



**Macroeconomic innovation projects**

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**THE INNOVATION STRATEGY  
IN URBAN CENTRES:  
THE CASE OF ATTICA REGION  
OF GREECE THROUGH THE REGIONAL  
DEVELOPMENT PLANNING**

**Abstract**

The present article investigates the interconnection of innovation with the urban growth in the regional development planning of the current programming period 2000–2006. The analysis is focused on the Metropolitan Region of Attica and more specifically in the developmental strategy of the Attica region for innovation, as it is shaped and materialised in the current programming period through the Regional Operational Program of Attica of the third Community Support Framework.

**Key words:**

Innovation, Innovation Strategy, Technological Innovation, Region of Attica, Metropolitan Centre, Regional Operational Program, Community Support Framework.

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## 1. Introduction

During the last years, the subjects of technology and innovation have become objects of wide analyses as the main factors defining growth. Innovation has been proposed by international organizations as the basic lever of development process. According to the definition of OECD in the «Frascati Handbook», adopted by the European Union (EU) in the «Green Bible of Innovation»: «Innovation means the process, as well as the result of this process. It refers to the transformation of an idea in marketable product or service, functional method of production or distribution – new or improved – or still to a new method of social service. The term innovation covers also the social, institutional and organizational innovation including the innovation in the services sector» [1]. Thus, the diffusion of innovation means the spread of a process, that is to say methods and procedures that render possible the innovation, and the results of that process, i.e. new or improved products and services.

Although the innovation is not absolutely identified with high technology which plays a fundamental role in the production of innovations it is often present in the equipment, the software, the hardware, etc., in the form of incorporated new technology. More specifically, the Technological Innovation of Products and Processes (TIPP) possesses the more important piece of innovation. According to the Oslo Handbook for the collection and interpretation of technological innovation data [2], the TIPP «includes materialized technologically new products and processes, as well as important technological improvements of products and processes. A TKPP is considered as materialized if it has been either introduced in the market (when it is a product innovation) or used in the frame of a production process (when it is process innovation)». The technological innovation of products, where the term product includes goods and services, appears in the form of technologically new or technologically improved products. Technologically new product is the product that has technological characteristics to make its current or future use considerably different. This kind of innovation can either include use of new technology or combination of existing technologies for new uses, or it can spring up from the acquisition of improved knowledge. Technologically improved product is the existing product with strengthened efficiency. A simple product can be improved (better efficiency or lower cost) with the use of materials or components of better yield, while a complex product (it integrates more than one technical element) can be improved with the incorporation of partial changes in its components [3]. The technological innovation of a process refers to the adoption of new or considerably improved methods of production or even distribution.

Independent from the form the innovation takes a lot of opinions come forward claiming that the innovation and the technological growth will solve not only the economic problems but many more. The innovation and the technological growth will overcome the lack of resources, increase the productivity of work, and affect the development of society (Pakos, 1992). Thus, the opinion that be-

gins to dominate is that the exit from the world crisis, that began the decade of 1970s and altered to a large extent the post-war developmental model based on the heavy industry, presupposes technological change and the development of innovation. That of course can only exist in the regional level (Lipietz, 1992), via the configuration and concretization of a complete innovative strategy.

According to the modern theory of Krugman (1991) the location of enterprises presents tendencies of concentration in an area, in order to develop the economies of scale in the transport cost and in the productive process. The degree of spatial concentration of the economic activities according to Porter theory (1990, 1996) constitutes a fundamental factor of sectoral determination of a country, which has competitive advantage in a globalized economy. The isolation and the lack of competitive challenges, the weakness of incorporating new technology and the lack of innovative initiatives lead to delay (Konsolas, 1997). Therefore, the possibilities of what new technology offers and the creation of innovative environment, particularly in the areas of concentrating of economic activities, should be our target. Recently a lot of researches have been focused on the investigation of the close interconnection of the concentration economies with innovative networks, technological infrastructures, and growth of production (Karlsson, 1997), as well as on the role of knowledge and its mechanisms of production in the creation of networks of innovative environment (Fischer, 2000).

In the known polar model (concentration – diffusion) of development, that is supported in the concentration of growth in certain points in the space (in the urban centers), «propulsive industry» is comprised of the Research and Development, the activities of high technology, high quality services and innovation. Metropolitan cities are in particular the main places of concentration of such activities, playing sovereign role in the wider supernational geographic subsets which surround them and more generally in the world economic system, depending on their dynamics and their scope. In this framework, one of a new tendencies of regional development planning is the interconnection of new technologies and innovation with the urban development, to the strengthening of the extraversion of cities and towards the enlargement of their role and their radiation on regional, national, and international level, via the intensification of their strategic infrastructures, the appointment of «Propulsive Activities» and the exploitation of Research and Technological Development (R&D), Adapted Technology and Policy for the Innovation (Konsolas, Papadaskalopoulos and Plaskovitis, 2001).

## **2. The Situation of Technological Development in the EU Countries and the Comparative Place of Greece**

The indicators of technological development in the EU show some important inequalities on the national and regional level. More specifically (Table 1), the inequalities among the EU countries are bigger in R&D than in GDP. In the four cohesion countries the Gross Expenses for R&D are on average scale smaller than the 1% of GDP, while on the EU level the corresponding medium percentage reaches 1.86%. Only in Ireland from the four countries this percentage exceeds the 1% of national GNP, while Greece is in last place. For the year 1997, the Gross Expenses for R&D as percentage of GDP, has Greece in the last place among the EU countries, with percentage of 0.51% and with important difference from next one from last, Portugal (0.65%).

This technological gap is still more intense if the Private Expenses for R&D are be examined. Despite the small reduction of inequities the previous years, in 1998 the expenses of enterprises for R&D compared with GDP in Greece and Portugal are at very low levels comparing with the corresponding means of the EU (roughly 10–12% of European average), while in Spain they reach the 40% of the European average. The proportion of enterprising from the total expenses in Spain is also a little above the average, while in Greece and Portugal are roughly 1/4, contrary to the more developed countries that is 3/5 of the average. The exception from the cohesion countries is Ireland, mainly due to the effect of multinational enterprises.

The inequalities among the state members are relatively smaller, but however important with regard to the employment in the R&D. Finally, the technological gap in conjunction with the number of applications for patents is large. Greece is in second place from the bottom in the EU concerning the applications for license per million of population (hardly 6 applications annually per million of population).

According to the 6th Periodical Report of European Commission and the 2nd Report of Cohesion [4], the R&D disparities in the EU are still bigger if it is taken into account that the inter-regional disparities in the each member state is as much in the cohesion countries as in the other countries. The expenses and the employment in R&D are concentrated in certain regions that include Southern and South-eastern Germany, the Flamandia in Belgium, the Netherlands, South-eastern England, the Metropolitan Region of France and in smaller degree South-eastern France and North-western Italy.

Table 1.

Defining indicators of R&D level in the European Union

	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	EUR15
GDP par cap. PPS (1998) EUR 15=100	111	119	108	66	81	99	108	101	176	113	112	75	102	102	102	100
Gross Expenses R&D (% of GDP)* EUR15=100	1,84	1,93	2,29	0,51	0,90	2,19	1,40	1,02		2,04	1,49	0,63	2,89	3,77	1,82	1,86
Enterprising Expenses R&D (% of GDP)* EUR15=100	99	104	123	27	48	118	75	155		110	80	34	155	203	98	100
Enterprising Expenses (% of Gross Expenses R&D), 1998	1,31	1,21	1,55	0,13	0,47	1,36	1,03	0,55		1,11	0,84	0,14	1,94	2,87	1,2	1,18
Public financing R&D (% of budget), 1994 <sup>◇</sup>	111	103	131	11	40	115	87	47		94	71	012	164	243	102	100
Personnel of R&D (% of total) *	71,4	62,6	67,8	25,6	52,1	62,0	73,7	53,7		54,1	55,9	22,5	67,2	76,2	65,8	63,7
Personnel of private R&D of (% of working potential) *	1,85	1,58	3,71	0,57	1,9	4,61	0,86	1,67		2,65	2,52	1,76	2,87	3,15	2,19	2,88
Applications of patents (per million of population, medium term of three-year period 1997-99)	1,22	1,99	1,48	0,75	1,02	1,46	1,17	0,81		1,45	1,16	0,61	2,43	2,35	1,28	1,27
GDP par cap. PPS (1998) EUR 15=100	0,63	1,00	0,84	0,11	0,26	0,71	0,50	0,30		0,61	0,47	0,08	1,29	1,21	0,60	0,59
Gross Expenses R&D (% of GDP)* EUR15=100	123	139	227	6	18	116	52	60	145	166	125	3	222	269	95	119

Source: European Commission, 2nd Report on the Economic and Social Cohesion, 2001.

\* 1998, except B, EL, IRL, NL, P: 1997, A: 1993.

◇ EL, P, EUR 15: 1993.

\* 1998, except P: 1997, F, I, NL: 1996, B, IRL: 1995, EL, A, UK: 1993.

### 3 The Technological Level and the Innovative Ability in Greece

#### 3.1 The Innovative Ability of Enterprises – Sources of Extracting Innovation and Innovative Sectors

The Greek enterprises during the post-war period strengthened their technological ability through technology import (with licensing) [5]. This is due, on one hand, to the low level of structures and mechanisms of technology production from enterprises and on the other, to the years of national technological policy, that encouraged technology import, in order to guarantee the technological surges in the production with low cost. It is reported that according to research of General Secretariat of Research and Technology (GSRT, 1996) for the period 1989–91, the majority of enterprises that bought and sold technology in Greece (roughly the 50%) are large (they employed above 100 workers). The most important sector of growth of innovations in the main productive process concerned the renewal of existing equipment (25% of produced innovations). Most of the innovations concerned the innovations of a product. In the three-year period 1989–91, 3.5 innovations of a product were related to each enterprise, which is a low degree of innovative growth, since innovations of products usually do not imply changes in the productive process.

According to more recent data [6], during the last years the number of innovative enterprises has increased considerably.

Table 2.

#### Innovative enterprises (Enterprises with 10 and more workers)

	1989/1991	1994/1996	1997/1998	Percentage Change	
				1989/91– 1994/96	1994/96– 1997/98
Innovative enterprises	297	1,045	1,141	252%	9,2%
Medium annual number of innovative enterprises	99	348	571	249%	64,1%

Source: GSRT, 2001.



Tables 3 and 4 that follow present the main innovative activity of enterprises in the manufacturing and services sectors.

Table 3.

**Indicators of innovation in the manufacturing enterprises**  
(Enterprises with 20 and more workers)

Indicators	1994–1996			1997–1998		
	Absolute number	% of the total	% of the innovative enterprises	Absolute number	% of the total	% of the innovative enterprises
Innovative enterprises	951	26.5	100.0	1.088	30.3	100.0
Enterprises with innovations of product	807	22.5	85.1	906	25.2	83.3
Enterprises with innovations of process	666	18.5	70.2	851	23.7	78.1
Enterprises with innovations in house	739	20.6	77.9	760	21.2	69.8
Enterprises with innovative collaborations	169	4.7	17.7	233	6.5	21.4
Enterprises with new products	372	10.4	39.2	501	14.0	46.0
Enterprises with R&D	566	15.8	59.7	679	18.9	62.3
Enterprises with systematic R&D	183	5.1	19.3	253	7.1	23.3
Enterprises with occasional R&D	383	10.7	40.3	425	11.8	39.1
Enterprises with governmental funding	409	11.4	43.1	390	10.9	35.8

Source: GSRT, 2001.

Table 4.

**Indicators of innovation in the services enterprises**

(Enterprises with 10 and more workers)

Indicators	1994–1996			1997–1998		
	Absolute number	% of the total	% of the innovative enterprises	Absolute number	% of the total	% of the innovative enterprises
Innovative enterprises	473	11.1	100.0	661	15.5	100.0
Enterprises with innovations in house	178	4.2	37.5	265	6.2	40.0
Enterprises with innovative collaborations	267	6.3	56.3	238	5.6	36.0
Enterprises with R&D	355	8.3	75.0	556	13.0	84.0
Enterprises with systematic R&D	237	5.6	50.0	238	5.6	36.0
Enterprises with occasional R&D	118	2.8	25.0	318	7.5	48.0
Enterprises with governmental funding	89	2.1	18.8	132	3.1	20.0
Innovative enterprises	473	11.1	100.0	661	15.5	100.0
Enterprises with innovations in house	178	4.2	37.5	265	6.2	40.0
Enterprises with innovative collaborations	267	6.3	56.3	238	5.6	36.0

Source: GSRT, 2001.

A considerable part of the manufacturing enterprises develop product innovations, and there is also an important percentage of enterprises with process innovations. In the manufacturing sector, the biggest part of enterprises develop innovations in house, as opposed to the ones that are developed by innovative collaborations. This difference is smaller in the innovative enterprises of services, where the 40% develop innovations in house, while the 36% have developed innovative collaborations. The percentage of innovative enterprises that develop R&D is quite high (62.3% for manufacturing enterprises and 84% for the enterprises of services for two years, 1997–98).



Table 5.

**Classification at order of importance of information sources**

Information source	Classification		Trend	EU*
	1994– 1996 pp.	1997– 1998 pp.		
In house sources	1	2	↓	1
Reports-Presentations	2	1	↑	4
Customers	3	5	↓↓	2
Suppliers	4	3	↑	3
Congresses, meetings, journals	5	4	↑	7
Enterprises of advisors	6	6	–	8
Electronic networks of information	7	7	–	–**
Competitors	8	8	–	6
Universities	9	9	–	10
Research Institutes	10	10	–	12
Disengagement of patents	11	11	–	9

\* CIS I data for the period 1980–1991.

\*\* They are not included in CIS I.

Source: GSRT, 2001.

In the following table the order of importance that the innovative enterprises attribute to the sources of information, compared to the corresponding results at the EU level, is shown.

The main innovative ideas for the enterprises emanate in house, from reports and presentations, from their customers, the suppliers and finally from the congresses, meetings and magazines. The in-house sources, the reports and presentations, the customers and suppliers are in high places in the innovative enterprises of European Union.

### **3.2. The Situation of R&D in Greece and the Relative Place of Attica Region**

Research activity of the Greek enterprises shows an increase during the last years, despite its low level, that puts our country in the last place among the EU countries (as we saw on the above analysis). According to an inquiry conducted by GSRT (1998) the 292 number of private enterprises that practiced research activities in 1993 rose to 548 in 1997, an increase of 87.7%. Roughly speaking the 25% of these enterprises are of a small size (with less than 10 workers). Main objective of research is still the creation of new products; the improvement of existing products

follows. Of importance is also the percentage of enterprises (above the 50%) that make collaborations with research institutions, as well as with other enterprises, while more and more enterprises apply for patents.

The branches with important R&D activity (1997), with more than the 50% of relative enterprising expenses, are the manufacture of equipment and appliances of radio, television and communications of (17.2% of total expenses is assigned to the R&D), the information technology and relevant activities (15.8%), the production of chemical substances and products (7.6%), other enterprising activities (5.8%) and the industry of foods and beverages (5.2%).

The development of Gross Domestic Expense for Scientific and Technological Research in Greece as percentage of GDP the last years shows small tendency of increase, which intensified two years, 1997–1999.

There is a relative stability in the trend of governmental funds for R&D, as percentage of GDP. There is a small increasing trend during the last three years of the report, period (1998–2000). The share of private sector in the funding of R&D, not only in absolute terms, is also very small compared with public sector funding, despite the increase of the last two years in its share of GDP.

Considering the spatial distributions of expenses and activities for R&D there are large inequalities, as there is an excessive concentration in Metropolitan Region of Attica. The per capita expense for R&D in Attica was 57,000 Euro in year 1993, compared with 26,000 Euro in the rest of the country. The R&D personnel as percentage of working potential was 0.96 in Attica, while in the rest of the country was hardly 0.63. Finally, the number of applications for patents per million of residents was 8 in Attica and barely 2 in the rest of the country.

According to data for the year 1997, the distribution of Gross Domestic Expenses for R&D on regional level confirms the over-concentration, since the two metropolitan regions (Attica and Central Macedonia) absorb the 69.82% of the national expenses for R&D compared with 71.24% in 1995 and 72% in 1993. Between the two metropolitan regions, Attica Region is the one that in 1997 absorbed the 51.6% of Gross Expense of the country's R&D, compared with 18.2% for Central Macedonia. The situation remains the same with regard to the regional distribution of expense of enterprises for R&D. More specifically, according to the GSRT data for the private sector R&D activity (1998), in the two metropolitan regions roughly 75% of total private enterprising expense for R&D is concentrated (Attica: 63.7%, Central Macedonia: 12.4%). As regards the regional distribution of R&D personnel the 43.1% of R&D personnel is concentrated in Attica region and the 22% in Central Macedonia. Moreover, in Attica is concentrated the 60% of employment in the financial organizations and the 36% of the Research Institutions of the country (G.S. of Attica Region, 2000).

Table 6.

**Gross Domestic Expenditure for R&D**

Year	Current prices (in Euro)	% of GDP
1993	294,820,249	0.49
1995	388,558,767	0.49
1997	492,230,668	0.51
1999	760,228,026	0.68

Source: GSRT, 2001.

Table 7.

**Expenses of the public sector and enterprises for R&D (% of GDP)**

Year	% of GDP	
	Government owned Funding	Enterprises owned Funding
1995	0.30	0.15
1997	0.30	0.13
1999	0.31	0.19
2000	0.32	

Source: GSRT, 2001.

Table 8.

**Spatial distribution of expenses and activities  
for R&D – Attica and the rest of the country**

	Attica	Rest Country
Expenditure per capita (in Euro)	57,000	26,000
% of R&D personnel in the working potential	0.96	0.63
Patents per million of residents	8	2

Source: European Commission, Sixth Periodical Report, 1999.

The over-concentration of expenses, activities and relative R&D infrastructures in Attica, even if it constitutes disadvantage on the country level since it intensifies the relative regional inequalities, constitutes at the same time an advantage for the Attica Region. It promotes the technological modernization of activities and the development of innovative environment of the region and strengthens the enlargement of international role and the integration of the capital of Greece in the international technological networks and in the networks of big urban centers of Europe.

## **4. The Innovation Strategy in the Regional Operational Program of Attica**

### **4.1. The Main Directions of the Regional Planning Actions and the Development Strategy of the Operational Program of Attica**

An important innovation in the regional planning process in the current programming period 2000–2006, which as it is known is based upon the implementation of the third Community Support Framework (3<sup>rd</sup> CSF), is the launching of three special types of action in the priorities of Regional Operational Programs (ROPs). These types of action are drawn and implemented through local and regional corporate relations in the logic of «down-top» approach of development (Papadaskalopoulos and Christofakis, 2002). The three types of action are the followings:

1. Development of innovation. All the regions of Greece shape and implement special strategies for innovation, that aim to the creation of various forms and networks of collaboration between the enterprising world and particularly the SMEs, the education and R&D activities and the public sector. The networks of collaboration and the development of synergy mark out sectors of specialization and excellence, which appear as part of the «picture» of the region in the sets of the world. These sectors are supported by the comparative advantages of the regions and are clearly marked with the diffusion of innovation in the local socio-economic activities.
2. Urban Development. In selected small-scale local areas in the urban centers, through initiatives of local institutions, local integrated programs are implemented that focus their interventions in multiple and cohesive actions. These urban areas are demoted areas of cities and are uniform and homogeneous concerning their problems.
3. Integrated Development of Countryside. In the same rationale of integrated urban programs, programs are designed and implemented for homogeneous small scale of the Greek countryside. The ROP of Attica is excluded from these programs, because of the relative lack of extensive country areas with the primary sector.

According to the basic directions of regional planning, in the new ROP of Attica 2000–2006, the application of an integrated development strategy is promoted. This strategy develops the comparative advantages of the Region, in combination with the possibilities that the new technologies offer, the innovative activities and the society of information, while at the same time a systematic effort to confront the basic problems of the interregional inequalities, the environment and the quality of life

in general is undertaken. This strategy is outlined in the following basic objectives (subprograms) of the ROP of Attica 2000–2006:

1. Enlargement of International Role of the capital city.
2. Re-enforcement of the quality of life and environment.
3. Reduction of unemployment and confrontation of social exclusion.
4. Reduction of intraregional inequalities giving a special attention to the western areas, the internal areas and the island areas of the Region.
5. Re-establishment of repercussions from the earthquake in Attica 7–9–99.

#### **4.2. The Framework of Strategy and the Action Plan for the Innovation**

One of the special strategies for the promotion of the objectives for a complete development strategy of ROP of Attica, especially the first one (enlargement of international role of the capital city), is the innovation strategy. The size and the dynamism of Attica, in conjunction with its economic structure, constitute the basic factors that impose the implementation of an effective strategy for innovation, with important development impacting not only the Region itself, but also the entire country. This strategy is promoted through the following objectives:

1. Supporting the infrastructures of concentration of high technology activities.
2. Supporting the R&D in Higher Education Institutions and research centers.
3. Connection of research with production.
4. Incorporation of new technologies and innovation into the cultural activities.
5. Supporting the Information Society.

In order to achieve these objectives the following measures of the ROP of Attica are being implemented (G.S. of Region Attica, 2002):

- Configurations and interconnections of the urban and suburban areas in order to include new activities – Infrastructures and action of support of SMEs in the secondary and tertiary sector – Actions for the diffusion of results of research into the productive web.
- Establishment and promotion of touristic, archaeological and historical places and support of modern cultural creation and innovative cultural products.

- Upgrade of infrastructure and equipment in higher education and in research centers.
- Incentives for private investments.
- Development of human resources.

The actions for innovation aim (in order of precedence) at support of the following sectors: PC and multimedia, telecommunications – networking, telematics in the transportations, sound and picture activities, organization of cultural services and events, environmental and industrial technology. Tele-education, tele-working and tele-medicine, the CAD-CAM-CAE technologies, logistics, biotechnology, etc. are sectors that have strong orientation in the demonstration of innovations.

The methodology we follow in the configuration and application of innovative programs on a regional level in the EU, is supported by the creation of the Action Plan, that constitutes the strategic frame upon which the actions for innovation will be implemented. The configuration of the Regional Action Plan allows the effective organization and administration of innovation programs and the choice of suitable actions, as well as their convenient and effective implementation. The Action Plan constitutes the frame through which the strategy for the innovation will be implemented, as it has been sketched out in the ROP and has been specialized in the Programming Complement. The milestones of Action Plan [7], in combination with the basic directions of the ROP of Attica, are the following:

1. Support of creation and operation of experts areas of reception and development for innovative and technological activities.
2. Assistance for the R&D in universities, research centers and institutes.
3. Support of synergy and networking among research centers and enterprises.
4. Development of the technology – Innovation sector that is incorporated in the cultural activities.
5. Support for new enterprises and renewal of enterprises with the incorporation of new technology and innovative actions.
6. Development of the human resources in the priority sectors as set by the ROP of Attica.

The above strategic objectives are specialized in the table that follows, in the framework of the Action Plan of the ROP of Attica for the Innovation.



Table 9.

**Strategic action plan of the ROP of Attica for the innovation**

Milestones-Strategic Objectives	Object of relative actions	Covered needs	Territorial priorities	Sector-based priorities
1. Creation and operation of experts areas of reception and development for innovative and technological activities	New enterprising infrastructures (Technological and Scientific Parks, Innovation Centers etc)	Extension of relative infrastructures – Cover of the lack Support of operation of already existing infrastructures	Areas that already function such type of infrastructures New areas (Lavrio, Mes-sogia, new Athens airport greater area, etc).	High Technology Enterprises, Research Centers and Special Financing Services, Supporting Operations
2. Support of R&D	Research activities and operations and relative infrastructures	Support of research and educational infrastructures Support of research activities, mainly in dynamic sectors and new economy sectors	Areas of operation of Universities, Research Centres and Institutes	Sectors of new economy Sectors of priority of ROP Attica: •Electronic Computers and Multimedia •Telecommunications – Networking Sound and Picture Activities •Culture and Organization of Services of Recreation •Environmental and Industrial Technology
3. Connection of research and production - networking	Synergy and networking of research centers and productive activities Services for the enterprises Actions for the diffusion of the research results in the productive web	Connection of research and production Cover of lack of information, mainly in the SMEs Promotion of technological modernization and innovative actions of SMEs Creation of networks in the development of innovative environment	The total Region	Sectors of new economy Sectors of priority of the ROP of Attica The rest of sectors and enterprises, that can become recipients of innovative methods and of the results of research
4. Development of Technol-	Infrastructures and equipment	Modernization of cultural activities,	Archaeological sites and monuments,	Sectors of the PC, multimedia, sound and picture activities,

ogy – Innovation that is incorporated in the cultural activities		through the incorporation of modern technology and innovative methods	libraries, the rest of the cultural activities and tourist sites The rest of the areas, which are related with the sectors of support	publications. Education – training – summer schools with the use of multimedia. Thematic museums of virtual reality.
5. Support of new and modernisation of enterprises with the incorporation of new technology and innovative action	Services to the enterprises Incorporation of new technologies Incentives to the enterprises	Creation of new enterprises in sectors of new economy Modernization of enterprises with the incorporation of innovation and new technology Improvement of competitiveness of enterprises Aid of business dexterity	The total Region	Sectors of new economy Sectors of priority of ROP Attica The rest of sectors and enterprises that can become recipients of new technologies and innovative methods
6. Development of the human resources in the sectors of priority of ROP	Professional training Application of special programs of training: • «Employee Involvement», in processes of improvement, planning of work, reception of decisions. • «Total Quality Management» (adaptation of working methods, control of processes, improvement of records). • «Rehandling of processes» (selective trainings, repositions, support to the efficiency).	Improvement of the dexterities of human resources Attendance of the workers in the development and in the modernization of the enterprises	The total Region	Sectors of new economy Sectors of priority of ROP Attica (SME – Innovation-research and technology of Information, culture-tourism, environment etc)

The interested institutions that will be called to submit the relative proposals for the innovation will take into account the above-mentioned Plan that the proposed actions will be compatible.

For the implementation of the regional innovation strategy the formation of an effective and flexible administration system is considered crucial along with the organization of the program. That system allows a close collaboration of institutions and convenient intervention with corrective measures and additional initiatives in the implementation course of the Action Plan. At the same time, this system promotes the required regional consensus building, leading to the materialization of the action framework, which will wind up eventually in the program for the innovation that the region will implement. The effectiveness of organization and administration of the program, according to the experience gained by the application of regional innovative strategies and programs in national and European level, is secured by the operation a Steering Committee, a Management Unit and special Working Groups. This organizational framework is compatible with the already functioning organization and management system of ROP, while it can, at the same time, be enriched by other institutions that have experience on innovation issues, as well as by the recipients of relative actions that are the beneficiaries of action that will be finally selected. More specifically, the content and the role of these institutions in the application of strategy and in the development of program are:

**Steering Committee.** It is the body in which social and economic partners with supervisory and strategic competences participate. It has as objective to provide the consent on methodology issues, objectives, surges and results of the program. In the framework of the ROP of Attica, the ROP Committee which is already in operation will be at the same time the Steering Committee of the Innovation Program.

**Management Unit.** It is constituted by members of the already functioning Management Unit of ROP. It is in charge of the implementation of the Program. It makes proposals to the Steering Committee and provides technical support on issues of guidance of the program. Its main objectives are to provide the effective organization and management of program, the configuration and operation of a sufficient mechanism of follow-up, fast detection and convenient confrontation of malfunctioning and problems.

**Special Working Group.** This special Working Group is composed from external advisors that provide advisory support to the Management Unit in specialized issues related with the technological demand, and offer technology transfer, analysis of content of proposed innovative action etc. It is organized by the Management Unit and aims to the detection of needs and problems and the demonstration of technological solutions in specified important technological questions.

## 5. Conclusions

Basic orientation of programs of the current programming period (in sectoral and regional level) is the configuration and implementation of interventions that aims at the improvement and diffusion of innovation in the economic activities. One of the novel tendencies of regional development planning is the close interconnection of new technologies and innovation with the urban development, in the direction of strengthening the extraversion of the urban centers and enlargement of their influence in regional, national and international level through the intensification of their strategic infrastructures, the appointment of «Propulsive Activities» of each urban centre and the exploitation of R&D, adapted technology and innovation policy in the process of development.

Although Greece had a substantial improvement during the last years, regarding the technological level and the innovative faculty of its enterprises it is continually falling behind compared with the rest of the EU countries while there are big inter-regional differences in the country as the Metropolitan Region of Attica absorbs most of the funds, R&D activities, and innovations. This over-concentration, even if it constitutes disadvantage on the country level since it intensifies the relative inequalities among the regions, constitutes at the same time an advantage for the region of Attica. It promotes the technological modernization of activities and the development of innovative environment. It strengthens the enlargement of international role and the integration of the Capital in the international technological networks and in the networks of big urban centers of Europe.

In this framework, the ROP of Attica 2000–2006 promotes an integrated innovation strategy based on the following directions: infrastructures, dynamic sectors, services and incentives to the enterprises, human resources, networking. This strategy is developed for first time through an Action Plan for the Innovation. The successful implementation of this Action Plan requires close collaboration with the local institutions, the social partners and mainly the enterprising world, which is also the direct recipient of innovative action, in the framework of tendency of the improvement of local developmental initiatives and mobilization of local factors, not only for locally important issues. The implementation of certain specific interventions and the benefit of certain incentives from the central institutions do not guarantee the effectiveness of strategy. Previous experience has shown that the effective implementation of regional innovative strategies in the EU requires continuing processes of encouragement, briefing, exchange of experiences, collaborations and networking in the context of a well known model of the «Regional Experimentalism» (Konsolas, 2001). The ability of enterprises and enacted bodies to learn permanently, experiment, to exchange experiences – in level of products, processes and organizational structures – and to adapt under the pressure of the competition, constitutes the basic factor of success. The attendance in the reception of decisions, in the networks of collaboration and in the management means that the institutions and the individuals are involved in a process of «learning through acting» and reciprocal improvement (EU, 1997; 1998; 2001). This process strengthens the innovation and creates

networks of knowledge and interaction, leading to the alteration, change at the level of products, processes and laws.

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3. Example of use of components with higher efficiency is the replacement of metals with plastic in the domestic equipment and in the furnishing, while the import of ABS or some other improved sub system in the cars is an example of a complex product improvement.
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7. The total funding of Action Plan, through the ROP of Attica amounts of 71,947 thousand of Euros, from which the Public Expenditure is 55,055 thousand of Euros, while in 16,892 thousand of Euros is appreciated the attendance of private sector.

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