



Fostering Regional Innovation and Development through
Anchors and Networks: A Cross Regional Comparison in an
Evolving International Context.

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From local to global and back: Insights and challenges from STMicronics

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Outline

- **Aims and Scope of the Presentation**
- **STM Microelectronics Worldwide**
- **Effects of STM Catania and Grenoble on the two Nano-Clusters**
- **Evolution of STM in the Catania and Grenoble Nano-Clusters**
- **A Comparison btw STM Catania and Grenoble**
 - **Attributes of Anchors**
 - **Strategic Orchestration Processes**
 - **Global vs. Regional R&D Orientation**
- **Policy Implications**



Aims and Scope of the Presentation

To provide detailed empirical evidence for **policy building and testing on clusters** based on the comparison of the **anchoring roles** STMicroelectronics has played in Catania (Italy) and Grenoble (France)

To produce **new policy analysis on clusters** by building on the comparison of the **anchoring roles** STMicroelectronics has played, respectively, in Catania (Italy) and Grenoble (France)

STMicroelectronics Worldwide

- 
- 2010
Completed the sale of Numonyx to Micron
 - 2009
ST and Ericsson created ST-Ericsson JV
 - 2008
Deconsolidation of Flash, acquired NXP Wireless, announced the JV with Ericsson Mobile Platforms
 - 2005
New CEO
 - 2000
Became #1 European semiconductor company
 - 1999
Entered world's Top Ten semiconductor suppliers
 - 1994
IPO
 - 1987
Merger of SGS Microelettronica of Italy and Thomson Semiconducteurs of France

STMicroelectronics Today

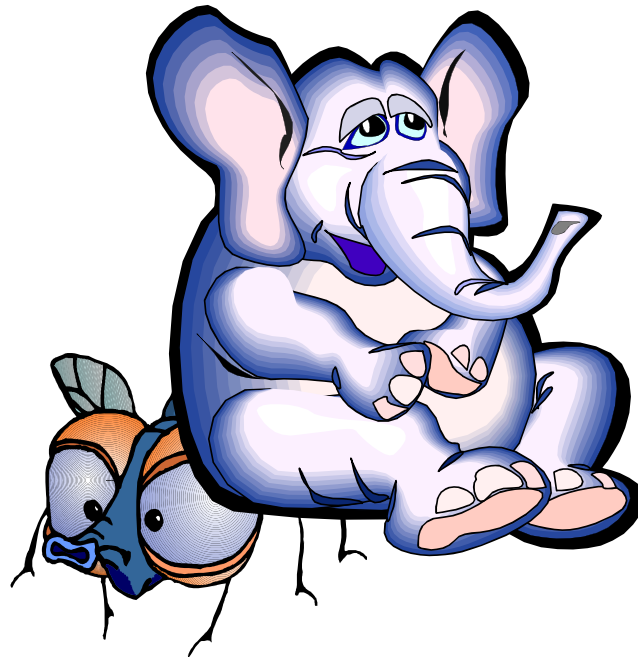
5th largest global semiconductor company – #1 in Europe *

Focus on multimedia applications, analog and power management

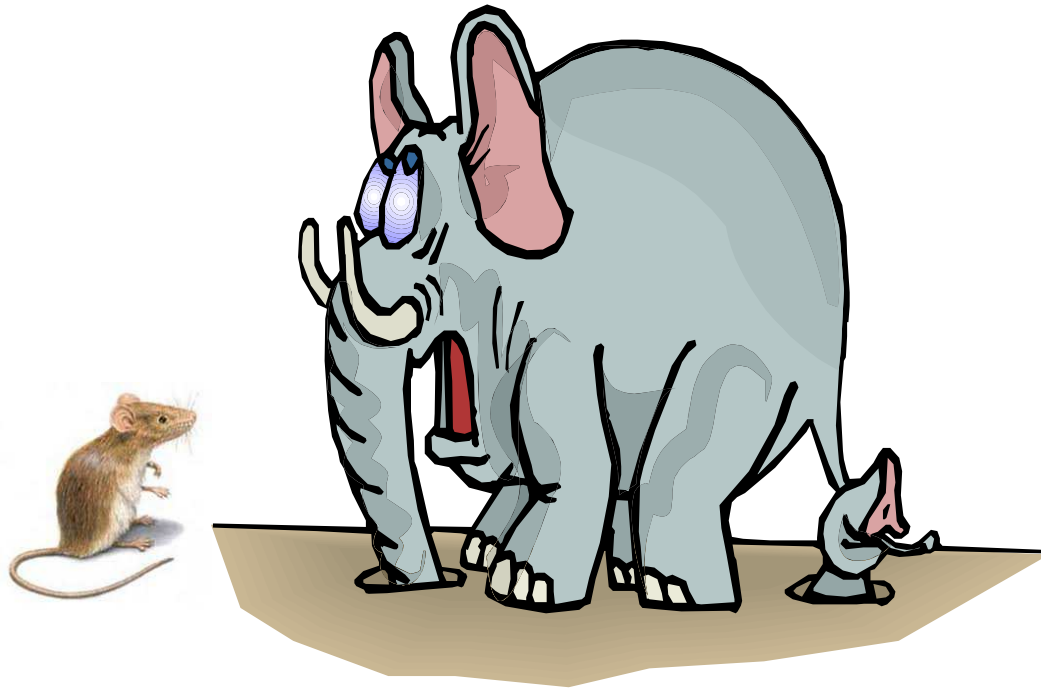
World leading positions in wireless, auto, industrial, consumer and computer peripherals end-markets

Key strategic alliances with global technology leaders including: Bosch, Ericsson, HP, IBM, Nokia, Samsung

Strong balance sheet: cash & cash equivalents of \$2.76B **



The inert Elephant



The alert Elephant

STMicroelectronics in the Catania and Grenoble Nano-Clusters

- STM Catania Site (Italy)

+4,000 employees

8 inch (200 mm) fab inaugurated in 1997
and known as M5

12 inch (300 mm) fab known as M6
(left uncompleted)

- STM Grenoble Site (France)

6,000 employees

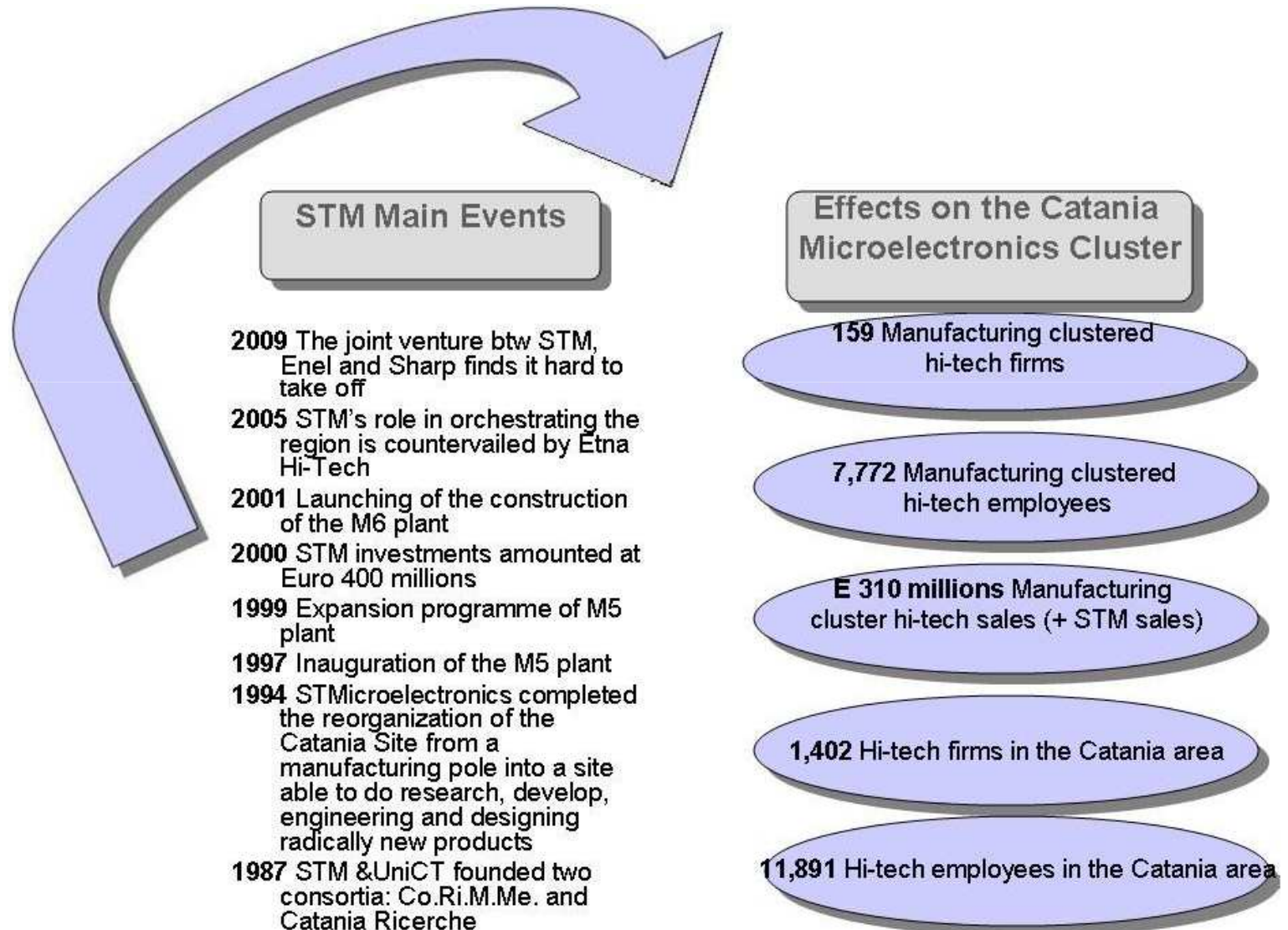
8 inch (200 mm) fab inaugurated in 1992
for the Crolles 1 Alliance

12 inch (300 mm) fab inaugurated in 2003
for the Crolles 2 Alliance



*STMicroelectronics is the **anchor tenant firm** in both Catania and Grenoble nano-clusters*

Effects of STM on Catania Nano-Cluster



Effects of STM on Grenoble Nano-Cluster

STM Main Events

- 2008** Nano 2012 alliance with IBM and Cea-Leti
- 2006** STM's role in orchestrating the region is countervailed by Minatec
- 2005** STM becomes member of Minalogic *poles de compétitivité*
- 2002** Alliance Crolles 2 with NXP Semiconductor and Freescale
- 1992** Alliance Crolles 1 with Philips
- 1990** Grenoble 92 partnership with CNET (France Telecom)

Effects on the Grenoble Microelectronics Cluster

2,270 researchers
in public research institution

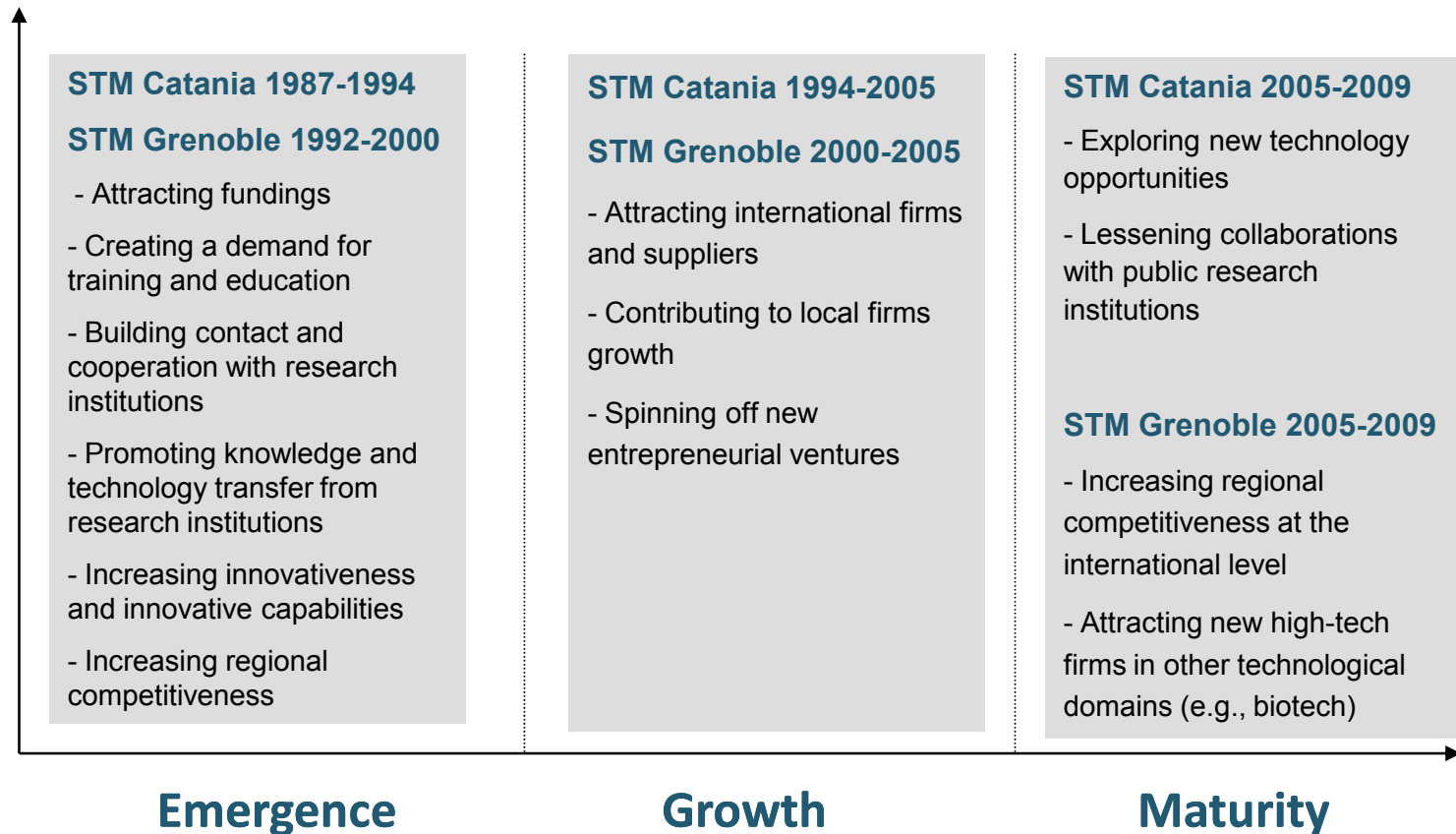
3,410 engineers and researchers involved
in the cluster's projects

E 270,000 million expenditures
from public agencies

E 403,000 million investment
from private firms

Evolution of STMicroelectronics in the Catania and Grenoble Nano-Clusters


Anchoring Roles Evolution



The Attributes of Anchors

A Comparison btw STM Catania and Grenoble

FEATURES	STM CATANIA	STM GRENOBLE (Alliance Crolles)
Anchor configuration	Single entity	Multiple entity
Nature of the alliance ties	External	Internal (within the alliance) External
Nature of organization	Private	Private
Organizational form	Subsidiary	Joint Venture
Governance Structure		
Market vs. Research Orientation	Mkt orientation	Mkt orientation
Sources and destination of funding	Private+Public	Private+Public



Global vs. Regional R&D Orientation

A Comparison btw STM Catania and Grenoble

FEATURES	STM CATANIA	STM GRENOBLE
Knowledge Span	Mainly global	Mainly regional
Attributes R&D centres	Relatively old Colocated with manufacturing	Relatively new Colocated with manufacturing and business management
R&D centre strategy	Unique role; there are no other centres with this capability profile	Not unique role; there are other centres with similar capability profile
Organizational structure •autonomy •integration	Low High	High High

Source: Our elaboration from Birkinshaw (2002)

Global vs. Regional R&D Orientation

A Comparison btw STM Catania and Grenoble

CROLLES & ROUSSET (France)

- Technology Transfer & Development:
 - CMOS Core logic
 - CMOS logic derivatives:
RF, Analog, eDRAM, eNVM
 - CMOS Imaging , EEPROMs
- Central CAD & Design Solutions
- Wireless, Imaging, Consumer BU's
- 200mm & 300mm Manufacturing

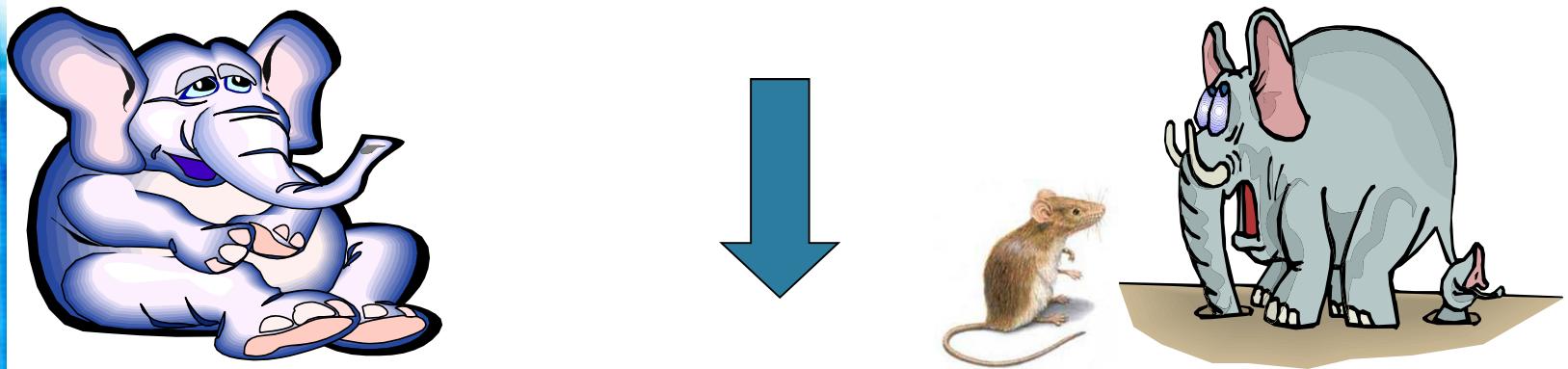
TOURS (France) & CATANIA (Italy)

Technology Development & 8" Manufacturing:

- Advanced Power (Rectifiers, MosFets)
- New energies cells (micro fuel cell, solar, thin films batteries)
- Biotechnologies & healthcare
- Integrated active & passive devices, heterogeneous integration
- Specific CAD & Design Solutions
- Industrial, Analog, MEMS BU's

Policy Implication (1)

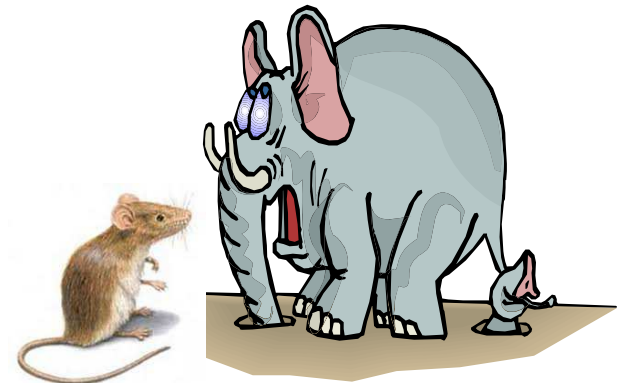
*Anchor tenant firms contribute to **cluster rejuvenation** by bridging with other firms and research organizations in different clusters*



*Governments should provide the cluster with a **superior research context** (e.g., R&D-related infrastructure and dedicated funds), as well as foster **knowledge diversity and intensity** in order to enhance both regional attractiveness and innovation*

Policy Implication (2)

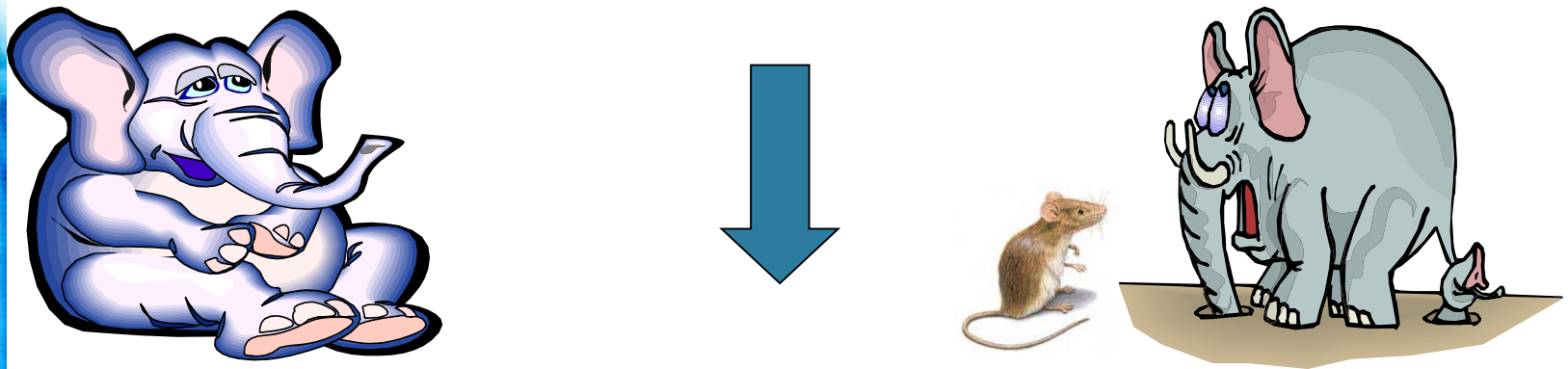
*Anchor tenant firms **seek opportunities beyond the cluster boundaries***



*Governments should facilitate the process through which **clustered firms seek excellence globally** where it is available and acquire global visibility by means of producing patents and publications*

Policy Implication (3)

Anchor tenant firms are usually MNCs connecting local clusters to global resources and capabilities



*Governments should facilitate **international networking** and partnerships among internationally clustered firms*

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