



## Tuscany Region



# The experience of Tuscan networks for excelling innovation: the role of the University

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***MARI Research group***

# Regional project SDP action 1.7.1 2000-06 *“Benchmarking and Foresight Networks for Technology Transfer and Innovation”*

**Objectives:** creation and consolidation of networks of firms, research centres, service centres, and public authorities for the development of technology transfer and the spread of innovation in sectors offering significant potential for industrial research and development

**Budget:** 4.500.000 (100%)

**36 Funded networks:** Eligible Activities → Technology associated with typical sectors of Tuscan economy: goldsmith, chemicals, pleasure boats shipbuilding, shoe, stone, textile-clothing, mechanics, automotive

**Others activities:** 1) technology for the development of formal innovation, 2) ICT and their applications, 3) biotechnology, including technology for medical diagnostic, 4) technology for cultural heritage, in particular the conservation of cultural heritage; 5) technology for the reduction of productive system pressure on the environment.

## **8 Technological axes:**

- 1) ICT for modelling, design and manufacture processing
- 2) Micrometrics and Nanometrics
- 3) New materials
- 4) Optoelectronics
- 5) Mechanics and robotics
- 6) Infomobility
- 7) Telecommunication networks, data transmission, information services and applications
- 8) ICT for Life Sciences

# MARI Project

## Monitoring and Analysing of Innovative networks in Tuscany

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Prof. Lorenzo Zanni (University of Siena)

### Activities of the MARI project:

- Tutoring the 36 networks during the project activity
- Stimulating the synergies on a systemic way
- Making network activities more effective
  
- Underlining the role of universities in each network
- Analysing the tribute of the university system to industrial sectors observing real outputs
  
- Evaluation of the progress of the whole measure and of the results
- Analysis of new industrial organisational forms
- Analysis of technology transfer paths
- Benchmarking and foresight activities

# Funded Projects: Technological axes per industries

Industry of application	Technological axes								Total
	1. ICT for modeling, design and manufacture processing	2. Micrometrics and Nanometrics	3. New materials	4. Optoelectronics	5. Mechanics and robotics	6. Info mobility	7. Telecommunication networks, data transmission, information services and applications;	8. ICT for Life science	
Agro-food	TASTE			GRADITO					2
Environment				REDIMI			RIDUCO		2
Biotech								TLS net	1
Shoe	LEATHER-IN		LEATHER-IN		TEST		LEATHER-IN, TEST		2
Chemicals					INNOWAVES				1
Stone	TI-POT		INNOMECA		INNOMECA, TEST		Trasla, TEST		4
Logistic						NEMO, TTS-nT, TECMO B			3
Mechanical	Inno-tex		Retrain		Rertrain,RECNO MA		TMC, TEC-MOB		5
Shipbuilding	Tecna				Tecna		Tecna, Nautech, Elena		3
Optoelectronics				OPTONET					1
Goldsmith	MIDA, T2MP_NET	MIDA		T2MP-NET, MIDA					2
Life science							NADIA	TLS net	2
Textile-clothing	Macro-Inn, Isatem		Natural-tex	Isatem	INNOWAVES		Isatem		4
Multi-industries	PROM-ITT	NANO-RSS,PROM-ITT	Retenuma, PROM-ITT	PROM-ITT	PROM-ITT, TEST	PROM-ITT	GOAL, PROM-ITT	PROM-ITT	6
<b>Total</b>	<b>10</b>	<b>3</b>	<b>6</b>	<b>6</b>	<b>9</b>	<b>4</b>	<b>14</b>	<b>3</b>	

# Regional project SDP action 1.7.1 2000-2006 “Benchmarking and Foresight Networks for Technology Transfer and Innovation”

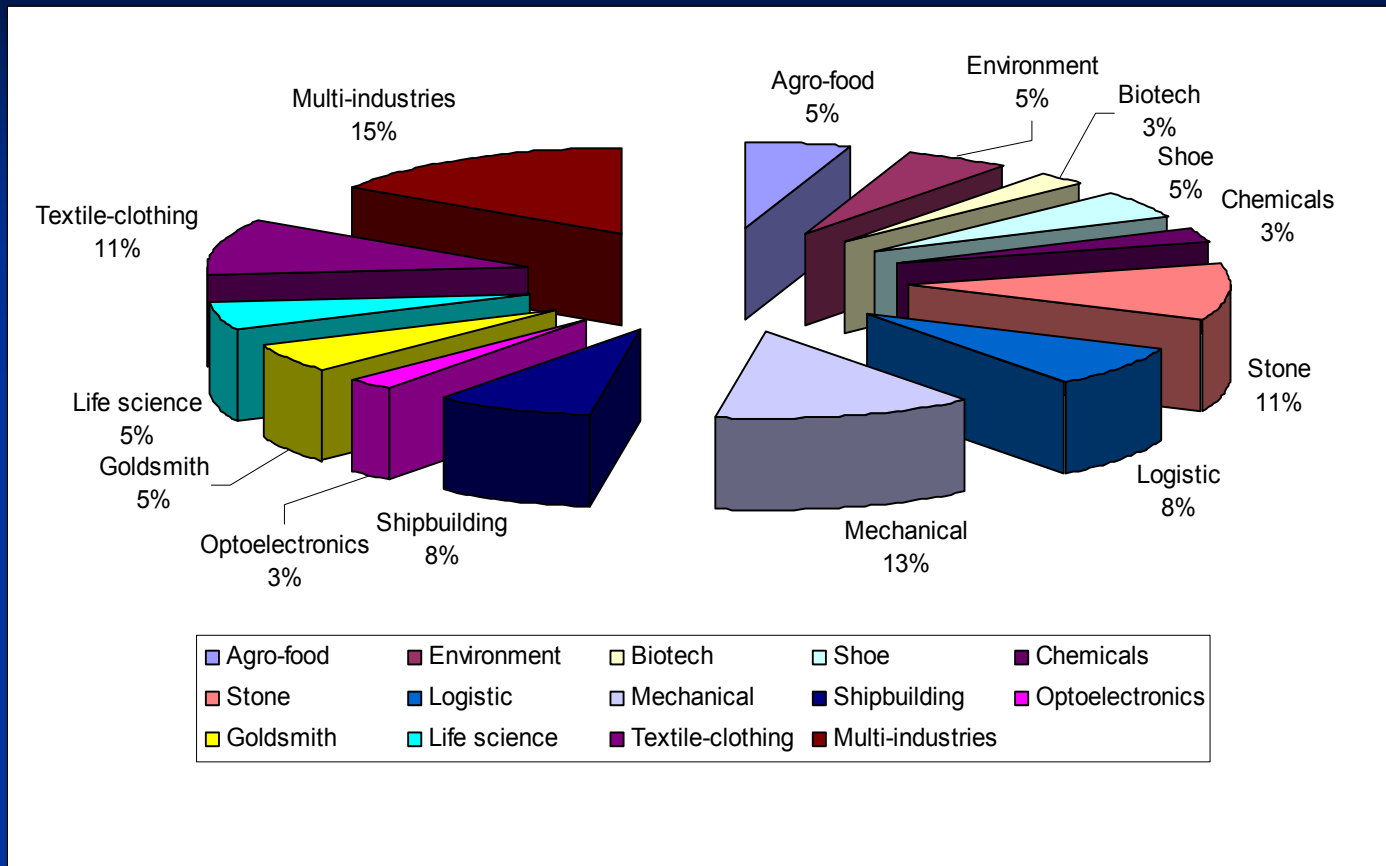
## Typologies of actors (36 network projects)

ASSOCIATION	CHAMBERS of COMMERCE	RESEARCH CENTRES	SERVICES CENTRE	TERRITORIAL BODIES	BIG ENTERPRISES	SME	TOTAL ACTORS
133	30	90	45	158	7	368	831



- 80 Universities (laboratories, departments, etc) on 90 Research centers
- 9.6% of the total actors

# The 36 network projects per industry of applications



→ 53% of projects applications are in the Tuscan traditional manufacturing industries (shoe, goldsmith, textile, shipbuilding, mechanical, etc.)

# Networks of excellence

The “best projects” are defined in terms of:

- Territory
  - Strongly embedded in Tuscany traditional industries
  - Existence of a local development plan
  - Revitalisation of industrial clusters and industry
- Network:
  - Network management
  - World-class scientific and technological competencies
  - Start-up opportunities and entrepreneurship
  - Sustainability of the project
- Innovation
  - Transversal technological applications
  - High innovative content
  - Development of a wide set of new industry-research connections
- Role of university

# Networks of excellence

Project	Technological axis	Sector	Excellence
NANO-RSS	Micrometrics and Nanometrics	textile, agro-food, Ceramic and marble, pharmaceutical	<ul style="list-style-type: none"> <li>■ Network management</li> <li>■ Positioned in a fast growing transversal technological field</li> <li>■ Strongly embedded in Tuscany traditional industries</li> </ul>
PROM-ITT	Multi-sectorial	All Technological axes	<ul style="list-style-type: none"> <li>■ Development of a wide set of new industry-research connections</li> </ul>
RETENUMA	New materials /	Injection moulder of plastic material (main applications proposed: scooter components and helmet manufacturing, small household-electrics domestic applications)	<ul style="list-style-type: none"> <li>■ Network management;</li> <li>■ Oriented toward plastic recycling and environmental preservation;</li> <li>■ Strongly embedded in Tuscany traditional industries;</li> <li>■ Transversal industrial applications.</li> </ul>
T2MP_NET	Optoelectronics	Precious metals	<ul style="list-style-type: none"> <li>■ Network management</li> <li>■ Unique combination of world-class scientific and technological competencies and entrepreneurship</li> </ul>
TECNA	ICT for modelling, design and manufacture processing - Mechanics and robotics - Telecommunication networks, data transmission, information services and applications	Shipbuilding	<ul style="list-style-type: none"> <li>■ Excellent research centres clustered in the project</li> <li>■ High innovative content</li> <li>■ Fast growing industry</li> </ul>
TEST	ICT and robotics	Footwear, marble, mechanics.	<ul style="list-style-type: none"> <li>■ Local development plan</li> <li>■ Revitalization of industrial clusters</li> </ul>
TI-POT	ICT for modelling, design and manufacture processing	Ornamental stones	<ul style="list-style-type: none"> <li>■ Network management and entrepreneurship of the focal actor</li> <li>■ Revitalization of sectors</li> </ul>
TLS	ICT for Life Sciences	Biotechnology	<ul style="list-style-type: none"> <li>■ Start-up opportunities in high-growth industries</li> </ul>



# Networks of excellence

## Typologies of actors (8 network projects)

PROJECT	ASSOCIATION	CHAMBERS of COMMERCE	RESEARCH CENTRES	SERVICES CENTRE	TERRITORIA L BODIES	BIG ENTERPRISE S	SME	TOTAL ACTORS
NANO-RSS	1	0	5	2	5	1	18	32
PromITT	1	0	3	2	2	0	11	19
RETENUMA	0	2	3	2	2	0	9	18
T2MP	2	1	2	1	1	0	10	17
TECNA	6	2	4	2	2	0	11	27
TEST	5	2	4	2	3	0	9	25
TI-POT	2	0	5	1	7	0	16	31
TLS	0	1	1	0	2	0	7	11
<b>Total</b>	<b>17</b>	<b>8</b>	<b>27</b>	<b>12</b>	<b>24</b>	<b>1</b>	<b>91</b>	<b>180</b>



- 23 Universities (laboratories, departments, etc) on 27 Research centers
- 15% of total actors

# The role of the Universities

## A contribution to excellence (1)

- **Four Universities in Tuscany:** University of Florence, Pisa, Siena and Sant'anna University School in Pisa
- **Relationships also with University outside the region:** University of Bologna, Polytechnic of Turin (TI-POT Project)
- **Substantial participation to the project:**
  - 2 Millions € requested by Universities partners on total 7 Millions € requested
  - In some cases almost 50% of the project was done by a University partners
- **Central role in innovation and technology transfer**

# The role of the Universities

## A contribution to excellence (2)

### ■ High competencies and specialisation:

- Leading actors in the project of a technology and scientific park in the area of Florence.
- Leading actors in the creation of the centre of services on Virtual Realities (Sant'Anna).
- High competencies in ICT's (MICC - University of Florence)
- High competencies on wireless systems and VOIP-MOIP (Voice and Multimedia over IP) broadcast technologies (Sant'Anna)
- High competencies in design (Architecture)

### ■ Different tasks for each projects:

- Cooperation in the creation of a regional data base on innovation (TEST & TECNA)
- The Tech Transfer (Liaison) Office of the University of Siena has a record track in supporting researchers to fill patents, apply for R&D grants, spin off companies, and establish collaboration with public and private institutions worldwide (TLS)
- Development of specific nano-technological applications in the pharmaceutical and medical industries (NANO-RSS)

# Conclusive remarks

## The overall background

- Overall results highlight the importance of the manufacturing industry in Tuscany embedded in industrial districts and the new ways of revitalisation of declining industrial districts/traditional sectors through new technologies
- The territory (Tuscany) and the industrial district model, as a shared system of (social) values, constitute the connective tissue for the renewal of a declining traditional sector in the context of international competition.

# Conclusive remarks

## The role of Universities

- The University system seems to be more effective when operating in a systemic way, as a “Science Institution” for technological clusters, industrial districts and business networks, helping the business sector in developing enabling contents with larger effects on industries and innovation systems rather than on specific firms.
- On the other side the economic system with its capability of generating profit and the chance of launching new research program can be “knowledge partners” for Universities cooperating in building a new creative, innovative and skilled generation able to answer effectively to the global challenges.
- With regards to public sector, universities can be helpful in decision making support activities, cooperating in enforcing the regional innovative and creative environment and overall paying attention to the sustainability of the technological transfer activities, comprehending the demand of innovation and the possible paths and scenarios to be implemented.