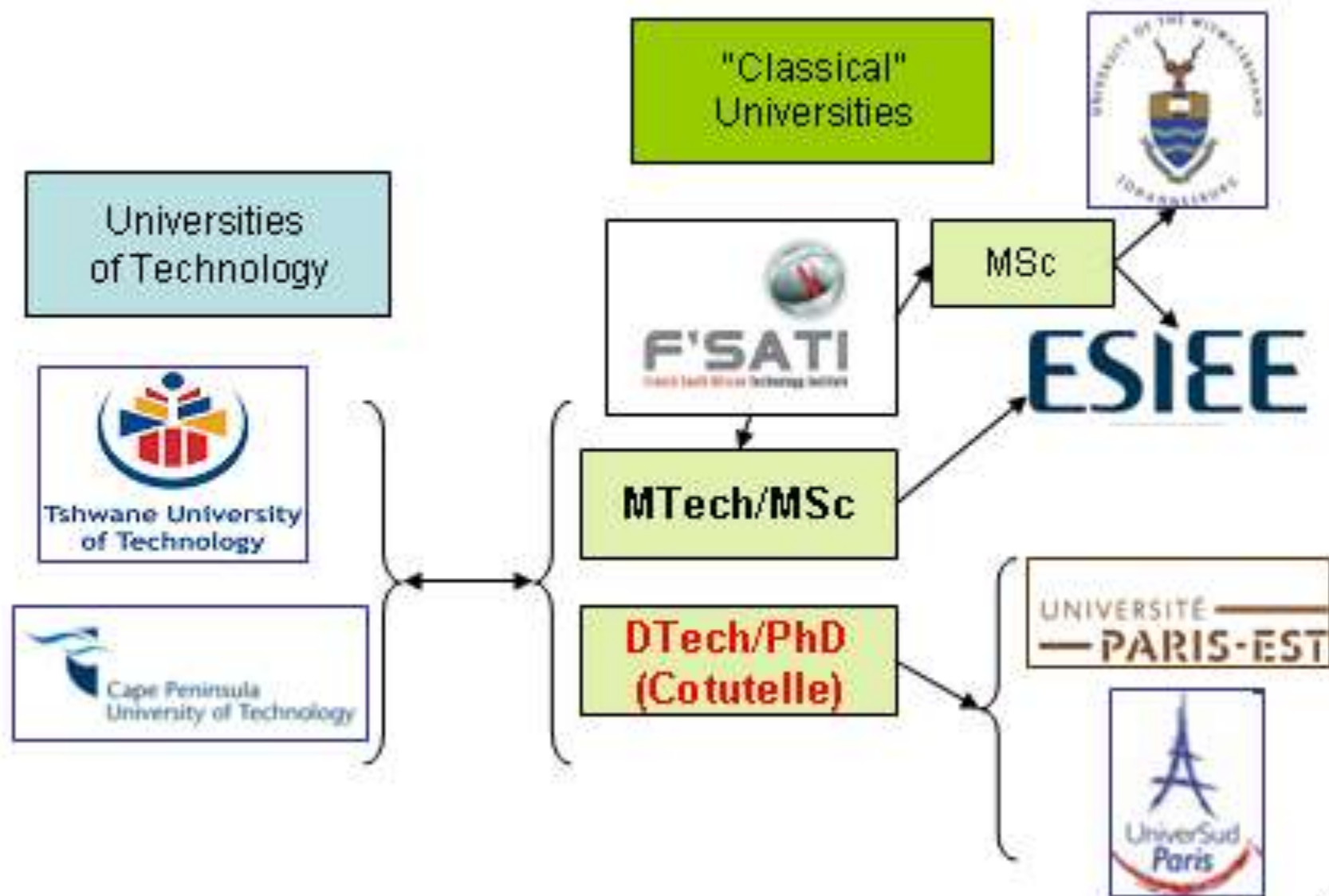
- Link between **training** and **research** for cooperation
(Master 2, Doctorate) → **sustainability**
- Link between **fundamental** and **applied** research →
patents, spin off enterprises
Joint doctorate university-enterprise
- Opportunities for **Post-doctoral positions**
French, European: Marie Curie actions,
with reintegration grants!
- **International Partnerships:** Doctoral schools (**Erasmus Mundus II**), Doctoral colleges, laboratories, universities



example of University Paris-Sud 11 (Orsay)

- **28 000** students
 Science, Health and Technology
 Law, Economy, Management - Sports
- **120 laboratories**, **15 Doctoral Schools**
- **2600** doctoral students, **20%** foreign,
 5% cotutelle
- **500** thesis defences each year
- **3 Nobel prizes (Physics)**, **3 Field medals last 15 years**

F'SATI: French South African Institute of Technology



African Institut for Mathematical Sciences-Muizenberg

Universities of Stellenbosch, Western Cape, Cape Town
Cambridge, Oxford, Paris-Sud 11

