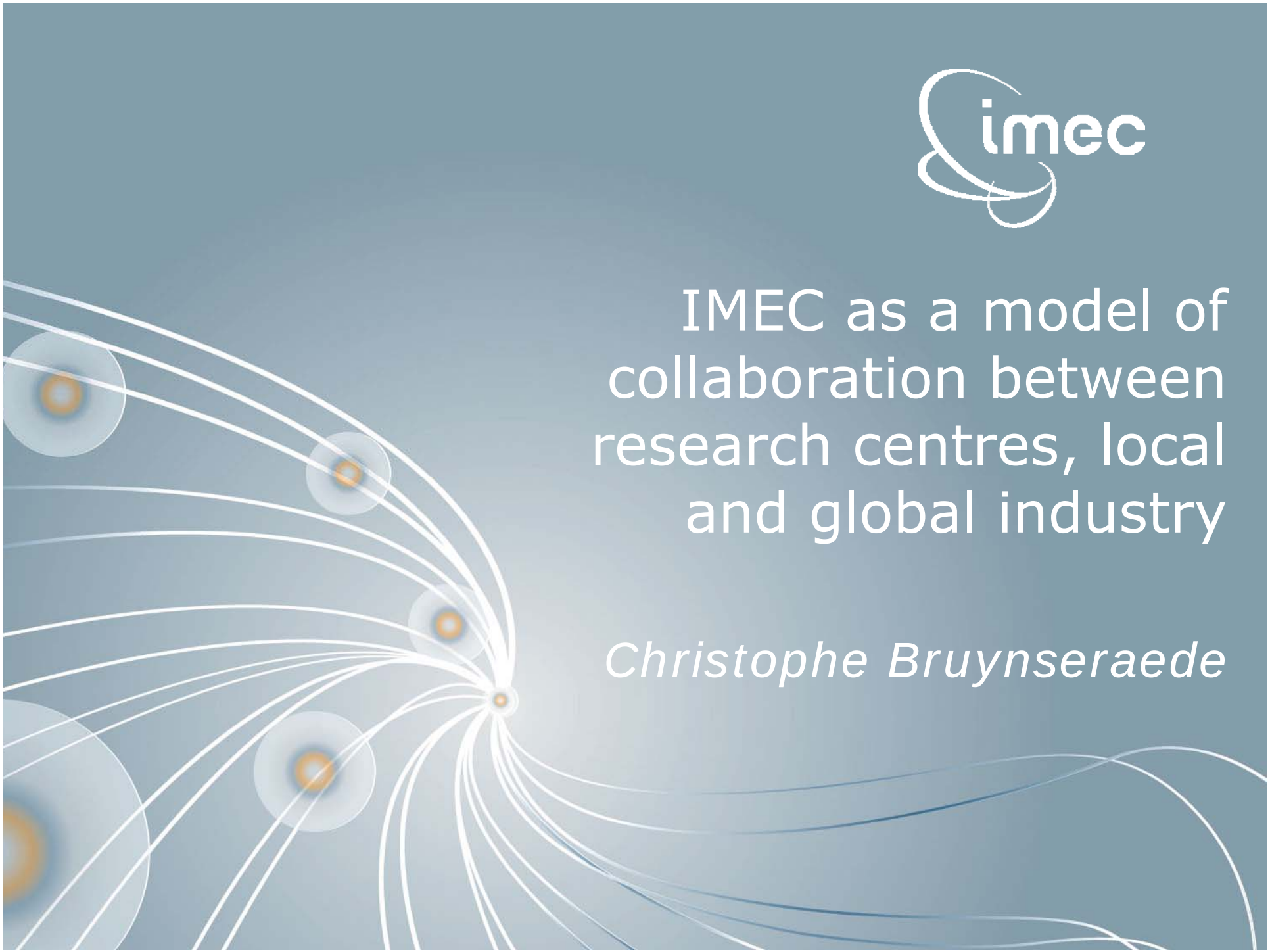


IMEC as a model of collaboration between research centres, local and global industry

Christophe Bruynseraede

IMEC Campus Leuven

“ Interuniversity Micro Electronics Centre “

IMEC

Europe's largest independent research center in nano-electronics and nano-technology

Founded in 1984 by the Flemish Government as not-for-profit organization

Mission: to perform research and development, ahead of industrial needs by 3 to 10 years, in microelectronics, nanotechnology, design methods and technologies for ICT systems

Performance criteria:

➔ being a worldwide center of excellence

➔ excellence in exploratory work

➔ with impact on local industry

IMEC 1984 - 2009

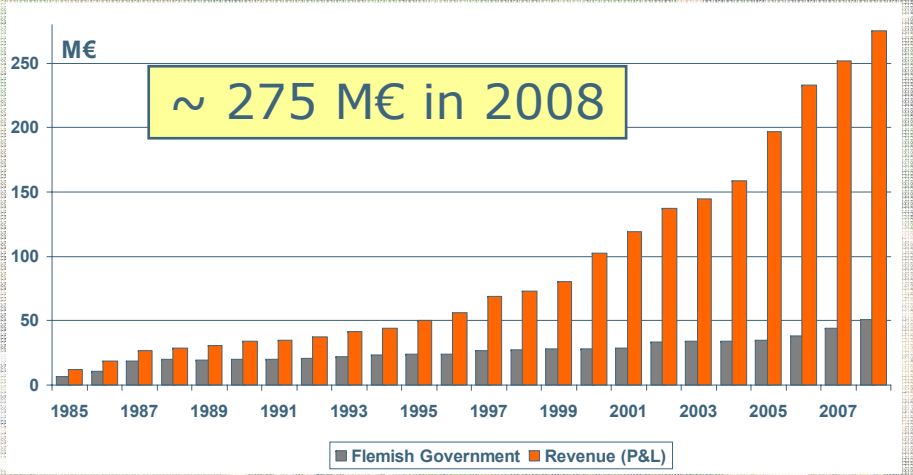
1984

Founded with the support of the Flemish government

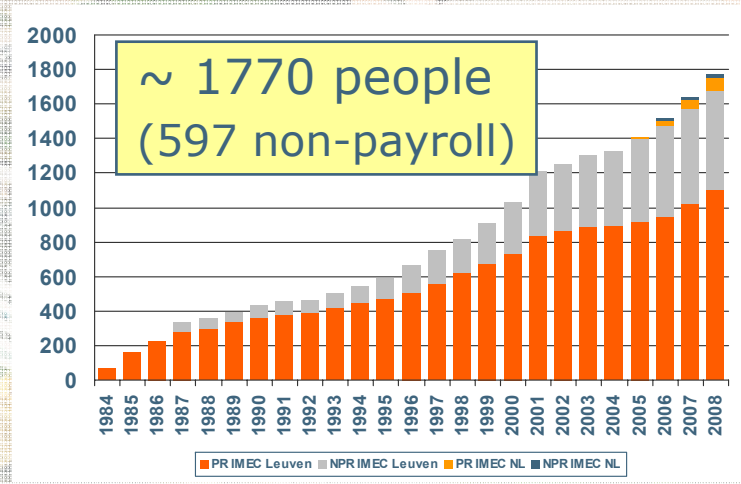
Initial investment: 62 M€

Initial # employees: ~70

Evolution Budget



Evolution Employees



2009

Largest independent microelectronics R&D centre in Europe

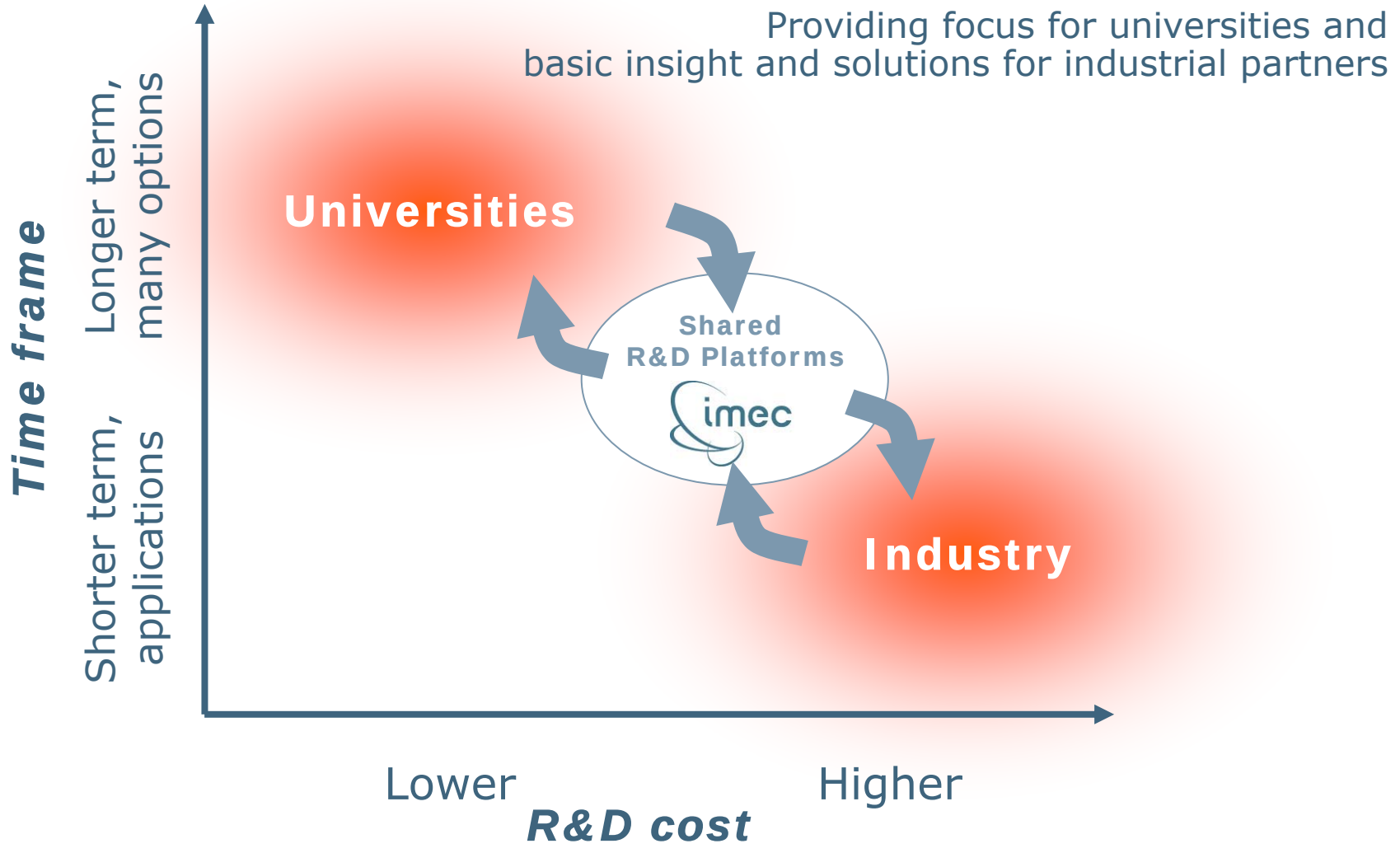
Revenue : ± 275 M€ (18% government grant)

Employees ± 1770

Collaboration with >500 partners

" Interuniversity Micro Electronics Centre "

IMEC as transformer



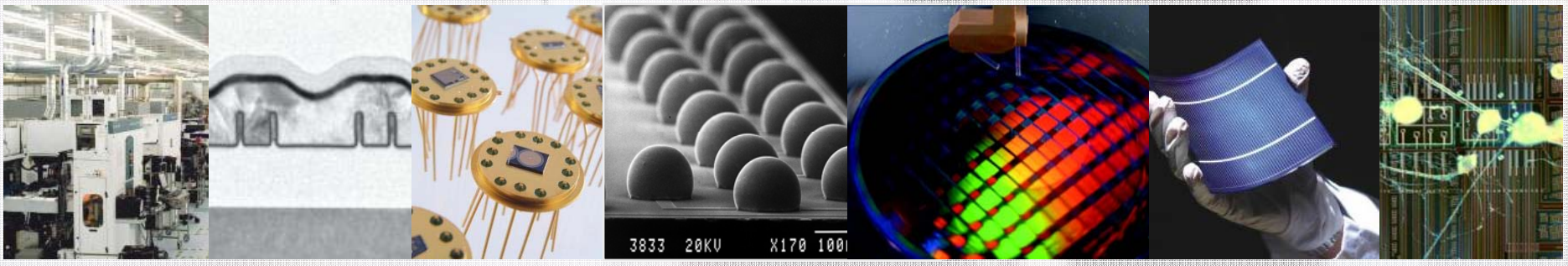
Providing key technologies for the most important societal challenges

→ IMEC's R&D

Process Technology (PT)

More in a chip: scaling transistors, more functions, more interaction with environment

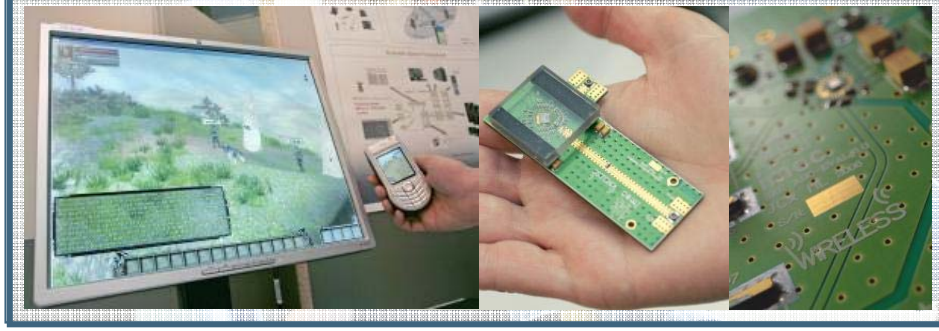
Semiconductor technology, processes, materials, packaging, solar cells, organic elektronics, …



Nomadic Embedded Systems (NES)

Efficient design of complex systems

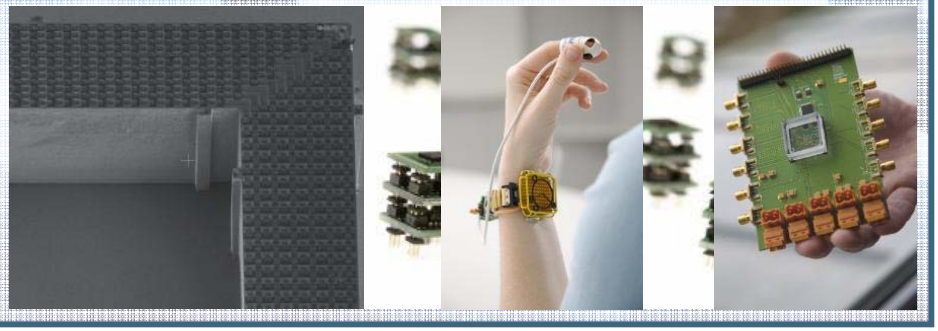
Design, multimedia, wireless communication, …



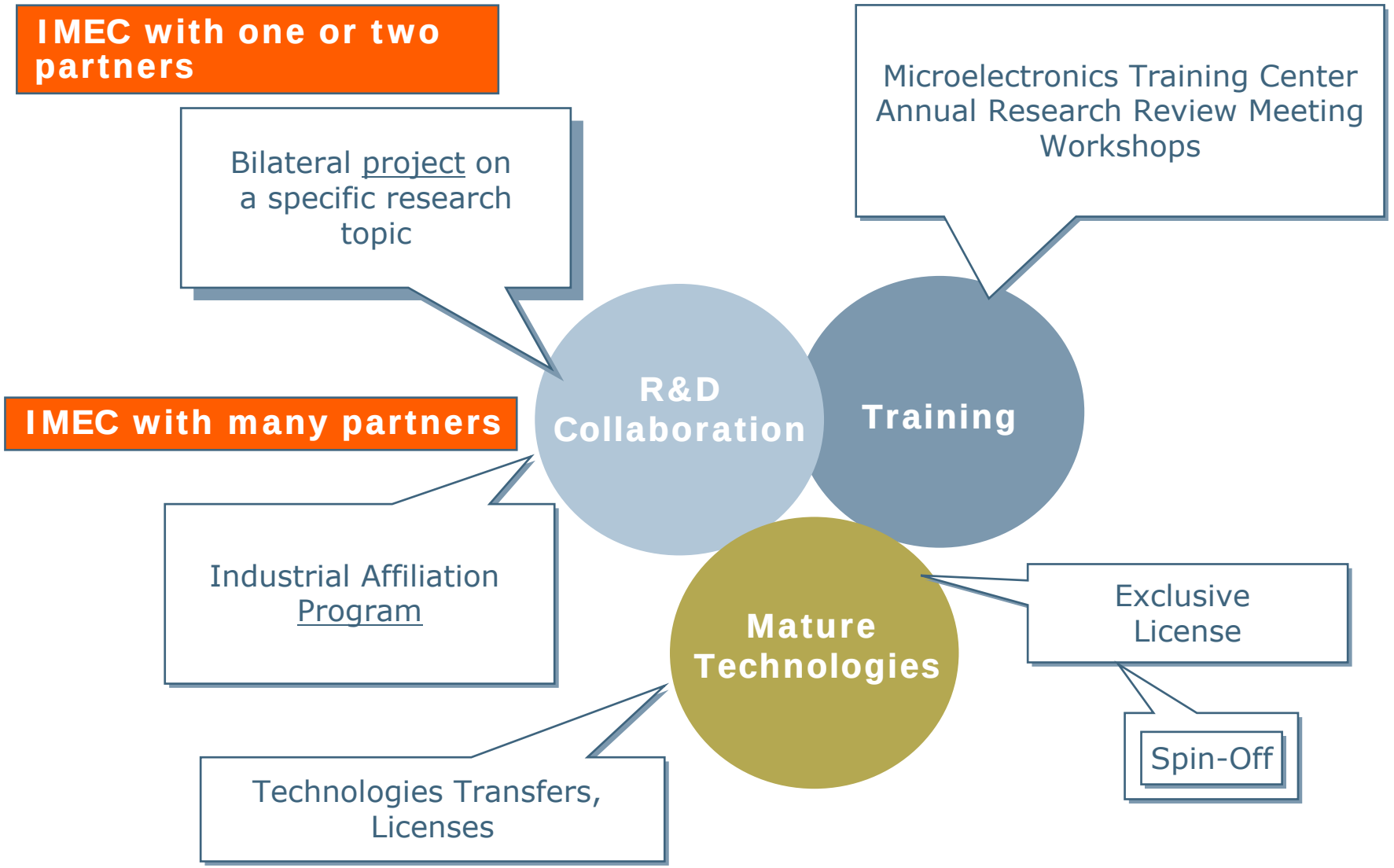
Wireless Autonomous Transducer Solutions (WATS)

Intelligent environment

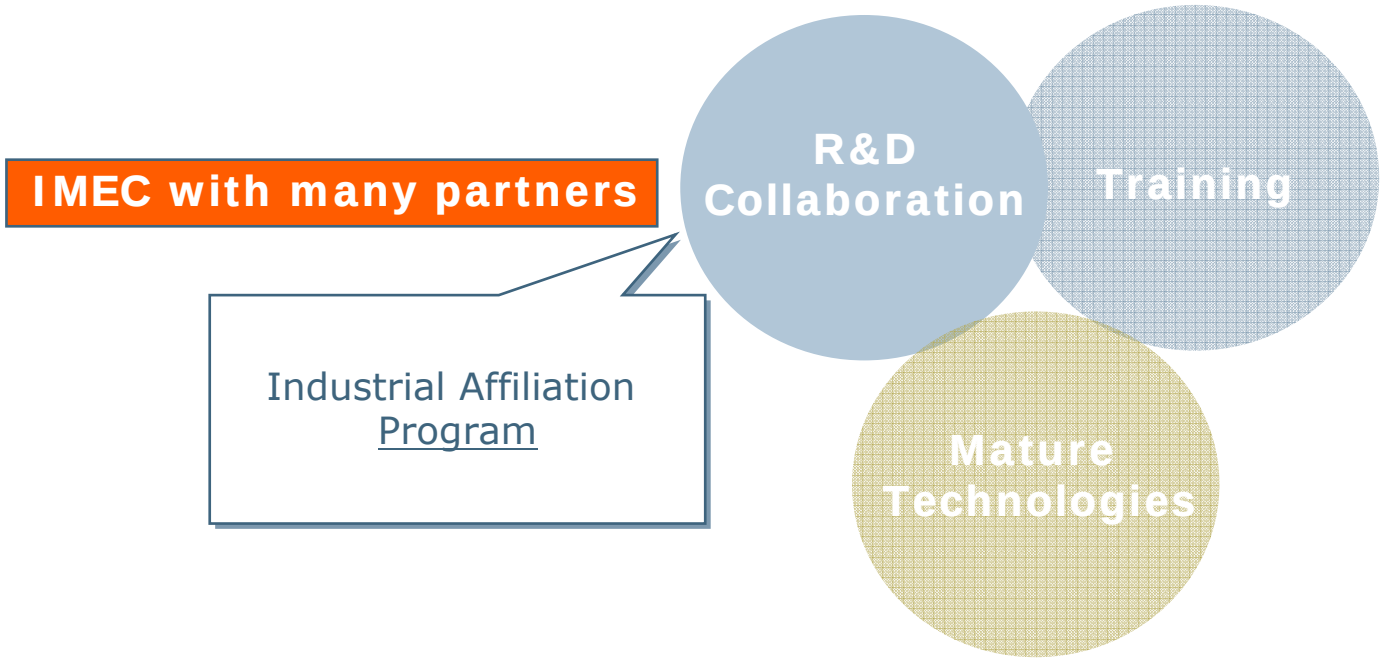
Energy harvesting, integrated systems,…



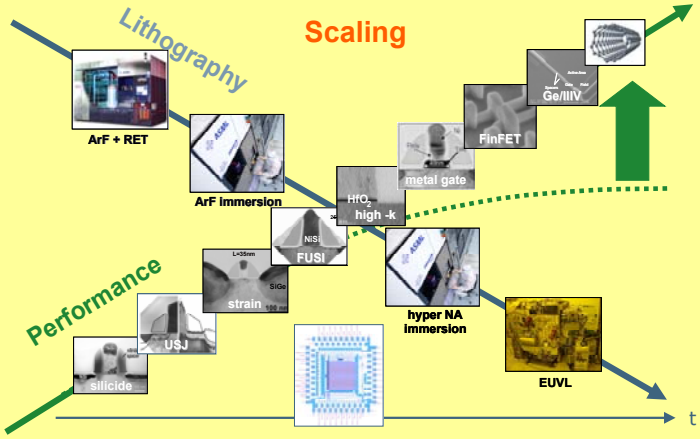
Types of industrial collaboration



Types of industrial collaboration: Program mode

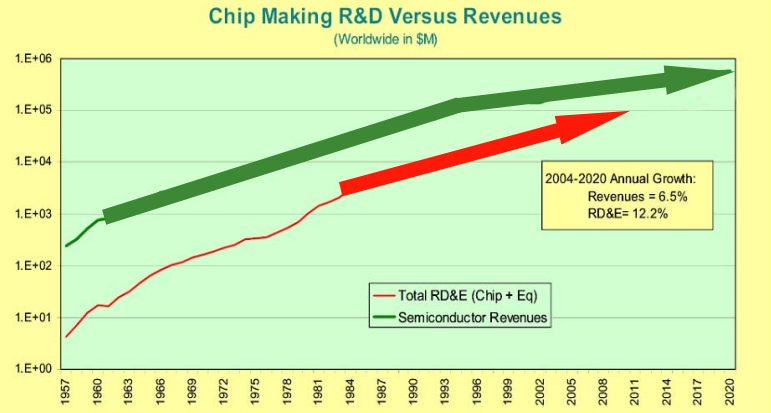


Need for research
has never been as high



Cost of research
is increasing drastically

The **reduced growth rate** of the industry can not sustain the required increase of research budgets



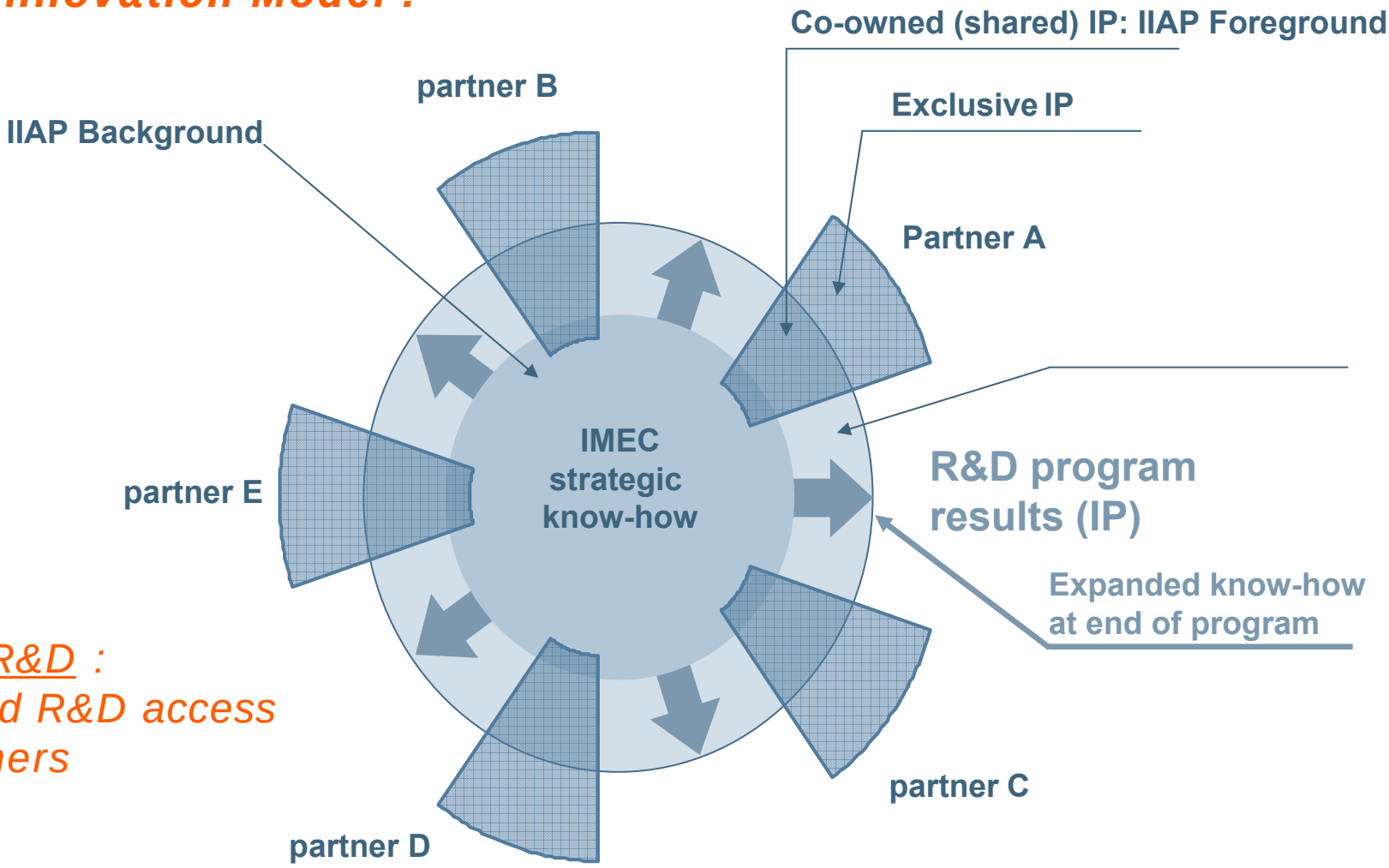
Large **research groups**
in IDM's are

- disappearing,
- reducing in size or
- migrating their activities to development

Research → Development | Manufacturing

IMEC helps companies to keep R&D budget under control → Industrial Affiliation Program

Open Innovation Model !

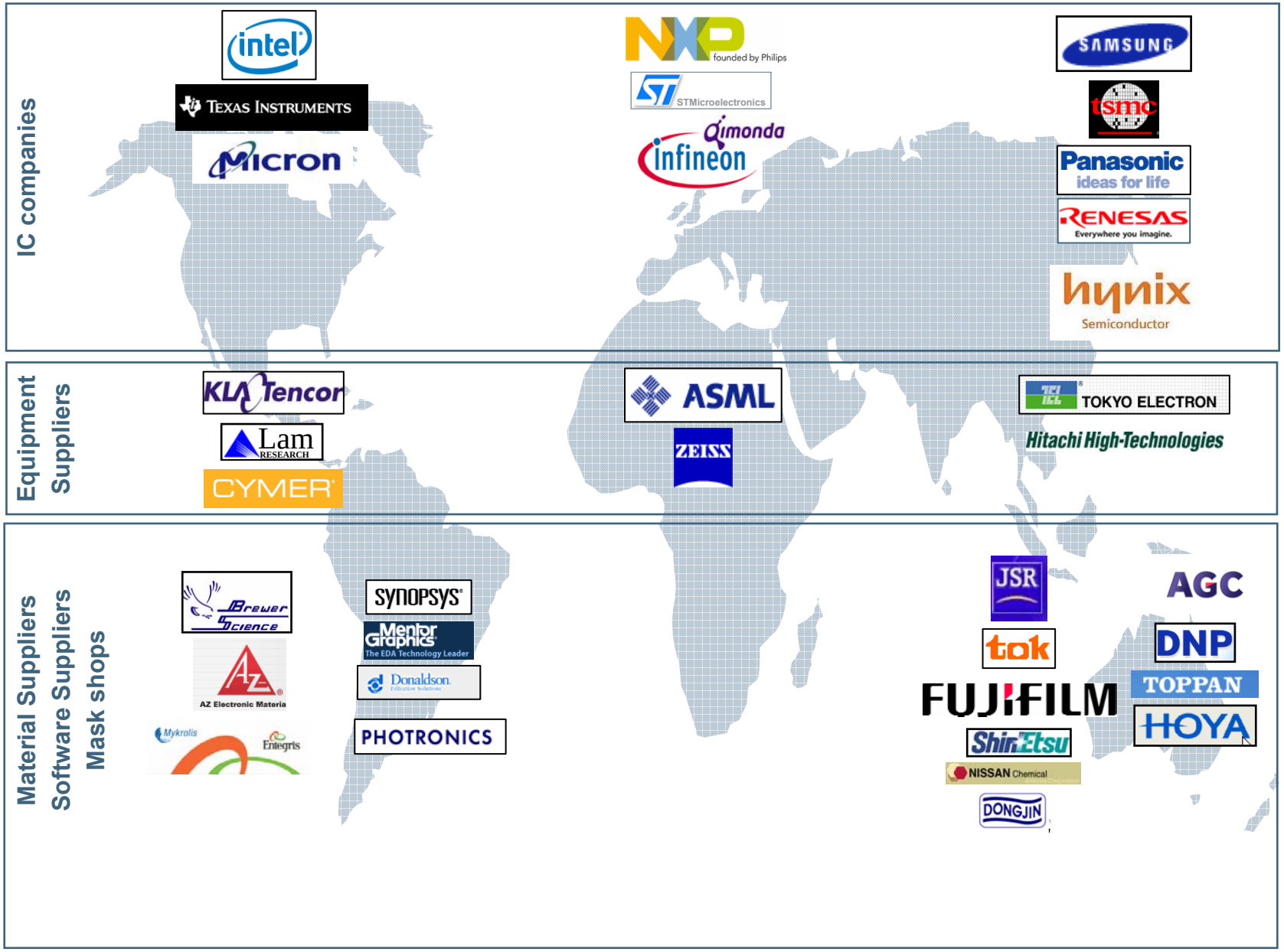


Shared R&D : increased R&D access for partners

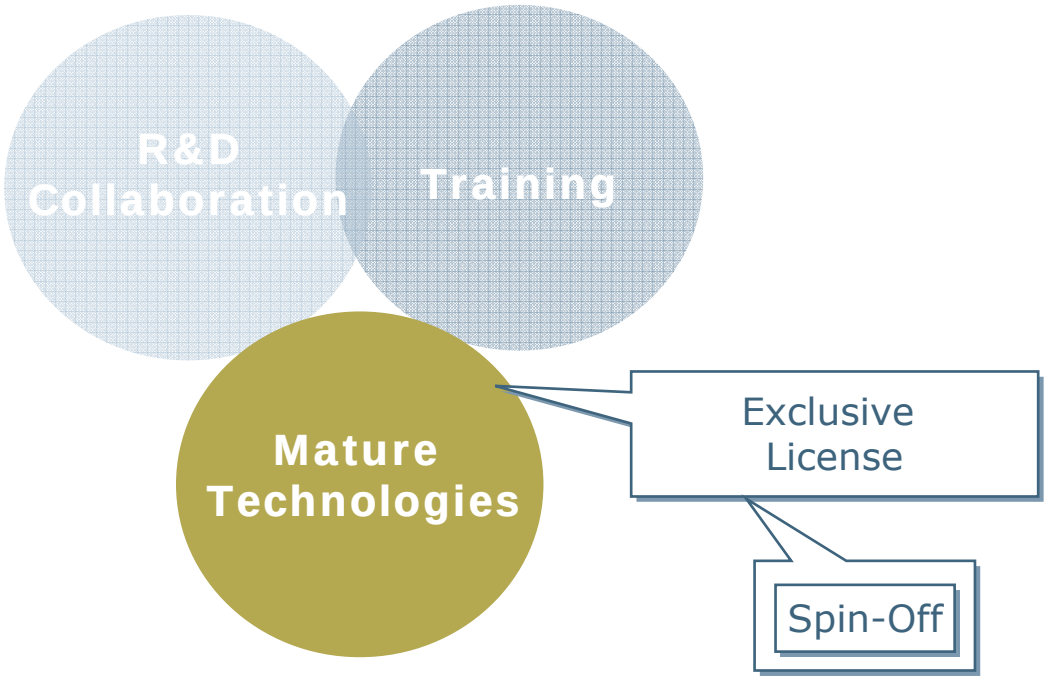
imec

Delegation of an industrial researcher to IMEC for a period of 1 to 3 years

Resulting in an ecosystem with worldwide participation



Types of industrial collaboration: spin-off



Spin-offs : IMEC's most visible impact on local industry

Spin-offs

INCUBATION

Trinean

ACTIVE SPIN -OFFS

SOLTECH
SUNNY WAY TO ENERGY
Photovoltech
AnSem
TARGET
COMPILER TECHNOLOGIES
XenICs
Partnering Your Infrared Solution
CoWare
PowerEscape
Low Power by Design
Septentrio
satellite navigation
VIVACTIS
screening and profiling
NGINEERING A SUSTAINABLE ENERGY FUTURE
GEMIDIS
INNOVATING DISPLAY TECHNOLOGY
Q-STAR TEST
The Current Test Company
easics
MAGWEL
ESSENSIUM

EXITS

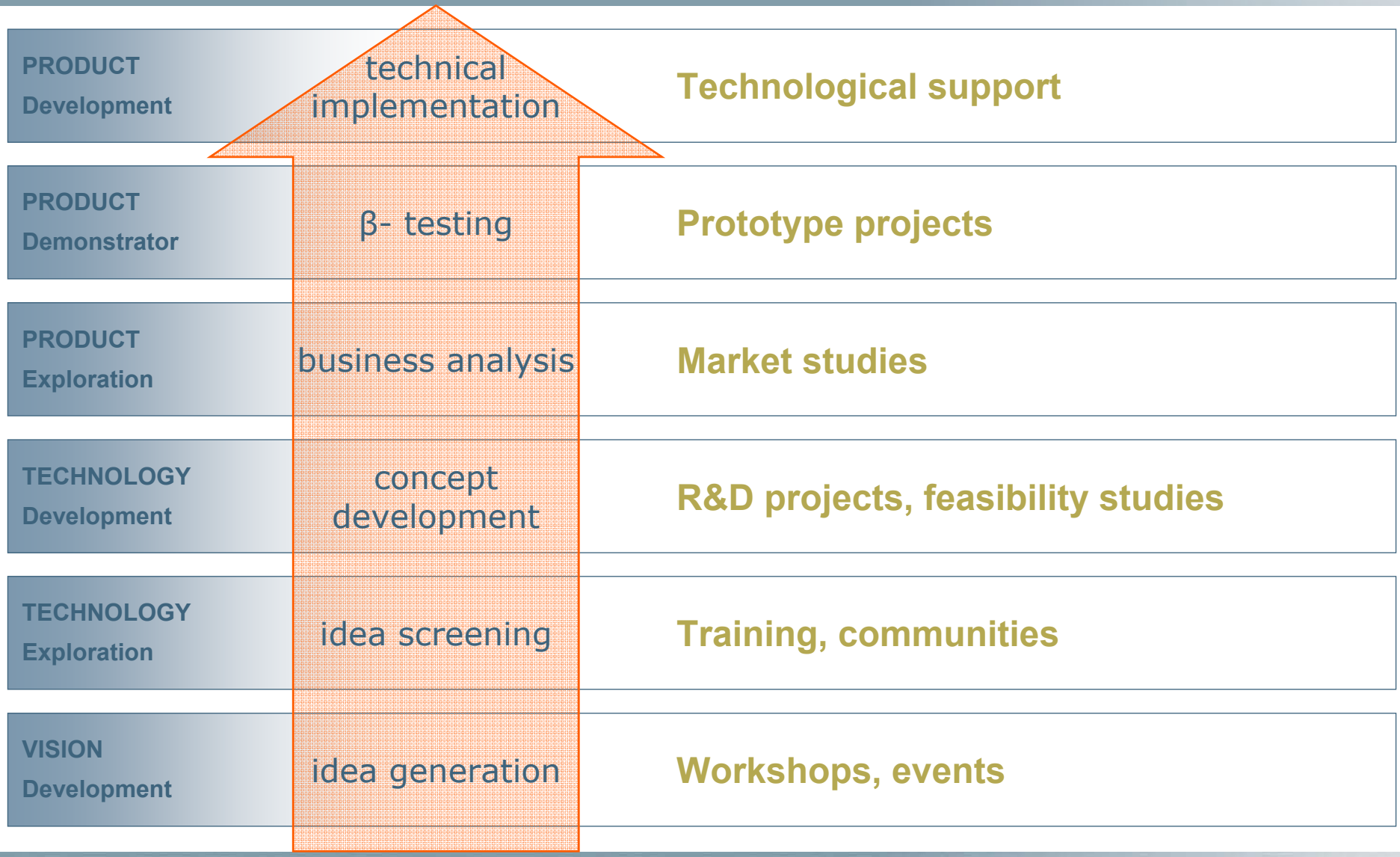
Sirius communications
Matrix Integrated Systems, Inc.
Fillfactory
image sensors
ACUNIA
DRIVES TELEMATICS
Frontier Design
easics

But certainly not the only impact…

- Initiation, coordination and support of a broad scope of Training and Service programs
  - Training
  - Design services
  - EUROPRACTICE
- Introduction and transfer of IMEC's expertise in the local industry by
  - Support of process and product innovation in existing companies with emphasis on SMEs with R&D affinity
  - Diffusion and introduction of IMEC's expertise to non-ICT companies by interaction with relevant organizations, networks, competence and knowledge centers

Collaboration with > 400 local companies !
(>50% SMEs)

From idea to product…

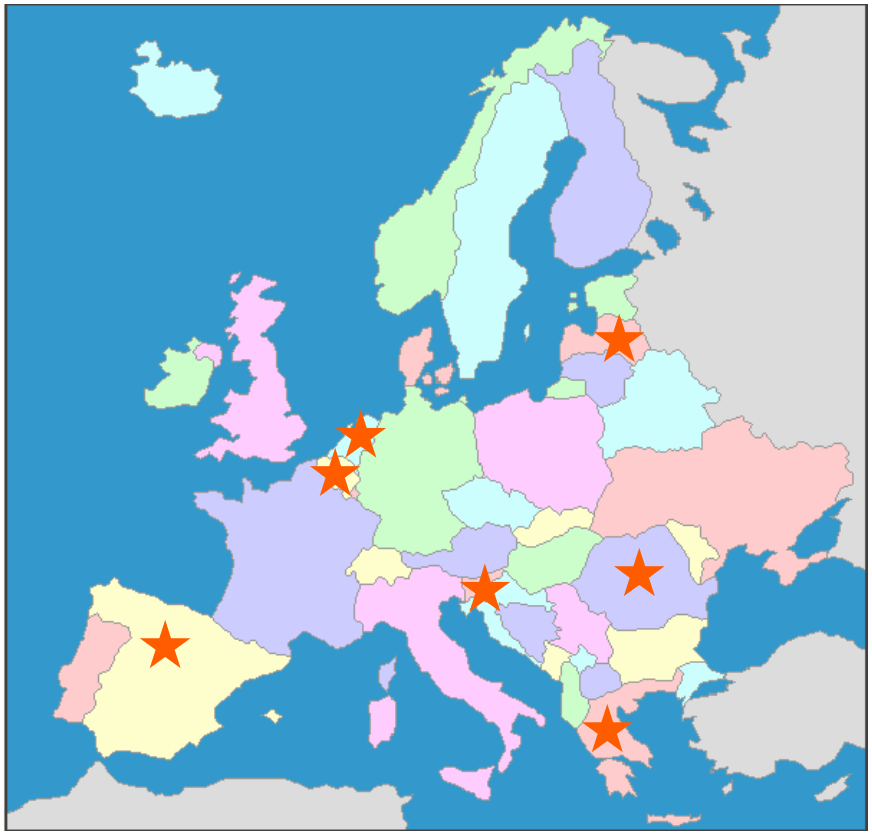


+ approach of SMEs on a European scale

Eureka MINATUSE

Micro & Nano Technology Use by SMEs

10 Core Partners : IMEC, VITO, IMEL, IMT, ISSP, SIRRIS, InnovaTech, RR&Co, Nanohouse, Grupo Dex



Strategic objective :
To enhance the competitiveness of European SMEs through :

- *stimulation and facilitation of SMEs' participation in European research initiatives*
- *integration of emerging micro and nanotechnology knowledge within SMEs' products*

MINATUSE *Micro & Nano Technology Use by SMEs*

Main tasks within the project :

- *to disseminate information about progress in European micro-and nanotechnology research towards SMEs*
- *to map micro-and nanotechnology in Europe*
- *to stimulate and facilitate the integration of SMEs in European R&D projects and consortia (task for IMT !)*
- *to create a European network of assistance for SMEs with micro-nanotechnology needs*

To be achieved :

- *yearly the integration of 50 European SMEs into European RTD projects*
- *yearly the organization of 10 national SME-oriented, MNT-related dissemination events*

IMEC model : conclusions

- Truly **independent**:

  IMEC defines its research programs and invites industry, institutes and universities to participate

- Unique business model based on **sharing cost, risk and IP**
- Very advanced **infrastructure**
- **Several disciplines** under one roof
- Strong network of **industrial partners** (>80% of budget)
- Strong collaborations with **universities** worldwide
- **25 years** track record


aspire invent achieve
imec