

**Intermediate institutions for interactive learning
processes in a “governance” perspective:
the case study of aeronautic industry in Campania region**

Riccardo CAPPELLIN

University of Rome “Tor Vergata”

e-mail: Cappellin@Economia.Uniroma2.it

Immacolata CARUSO

Institute of Studies on Mediterranean Societies

e-mail: imma.caruso@issm.cnr.it

Giuseppe PACE

Institute of Studies on Mediterranean Societies

e-mail: giuseppe.pace@issm.cnr.it

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1. The role of institutions in the process of interactive learning

- **Learning processes involve groups of individuals, call for the development of links, networks and social and cultural institutions and conventions among different actors, implies the co-ordination of the interaction process.**
 - **The creation of new connections or the reinforcement of existing connections implies the compatibility with other actors, the success in the adaptation and the development of appropriate routines and institutions.**
 - **Institutions allow to save the limited cognitive capacity of individuals and organizations and facilitate the process of reciprocal integration**
 - **The role of institutions is that to create new routines or baseline, which insure the adaptability of connections between actors.**
 - **The diffusion of knowledge and the process of innovation creation in a specific network or sectoral/regional/national innovation system depends on the “institutional thickness” of the innovation system to be considered.**
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2. The role of institutions in regional development

The behavior of institutions can lead to:

- generate external and internal **economies of scale**,
- favor **economies of scope**,
- reduce **transaction and production costs**,
- increase **learning and relational mechanisms**,
- improve **entrepreneurial capacity**,
- increase **trust** among economic and social actors,
- reinforce **networks and cooperation** among the actors.

Knowledge networks depends on the development of intermediate institutions:

- regional and local governments,
 - local credit organisations,
 - local education institutions,
 - labour agencies,
 - trade unions,
 - chambers of commerce,
 - industry associations.
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3. The concept of “governance”

- Since economic systems are complex and evolving, the main problem is that of organization or coordination, i.e., how to guarantee that the various involved actors will adopt a coherent behavior, so that they can jointly attain the desired aggregate result without dissipating resources
 - Governance is the challenge of **steering and positioning complex organizations**
 - Governance is made by **complex policy networks**
 - The expression **governance** is used with respect to **decision making systems**
 - The decision making processes may include **forms of horizontal and vertical negotiation**
 - Economic development is stimulated in those territories with highly evolved, complex and flexible institutional systems **where a multilevel governance as a coordination mechanism is essential to assure cohesion, mutual comprehension and harmony between different agents**
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4. The characteristics of a learning process in a policy network

- Information flows through an interactive process and new knowledge is created through the combination of existing information and knowledge within a learning processes
 - Learning proceeds according to an evolutionary and adaptive processes, both dynamically (in time) and spatially (through regional diversification and integration).
 - Innovation is the result of decisions of the various interacting agents based not on the principle of substantive rationality, but rather on that of procedural rationality.
 - No complete sequence of decisions can be preordained
 - To achieve coordination, organizations need to learn rapidly
 - A good design of the organization procedures involving the interaction of the various actors is crucial.
 - The policy networks can be analysed identifying **the mutual density, the non-directional density, the value density** of actors' linkage, if they are based on **strong or weak ties** and whether these links are **fragmented or polarised**
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5. The role of the aeronautical industrial sector in the Campania economy

CAMPANIA

- Population= 10% of the total Italian population
- Regional GDP (1996- 2001) = 2,6% on average
- The region represents 25% of the product of South Italy, only 6% of the national economy.

The industrial structure

- Large public companies in strategic industrial sectors
- A large number of SMEs in traditional sectors
- The submerged economy is quite important in SMEs
- Rather impermeable to the diffusion of new technologies, and reluctant to abandon their small size

The aeronautical industry

- A long history (beginning of the XX century)
 - It represents one of the few high-tech industrial clusters existing in the Objective 1 regions of the European Union
 - All the large national enterprises have own plants in the region
 - It is composed by approximately sixty specialized firms and research centres
 - It has more than 10.000 employees and a turnover of more 500 million a year.
 - The sector represents 0,55% of the regional labour force (2002)
 - A minor role of the sector in the regional economy but a greater share of the sector on the regional value added
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6. The methodology of the research

The research investigates the governance dimension of the interaction process among the different local stakeholders within the aeronautic industry of the Campania Region

- institutional leadership
- attitude of the stakeholders
- existence of a “strategy”
- degree of institutional legitimacy
- spatial scope
- presence of exogenous factors

The selected sample

- ✓ 15 enterprises (25% of the whole regional sector, large firms and SMEs)
 - ✓ 20 non industrial organizations /four categories:
 - **Public Institutions**
 - **Research Institutions**
 - **Services organizations**
 - **Financial Institutions**
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7. A new perspective to regional innovation policy: the Territorial Knowledge Management (TKM)

The approach of TKM aims to insure the **governance of the interactive learning processes among the different local stakeholders leading to innovation**

Traditional innovation policies

- financing the individual firms
- providing financial incentive to R&D investments

TKM

- to promote the various factors which determine willingness and capabilities of firms in investing in an innovation strategy

According to the methodology of the TKM, an interactive learning process involving various local actors is promoted by actions working on six different levers:

- ✓ the existence of external stimulus,
 - ✓ the levels of accessibility between actors
 - ✓ their receptivity to external stimulus,
 - ✓ the creation of a local identity,
 - ✓ the expression of creativity,
 - ✓ the capability to govern the innovation process
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8. The existence of external stimulus: the stimulus by local large firms and a weak international openness

- SMEs lack the necessary competences to manage the knowledge and to adopt relevant innovations/Larger firms, and the large “prime” producers performing the role of leaders
- The awareness of the potentials and threats of the internationalization process is rather recent and still rather weak. Most of the relationships occur within a regional framework
- The strongest external relations have mainly an hierarchical nature
- The export propensity of the local firms is very weak

Innovation/an adaptive process of the firms/ external requirements of the clients/availability of external financing of R&D by public institution

VS

Innovation/ a deliberate strategy aiming to exploit external opportunities and to face the emerging threats of the globalization process

- (2001) Policy measures by Region favouring internationalization of the enterprises and the promotion of the trans-border and trans-national economic integration" / SPRINT **regional organism of innovative services supporting the internationalization**
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9. The levels of accessibility between actors: an explicit effort in increasing the accessibility and the information flows between the local actors -I

- **“Regional strategy for the innovation”** favouring a **continuous process of contamination and integration** among the public and private stakeholders of the aeronautic sector (Campania Region-2001)
 - **CARN - Campania Aerospace Research Network** favouring **information exchange** and dissemination, **training programs**, support to **pre-competitive research** (Campania Region, University-DPA, Italian Centre of Aerospace Researches-CIRA, Institute for the composite and biomedical materials-CNR, Alenia, Avio, Piaggio -2002)
 - **IMAST- Technological district on the Engineering of the Polymeric and Composite Materials** - consortium among enterprises, research centres, university, financial organizations favouring the study, planning and production of **innovative materials** to be used in various sectors (Campania Region & MIUR-2003)
 - **Promotion of sector studies, workshop and meetings among enterprises**
 - **Provision of services based on Internet organization** (TECHNAPOLI-CESVITEC)
 - The creation of **permanent observatories** (The Association of Engineers Industrial Union of Naples the Labour Unions etc)
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9. The levels of accessibility between actors: the elements of weakness -II

- Most of the different members often do not share a common identity and interpretation of the needs of the cluster
 - The difficulties to reach a consensus view
 - It is very difficult to promote specific common projects for strategic industrial innovations
 - The existence of relationships and the effectiveness of the joint initiatives seem to be related to **informal and personal social nets** rather than to the existence of a **formal network having a certain degree of institutional thickness**
 - **The scarce mutual knowledge** in the local context
 - **The problems of communication and the difference of language** between the different actors, due to **the difference of the system of values, fields of competence and adopted technologies**
 - **Asymmetries in the circulation of information between the local actors**
 - **Such asymmetries result in distorted decisions and undermine consensus, hence discouraging participation.**
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10. The actors receptivity to external stimulus: the receptivity of the local actors and the quality of human capital

The level of receptivity of the individual actors is affected by the level of technical and managerial education

Training projects by Industrial Union & University

- ✓ **training courses for undergraduates** students in the local firms (since 1990)
- ✓ link between the website of Industrial Union and SOFTEL, the university structure (since 2003)
- ✓ The program “**Campus One**” aiming to promote training courses in collaboration with the local firms
- ✓ Special **Masters** programs and **programs of education and superior technical formation**

Training organization in the technical and managerial fields finalized to the matching between demand and supply of the professional profiles in the sector

CONSAER -Consortium for the development of the Aeronautical Firms (Sviluppo Italia s.p.a, ATITECH s.p.a belonging to the Alitalia, Avio, Officine Aereonavali Venezia, belonging to the Finmeccanica group-2000)

11. The creation of a local identity: the sense of local belonging and the development of intermediate institutions

- The extent of the cooperation between the firms is quite low
 - Knowledge, differently from information, is shared by a relatively small number of actors
 - There is a much higher relational capability for some actors with respect to the other actors
 - The hard core of the actors in the cluster is characterized by large and medium enterprises, public and private research centres and some universities
 - SMEs, as well as some intermediate institutions have a much weaker role, if any, in participating and influencing the multilevel governance process within the regional innovation system
 - Knowledge and information are not appropriated and controlled by only one single actor
 - The relatively high degree of heterogeneity of the stakeholders demonstrates that various actors have the ability to participate to formal and informal exchanges
 - **The governance model adopted in the Campania aeronautic cluster has still a rather hierarchical nature but knowledge is no longer concentrated in the hands of a few privileged subjects**
 - **some local actors seem not to have equally benefited from advantages deriving from the participative and cooperative process or to have been cut off from these advantages**
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12. The expression of creativity: the effort in R&D and in promoting innovation

The policy of the Campania region has focused on the traditional approach of promoting R&D investments

A document by the regional government and the Ministry of Education, University and Research , on the “**regional strategy for the innovation** , trying to **gather together the local competences and excellences in the R&D** and to reorganize their programs in order to promote **a more applied orientation**

- The participation of the **Department of Aeronautical Planning (DPA)**- University Federico II of Naples, to the **Advisory Council for the Research on the aeronautics in Europe (ACARE)** which has the mission to **define and to affect the strategic Agenda of European research in the aeronautical sector.**
 - **A programmatic document by ACARE-ITALY on “the Italian Vision on the research and the technological development of the aeronautical sector**
 - A network of **Regional Centres of Competence**, aiming to establish a stable cooperation between regional research organisations, services organisations, social institutions, public bodies and large firms in Campania.
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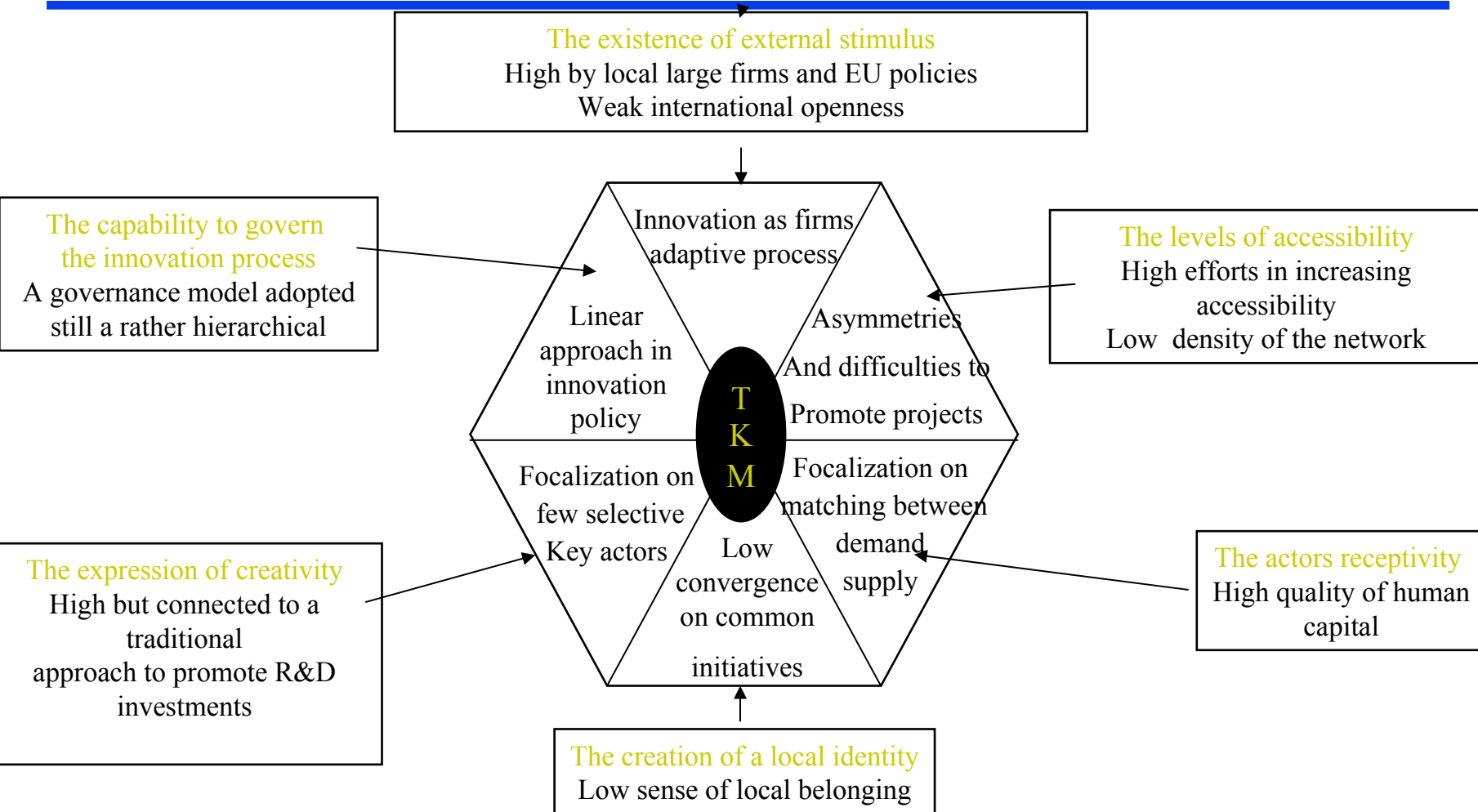
13. The capability to govern the innovation process: governance of innovation processes by local authorities and intermediate institutions-I

- **Campania region could be regarded as the “catalyzing” public entity capable of acting as a mediator and representing collective interests in the network**
 - *In the '70 regional development and regional policy has focused on increasing fixed industrial investments and public infrastructure as the main instrument for correcting economic disparities*
 - *In the '90 the regional strategy has been re-oriented to the valorisation and development of local resources in order to promote the competitiveness at the international level*
 - **The institutional powers and the leadership role of the regional government has been reinforced by the decentralisation process promoted in Italy by the National Government and based on the subsidiarity principle**
 - *a greater role of local public institutions, research centres and various organizations*
 - **The shift from a top down to a collaborative approach has been promoted by EU regulations**
 - *The process of networking has been steered, at meantime, by regional authorities and EU regional policies.*
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13. The capability to govern the innovation process: the elements of weakness - II

- **The Campania region** has often been **unable to fully achieve a vertical coordination** with other national and local authorities
 - It has also not been capable to interact with some other local actors and that has led to decrease its capability to achieve **an horizontal coordination** in the local network.
 - **The selective character of the network** excludes the smaller stakeholders
 - **A limited convergence of policy options** and strategic lines of the different actors at local and national level
 - **The negotiated agreements are not always respected** by the involved partners
 - **They lack to clearly define** both the operative objectives and how long it will take to reach them
 - The process of collaboration and multi-level governance could be perceived as an **exogenous imposition**, due to regional, national, or European regulations and not as the result of **the individual awareness of the existence of a tight interdependence** and of the need for mutually shared behaviours between the local actors.
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14. The Territorial Knowledge Management: main findings



15. Conclusions

The sector actually shows:

- **Lack in consistency of the interactive learning process**
- **Weakness, and in some cases, absence of the intermediate institutions to influence and stimulate the decision-making**
- **Insufficient level of coordination among stakeholders**
- **The absence of a strong catalyst of the governance process, able to promote, mediate, and represent the common interests.**

Main objectives to reach:

- **the strengthening of partnerships between public and private structures, assuring more cooperation and continuous relations in the production, transmission, diffusion and use of knowledge and information**
- **to understand the mechanisms of participation to the network by small stakeholders, strengthening their involvement both in the decision-making process and in the optimisation of the production cycle**
- **to consolidate the long-term evolution of the strategic approaches of the different stakeholders and to reciprocally recognize it such as a source of competitive advantage.**
- **a greater international integration**

It is important to notice:

- **Regional policy and EU regional support are mainly linked to short term budgetary constraints and targets, on the contrary innovation policy requires a long-term perspective**
 - **The transition to a knowledge economy would require the removal of obstacles hindering the endogenous development of joint innovation projects and the enhancement of interactive learning processes between the local actors and also external actors**
 - **the problems of exportability of these specific models**
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