

Country Briefing Report - Restructuring of R&D systems in Ukraine BRUIT project

A. Questions

1. Please, explain changes in the system of Academies of Sciences in your country since early 1990s. Explain changes in statutes of Academy and changes in statuses of individual Academy institutes. Was there program of restructuring of Academy institutes? If yes, please, explain criteria for restructuring of Academy institutes.

1991: The Academy of Sciences of the Ukrainian Soviet Socialist Republic was renamed into the Ukrainian Academy of Sciences. No serious changes in the structure of the Academy. According to the first Version of the Law on Scientific and S&T Activity (Law N 1977-XII from December 13th,1991). In 1994 The Academy was renamed into National Academy of Sciences of Ukraine. There are also five other Academies, which have official status and the state support (budget financing): Ukrainian Academy of Agrarian Sciences, Academy of Medical Sciences, Academy of Pedagogical Sciences, Academy of Legal Sciences and the Academy of Arts. According to the latest version of the above-mentioned Law (Clause 15), the National Academy of Sciences (NANU) and other five Academies are the state scientific organizations, based on the state property. There are 376 scientific organizations in the system of Academies in Ukraine. Academies have high degree of autonomy and they are responsible for conducting research in corresponding spheres.

1992-2006: The number of research institutes in the National Academy of Sciences has become to rise since early 1990s, especially in the humanitarian sphere. If at the beginning of 1990s it was 80 research institutes, now the total number of research institutes within the Academy of Sciences is 209 (2006). At the same time, the average number of researchers in the institutes declined by more than five times. National Academy of Sciences has a dominant position in the system of Academies, comprising about three quarters of all academic financing, two thirds of research establishments, and more than 70% of researchers.

Reforms in the Academies are going slowly. The key change in the recent years is the growing share of competitive funding. This share is at the level of 30% in some institutes. However, the competition is rather formal, and the procedure of selection the winners is not transparent enough, as the external experts are rarely engaged in the decision-making process. The second novelty is the organization of joint international competitions along with funding agencies from other countries (the USA, Russia, Hungary and so on).

The status of the institutes has not changed substantially during the last fifteen years. Top administrators have control over funds distribution and selection of the research projects. On the other hand, it is worth to mention that in some cases leading scientists take the positions of directors of the institutes.

There are no official plans to reform the Academy at the moment, but several alternative projects of such reforms are prepared, and if political situation in the country will be stable, the reforms could start next year (2008). The most radical

projects suggest the abolishment of the Academy and transfer of the Academician institutes to the University sector.

2. Please, explain changes in the R&D in higher education system in your country? Has R&D at universities increased or decreased? Have there been activities in merging independent/government/academy institutes with universities?

The key changes could be summarized in such way:

- decline of technical and natural sciences. Their shares in the number of students, defense of doctoral and candidate's dissertations and finances are going down every year since the beginning of 1990s.
- official joining to Bologna process in 2006.
- slight growth of R&D expenditures in leading universities, while the absolute majority of colleges and universities are not doing R&D at all. It is also worth to mention that more than half of their research money universities receive not directly from the state budget but as commercial contracts from companies (including state-owned companies).
- creation of different structures (business centers, technoparks), aimed at support of business activities. Here, again, some leading universities, such Kiev Polytech Institute are much ahead of other universities.

There is some co-operation between the universities and academic institutes in doing research, and, especially, in educational activities. Institutes and Universities have joint chairs in some areas. They also do some research, especially within the framework of the national development programs. However, there are no evidences of mergers between research institutes from different sectors. On the other hand, buildings and equipment of some institutes have been transferred to the University sector after the closure or downsizing of research institutes.

3. Please, explain changes in the sector of ex-industrial institutes in your country? What is their current legal status? How S&T and innovation policy has been treating these organisations? For which programs these institutes are eligible and what are criteria applied in their public funding? Please, explain privatisation in this sector.

Collapse of the Soviet R&D system, when the bulk of Ukrainian branch institutes worked in the interests of the All-Union Ministries, and the dissolution of so-called scientific and industrial complexes (nauchno-proizvodstvennyh ob'edineniy) have led to separation of research institutes and production units. For the institutes, this means that the relations with their traditional partners became more and more loose. Financial situation in these institutes deteriorated rapidly as a result of losing state contracts and worsening economic situation of the enterprises. The ministries tried to support their "own" institutes, but resources are scarce if compare with the number of researchers.

Having largely lost their industrial partners, the latter have sought to survive by securing funds from other sources. But for a number of scientific institutions, ties with local industries are weak, that leads to the misuse of the existing S&T potential, while absolute majority of scientists could not find adequate place in transition process. The process of transition was also greatly influenced by the attempts to preserve existing

number of employees and waiting for the resumption of the large scale direct state financing.

These institutes had to shift to non-R&D activities that now comprise more than half of their total activities. This was accompanied by substantial decrease of publications in these institutes, as well as by decline in patent applications. The latter is connected not only with relatively low level of research efforts, but also with high price of patenting, especially abroad.

It is also important to mention that design bureaux have suffered more than other industrial R&D organisations. It is possible to expect that many applied research institutes and design bureaux will be transformed into relatively small research or production companies. However, their future depends heavily on the speed of economic transformation in key industries. At the same time, it is also possible to note that some sectors in Ukraine have already no perspectives for economic recovery. Unfortunately, these sectors, such as electronics, determine dynamics of the modern economies. Without sufficient money supplies by the industry, the institutes are unable to retain their best staff or update its technical base. State support through corresponding ministries is minimal, despite permanent declarations about the need of innovation development from the side of authorities. Institutes have the right to take part in a number of development programs with direct state financing, if they have so-called innovation projects, but the level of real financial support is much lower than it is declared. On average, it varies from zero to 30% of the declared amount.

Legal status of the bulk of branch research institutes is 'mixed'. On the one hand, they are formally associated with the ministries. The ministries have the right to nominate directors and to control the property. On the other hand, institutes are largely of so-called 'collective form' of property, when employees have shares of the institute as an enterprise. There are also some private institutes but their number is not high.

4. Please, explain changes in the sector of enterprise R&D (in house R&D) in your country? Who are major R&D performers in business R&D? How S&T and innovation policy has been treating these organisations? For which programs these institutes are eligible and what are criteria applied in their public funding?

The enterprise sector declined more than other sectors of R&D in 1990s. Very few large enterprises have preserved their research and development units. Generally speaking, the situation in this sector is very similar to the situation in branch sector. They are eligible for participation in development or specialized S&T programs, if they have innovation projects, which are selected on the base of expertise by corresponding ministries or agencies.

Ukrainian legislation contains norms, aimed at financial support of innovations but these norms are not working due to some legal barriers.

5. Please, explain R&D funded from abroad? If possible, refer to collected data.

The role of foreign funding is substantial. This could be explained by several factors.

First, co-operation in R&D with Russia in some sectors (space, aviation, military, gas and oil transportation) is still important. In recent years, contacts with some other countries, especially with China, Vietnam and some others have become stronger. Ukrainian specialists propose their results cheaper than their competitors in conditions of low demand at home. For developing markets it is an important advantage.

Second, Ukrainian researchers are relatively cheap but if the official exchange is applied, the volume of expenditures seems high. This leads to the relatively high share of foreign financing of R&D. For example, in early 1990s, more than 60% of all Ukrainian pharmaceutical research were financed from abroad, if consider official figure. In fact, Ukrainian scientists have received only two research grants from the NIH (USA), but, bearing in consideration formal exchange rate for national currency, it was substantial part of all financing of the sector.

Third, some firms and institutes are trying to use R&D for 'grey' schemes of their activities. This is related to the practice of VAT return that exists in Ukraine.

What are the major sources of funding from abroad?

Key sources of funding from abroad are commercial contracts, especially in the technical and natural sciences. Grants from different foundations (STCU, CRDF and others) and the EU framework programme are less important.

Are there foreign direct investments in R&D in your country? Please, explain motives of foreign companies to set up R&D facilities?

In fact, there are no really significant research centres of large companies in Ukraine. Key objectives of the FDI in R&D in Ukraine:

- adjustment of foreign products to local standards and needs;
- utilization of comparative advantage in labour costs, especially in such areas as software but it is difficult to identify such investment
- utilization of some specific capacities. For instance, Russian Gazprom has bought several research institutes and design bureaux in the area of gas extraction and transportation, located in Ukraine. Historically, Ukraine was the first main gas extracting region of the USSR, and the Soviet government decided to create some research and educational establishments of this sector in Ukraine. As a result, Ukraine had a number of good specialists in this area at the moment of gaining independence in 1991.

6. Please, explain changes in modes of funding of R&D in your country? Modes of funding are: institutional (statutory, core or basic funding); programme funding (portfolio of projects which together make programme), project funding and individual grants. Please, use data whenever available.

The branch sector was the biggest in the Soviet times. Since the collapse of the USSR, institutional funding of this sector declined significantly. Thus branch institutes rely mostly on direct contracts with enterprises or foreign companies.

In the case of the Academies, they receive about three quarters of the budget funding, which is about 80% of their financing. It is interesting that in the Soviet times National Academy received only 50% of its financing directly from the budget, the rest were from contracts with enterprises. Now basic or core funding comprises about 70% of financing from the budget. The rest of budget money are going on competitive basis (see above). Grants and programs contribute less than 10 % to overall financing of the Academy. However, as our survey of STCU activities in 2004-2005 showed, a lot of foreign grants are not fixed in the official statistics, as they are going directly to the scientists, not to the research institutes.

The State Foundation for Fundamental Sciences (the only state Foundation that distributes grants, other grants are distributed through ministries and agencies) distributes 9 million Hryvna per year, which is less than 1% of all budget money. So, the role of the Foundation is limited.

Higher education sector receives much less than the academy, despite from the formal point of view it has more specialists with scientific degrees. However, they are overloaded with learning obligations, and they have very limited opportunities to do research. The mode of financing of the sector's research has changed insignificantly.

In which of institutional sectors changes in modes of funding were the biggest? Why? Explain.

The modes of funding were most serious in the branch sector, the changes were essential, since they were cut out of institutional funding and from their traditional partners and their ministries.

Does the government strike a balance between institutional (statutory), programme funding and specific project-based funding? Please, explain.

In the case of academic sector, government tries to increase the share of competitive funding to 30-35% but these attempts are introduced only formally.

Does the government organise competitive and transparent R&D funding schemes? If so, please provide details – scheme structure, funding, target audience, evaluation board/methods, means of submission, evidence of success, etc.

Different ministries and agencies have unclear functions, which overlap each other often. The mechanism of the state S&T and innovation programs was introduced in 1990s. However, the level of financing of these programs was inadequate. In 1990s, the programs received less than 30% of money, they've claimed. In some cases the level of financing was less than 3%. There were a lot of development programs, which were created only under the pressure of different influential groups, such as metallurgy 'barons': in 1998-2000 this group received special privileges in taxation for modernization of the sector on innovation basis but, in fact, deep technological restructuring has not been implemented.

Key for understanding of innovation policy in Ukraine is the selection of the innovation projects. The state could support not R&D organizations or commercial companies but innovation projects they undertake.

Innovation projects are selected on the base of Law of Expertise and Law on Innovation Priorities. Criteria for project selection for further consideration:

- project has to be relevant to the national priorities in S&T and innovation sphere (these priorities are changing every five years by the parliament);
- project has to aimed at the practical implementation of the new and high-tech or energy-saving technologies or competitive products;
- financial indicators of the project have to be justified, and documentation has to meet technical, ecological and social standards;
- technical characteristics of the new production have to meet high standards;
- legal problems, related to the project, have to solved in advance;
- financial and legal status of the enterprise, that will undertake the project has to be adequate to the established goals.

Special Inter-ministerial Commission is responsible for project selection. It includes representatives of different ministries and state agencies. The Commission has different sections, which are responsible for different sectors of the economy (engineering industry, agriculture and so on).

The competition is open. It starts after announcement both in the Internet and in the media (in specialized journals). The announcement and condition of the competition are declared well in advance.

Another instrument of the innovation policy – loans from the State Innovation Fund and the State Innovation company have been ineffective with very low rate of loan return (bad debts). At the beginning of 2007 the Cabinet of Ministries announced measures of direct financial support of innovation activities (Decision N 326, March 1, 2007). The Cabinet of Ministries is ready to compensate interest rate payments to banks for companies, which had innovation projects in 2006. Compensation will be made not to all innovative firms but to those who will be selected as a result of special procedure, determined by the cabinet of Ministries.

Probably, the best example of innovation policy is related to two technoparks, based on Institutes from the National Academy of Sciences. The idea of technoparks is very popular since the beginning of 1990s. The project of creation of the first technopark (in Brody, Western Ukraine) was not successful, as the organizers could not develop the right strategy of its development. In addition, disputes on property rights on land and buildings have created business environment, which has not stimulated emergence and expansion of new companies. In 1999 new attempt to create technoparks was made. It is important to mention that according to the legislative documents on technoparks, innovative projects, not companies themselves could receive different types of support from the side of the state. After several years of relatively successful development, all privileges to technoparks were abolished in early 2005. Only in May 2007 the new law on technoparks passed the first hearings (Law N1064-V on May 22, 2007). The new law determines IPR, the rights and duties of the park's management, definitions of the basic elements of technoparks and so on. It is also establishes 0- level custom duties on import of new equipment and raw materials, which are not produced in Ukraine.

7. What evidence is there of university/academy/institutes-industry links in your country (e.g. science-industry platform/centres of excellence¹, technoparks, innovation/R&D programmes requiring R&D -industry consortia, etc)?

In Ukraine these links are fragmented. The government pays limited attention to their promotion. There is no special program in this sphere, except the above-mentioned technoparks and, probably, cooperation between some leading research institutes, universities and companies in Kharkiv (Monocrystal Institute and some others).

8. What evidence is there of technology transfer support infrastructure in your country (e.g. technology-transfer offices in universities, training schemes for scientists on IPR and technology commercialization issues, support to university spin-outs, incubators)? Please, cite successful examples of these activities? Explain factors behind their success.

Infrastructure technology transfer includes corresponding legal regulations, technoparks, business incubators, training programmes on innovation and technological management. It is important to stress that Ukraine has established its national office for intellectual property only in 1990s. Now it works actively in filing patents and protecting different types of intellectual property. There are also several venture funds, which support new companies but innovation companies are very rare among their clients.

The most successful examples of innovation projects a, related to technology transfer are associated with two technopaks.

Technopark, which is based on Welding Institute, had 13 projects in 2006, while technopark Monocrystal Institute had 25 projects.

Almost all project of Welding Institute technopark are related to the welding technologies and equipment but some of them are aimed at the technologies, related to agricultural machinery and new energy saving technologies. The most famous project of the technopark is aimed at creation of the new technology of connecting different parts of human skin after the medical operations.

Projects of the technopark from Monocrystal Institute are aimed largely on obtaining new materials and purification of different substances, which could be used in medical and food industries.

¹ Science-industry platforms/centres of excellence are public-private groupings of universities, research laboratories/centres, industries and institutional public actors sharing the common objective of structuring, enhancing and developing joint research activities. The main objective is the improvement of applied research and the exploitation of research results.

B. Changes in institutional structure of R&D as depicted in R&D statistics

Gross domestic expenditure on R&D (GERD), by sector of performance and source of funds (Euros)

In million €		1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
executed by	financed by												
All sectors	All sectors		406.4	624.1	455.6	353.7	406.9	505.3	519.2	597.1	643.3	807.6	815.0
	Business enterprise sector		217.2	357.6	297.9	150.1	168.4	207.7	214.8	257.3	264.9	315.9	319.7
	Government sector		162.1	221.0	131.2	97.5	122.2	156.1	145.8	177.7	219.3	267.8	318.4
	Higher education sector												
	Private non-profit sector												
	Abroad						81.9	94.9	115.4	135.8	145.3	137.5	196.9
Business enterprise sector	All sectors		283.9	467.0	347.1	260.4	306.2	373.4	371.6	451.4	462.7	558.6	522.0
	Business enterprise sector		191.2	320.2	269.2	130.4	141.4	180.1	184.0	227.6	229.6	272.3	275.7
	Government sector		73.0	107.8	57.9	51.9	60.3	68.7	46.8	75.6	89.1	77.8	84.7
	Higher education sector												
	Private non-profit sector												
	Abroad						88.5	110.1	130.2	139.2	130.2	172.2	149.7
Government sector	All sectors		97.4	122.3	87.4	60.0	80.2	105.9	119.6	118.0	151.5	210.9	244.9
	Business enterprise sector		17.8	26.8	21.1	12.0	19.6	20.2	21.3	21.0	25.5	30.9	30.8
	Government sector		73.2	90.7	61.1	39.3	50.4	73.2	84.1	86.1	114.3	168.8	203.9
	Higher education sector												
	Private non-profit sector												
	Abroad					4.9	5.3	4.5	4.9	5.1	6.2	6.0	6.7
Higher education sector	All sectors		25.1	34.7	21.1	15.6	20.4	26.0	28.0	27.6	29.0	38.1	48.1
	Business enterprise sector		8.3	10.6	7.5	7.7	7.4	7.4	9.5	8.7	9.9	12.8	13.2
	Government sector		15.9	22.5	12.2	6.3	11.5	14.3	14.9	16.1	15.9	21.2	29.7
	Higher education sector												
	Private non-profit sector												
	Abroad						1.1	1.1	0.7	0.7	1.0	1.0	1.4
Private non-profit sector	All sectors												
	Business enterprise sector												:
	Government sector												:
	Higher education sector												:
	Private non-profit sector												:
	Abroad												:

Researchers by sector

Researchers (FTE)	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
All sectors	147,740			100,912	94,726	89,192	89,366	85,211	83,890	85,742	85,246	80,497
Business enterprise sector	103,269			62,235	57,252	51,071	47,867	45,327	44,002	44,511	43,628	39,407
Government sector	31,132			27,400	26,846	27,866	29,220	31,066	31,190	32,304	32,864	32,665
Higher education sector	13,339			11,277	10,628	10,255	9,279	8,818	8,698	8,927	8,754	8,425
Private non-profit sector												

Country Briefing Report – Policy Monitoring in Ukraine BRUIT project

1. What lessons can be drawn from Policy Implementation?

1.1 Lessons from the Evaluation of Innovation Policy Measures

The positive changes in Ukrainian innovation policy formulation and implementation are as follows:

- Preparation of various laws in the innovation sphere, which cover different aspects of innovation activity;
- Declaration of innovation development as a key priority at the national level and attempts are being made to implement different innovation related programmes;
- Creation of the national patent system and its development in accordance with international standards;
- Creation of specialized state agencies responsible for R&D and innovation;
- Attempts are being made to stimulate development of different instruments of innovation support (technoparks, business incubators, direct financing and favourable tax regime for R&D organizations).

The negative aspects of the process of forming innovation policy are the following ones:

- The Ukrainian legal system is not harmonized as some lobbying groups, with the help of the Law on Budget, can stop implementation of the most important clauses of the laws, which are aimed at supporting innovation;
- Innovation related programmes are numerous and in the past it was difficult to find money for their realization. It is much better to have fewer programmes but with better funding;
- Ukraine has very few US or EU patents, in comparison with other countries of the region, even with countries of smaller size. Partially, it can be explained by relatively high costs of patenting in these countries. Also, the state has no special programme to support international patenting, despite lengthy ongoing discussions concerning the need for such a programme;
- Specialised state agencies expected to support innovation have overlapping functions, which are not clearly defined;
- Support of specialized instruments and elements of innovation infrastructure is not very effective, as the demand for innovation is low and the rules for operating technoparks have been revised substantially (and mostly negatively) within a relatively short period of time.

Two clear examples illustrate the contradictions that exist in innovation policy in Ukraine. The first relates to the creation of technoparks (discussed earlier, see 4.2). The second concerns the implementation of state-sponsored S&T programmes. In many state S&T programmes, the importance of innovation is mentioned but, in fact, it is largely overlooked when it comes to the specific objectives, implementation and evaluation of the programmes.

These programmes were initially created in the early 1990s. In fact, it was an attempt to replicate Soviet-style programmes of scientific and technological development within the context of an independent Ukraine. Implementation of these programmes was not successful for several reasons:

- decline in demand from the side of local and Russian industries after the collapse of the USSR and as a result of economic crisis;
- inadequate financing of the programme (e.g. only 30% of the stated budgets actually being provided);
- poor co-ordination mechanisms at the level of government;
- misunderstanding of market realities from the side of research institutes and design bureaux;
- negative changes in industrial structure of the national economy.

The failure of these programmes is illustrated in the declining number of new products and new technologies declared by innovative enterprises. The objectives of the bulk of the programmes have not been reached due to low financing and poor management.

1.2 Review of Good Practice

Initially, in the mid 1990s, technoparks were considered as free economic zones (according to the Law on Basic Foundations of Creation and Functioning of Special Economic Zones, 1992). Now 11 such zones exist in Ukraine. However, all of them have a non-technological orientation. Enterprises in these zones are largely involved in the resource based production of goods and services. In many cases these zones were created to reduce socio-economic problems of former coal-mining or ferrous metallurgy areas.

The first technopark was created in 1994 in Brody, Western Ukraine, near the Polish border in the territory of a former missile base. Unfortunately, this first attempt was not successful. The money, which was provided by the EU, was stolen or misused, and Brody technopark itself was converted into a large warehouse by a group of local entrepreneurs and their Polish partners in the mid 1990s.

In July 1999, another Law on Special Regime of Investment and Innovation Activities for Technological Parks was passed through Parliament. According to this Law, three new technoparks with some real financial privileges for innovation companies were created – Technopark in the Paton Institute for Welding (Kiev), Technopark in the

Institute of Semiconductors (Kiev), and Technopark in the Institute of Momo-crystals (Kharkov). The key features of these technoparks are as follows:

- 1) All were created on the basis of leading institutes of the National Academy of Sciences of Ukraine with strong technological orientations;
- 2) Tax and customs privileges could not be received by the institutes themselves but only by the specially registered innovation projects performed in them.

Tax incentives included the possibility to import all materials and equipment needed for the innovation project without paying custom duties; the possibility to obtain tax credits; reduced taxes and access to cheaper credit (with state guarantees). Bearing in mind the high bank interest rates in Ukraine, the last step was especially important for the new technoparks.

Later 13 more technoparks were created in Ukraine, most of them between 2003 and 2004. The complete list of existing technoparks is given below:

1. Paton Welding Institute
2. Mono-Crystal Institute
3. 'Uglemash' (Coal-Machine)
4. Semiconductor technologies and materials
5. Institute of Technical Thermo-physics
6. 'Ukrintech'
7. Kyiv Politechnika (National Technical University KPI)
8. Intellectual Information Technologies
9. Agrotechnopark
10. Scientific and Learning Equipment
11. Resources of Donbass
12. Textile
13. Ukrainian Microbiological Centre of Synthesis and New technologies
14. ECO-Ukraine
15. 'Yavoriv'
16. Engineering Technologies

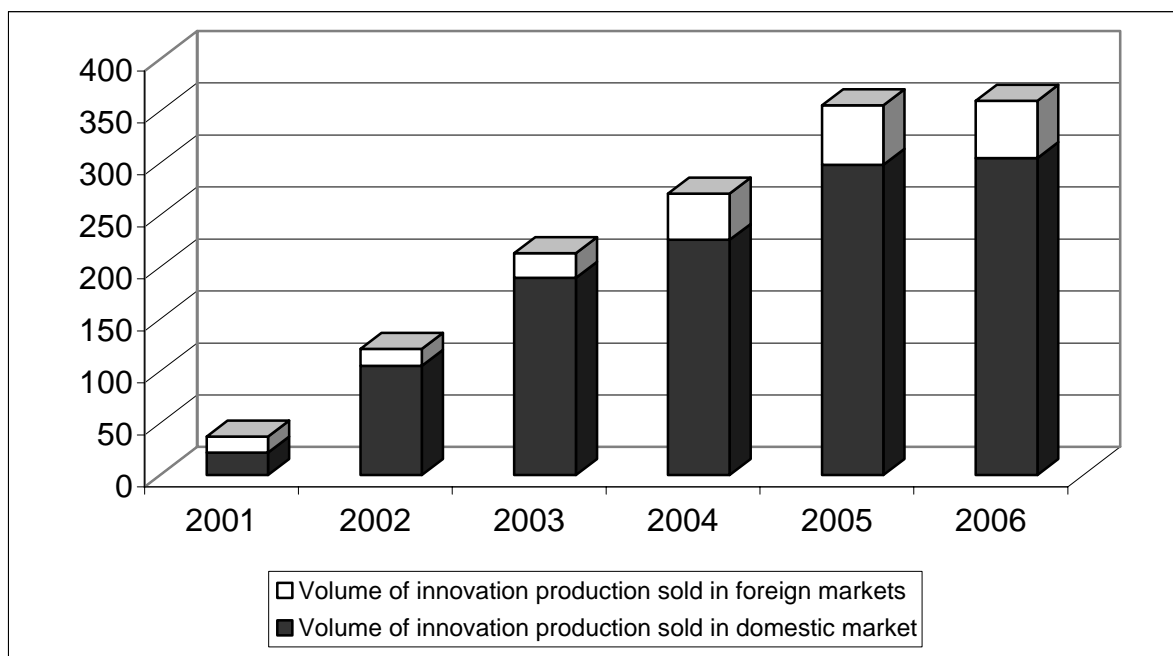
It is important to note that some technoparks have not been created on the basis of institutions or organisations with real S&T and innovation potential of the organizations but as the result of forced decisions, lobbied by influential politicians and businessmen. For example, Technopark 'Yavoriv' in Western Ukraine has no research organization or innovation company in its structure. It is used as a hub for export-import operations.

At the beginning of 2005, almost all the privileges afforded to technoparks were abolished. As a result, only 8 technoparks out of 16 are conducting business activities. Of the eight that are not, some simply had no time and reason to commence operations following the ban on their special treatment. Others had not even been completely established prior to the cessation of privileges.

Additionally, it is important to stress that only two technoparks can be considered as successful examples – Paton Welding Institute and Mono-Crystal Institute. They

represented 98% of all innovation products being produced in technoparks between 2000 and 2006.

Picture: Dynamics of innovation production of Ukrainian technoparks, 2000-2006 (million euros)



Source: Technological Parks in Ukraine, 2000-2006: Economic and Statistical Survey. – Kiev, NANU, 2007, 25 p. (in Ukrainian).

Despite their many privileges, technoparks contributed over a half billion hryvnas (approx 70 million euros) of different taxes to the central and local budgets between 2000 and 2005. They also created more than 3000 new jobs.

The technopark based at the Paton Welding Institute had 13 projects in 2006, while the technopark based at the Monocrystal Institute had 25 projects. It is worth mentioning that no new innovation projects were registered in technoparks between 2005 and 2006. This has led to stagnation in innovation products in 2006. In fact, it was at the same level as in the previous year. On the other hand, the share of technoparks in the total volume of innovation production in Ukraine declined from 10% in 2003 to 7.4% in 2006².

Almost all projects at the Paton Welding Institute technopark are related to welding technologies and equipment but some of them are aimed at agricultural machinery and new energy saving technologies. The most famous project of the technopark is aimed at the creation of a new technology for connecting different parts of human skin after medical operations. This project has been rather successful but political rows on privileges for technoparks have stopped all further developments.

² Technologiczni parky Ukrainy v 2000-2006 (ekonomiko-statistichni oglyad). – Kiev, NANU, 2007, 25 pages (Technological Parks in Ukraine: Economic and Statistical Survey – in Ukrainian).

Projects at the Monocrystal Institute technopark are aimed largely at obtaining new materials and purification of different substances, which can be used in medical and food industries.

As for other technoparks, they have started some projects but the bulk of them have been frozen due to political and economic uncertainty over the future of technoparks. At the beginning of June 2007, the first hearings of the new law on technoparks passed through the Ukrainian Parliament but it is unclear when it will pass into state law as there are conflicts on the issue between the major Ukrainian parties.

Exhibit: Summary of good practice cases in Ukraine

Year	Title of good practice case	Justification for selection
2002	Technoparks	Growth of innovation production
2003	Technoparks	Growth of innovation production
2004	Technoparks	Growth of innovation production
2005	Technoparks	Stabilization of innovation production