



New trends in higher education

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# **Entrepreneurialism and the transformation of Russian universities**

**Michael Shattock (Ed.), Evgeni Kniazev, Nikolay Pelikhov,  
Aljona Sandgren, Nikolai Toivonen**



**International Institute for Educational Planning**

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## **Entrepreneurialism and the transformation of Russian universities**

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## LIST OF ABBREVIATIONS

ACA	Academic Cooperation Association
AES	Atomic power station
AM	Academic Mobility
AO	Stock company
AOZT	Stock company with limited legal responsibility
AS	Academy of Science
AS RF	Academy of Science of the Russian Federation
CBS	Copenhagen Business School
CIMO	Centre for International Mobility, Finland
CSRS	Centre for Science, Research and Statistics
DAAD	German Academic Exchange Service
DSTU	Don State Technical University
EAIR	European Association for Institutional Research
ECTS	European Credit Transfer System
ENQA	European Network of Quality Assurance in Higher Education
ERA	European Research Area
ERIC	Education-Research-Innovation Complex
ESIB	National Unions of Students in Europe
ESMU	European Centre for Strategic Management for Universities



## Entrepreneurialism and the transformation of Russian universities

ETAPE	European Consortium for Technical Assistance for Programmes in Education
EU	European Union
EUA	European Universities Association
Eurusnet	European-Russian Dissemination Network
FTE	Full-time equivalents
FRG	Federal Republic of Germany
GATS	General Agreement on Trade in Services
GDP	Gross Domestic Product
GIFO	State financial obligation to a named individual
HEI	Higher education institution
HMSO	Her Majesty's Stationery Office
ICT	Information and communication technology
IMEC	Inter-University Micro Electronics Centre
IMHE	Institutional Management for Higher Education
INTAS	Independent international association formed by the European Commission to promote East-West scientific cooperation
INYAZ	Moscow State Linguistic University
IREX	International Research and Exchanges Board
ISABA	Ivanovo State Architectural-Building Academy
ISPU	Ivanovo State Power University
ISUCT	Ivanovo State University of Chemistry and Technology
IT	Information technology

LETI	Saint Petersburg State Technical University
LGU	Leningrad State University
LSE	London School of Economics
MBA	Master's degree
MGU	Moscow State University
NATO	North Atlantic Treaty Organization
NCIC HS	Northern Caucasus Innovation Centre of the Higher School
NPO	(Russian scientific-industrial company)
NRW	Northern Rhine-Westphalia
OECD	Organisation for Economic Co-operation and Development
PetrSU	Petrozavodsk State University
PhD	Doctor's degree
QAA	Quality Assurance Agency
RAM	Resource Allocation Model
RCAM	Russian Council for Academic Mobility
R&D	Research and development
RF	Russian Federation
RISSED	Regional Innovation System of Social and Economic Development
RR	Rostov Region
RSU	Rostov State University
SDB	Special Development Design Bureau

**Entrepreneurialism and the transformation of Russian universities**

SPSEU	Saint Petersburg State Electrotechnical University
SRCAM	South Russian Centre of Academic Mobility
SSTU	Saratov State Technical University
STU	State Technical University
SWOT	Strengths-weaknesses-opportunities-threats analysis
TES	Thermo-Electric Power Station
Tomsk PU	Tomsk Polytechnic University
TNK	(Russian oil company)
TPU	Tomsk Polytechnic University
TSU	Tomsk State University
TSPU	Tomsk State Pedagogical University
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UK	United Kingdom
UNN	Nizhnii Novgorod State University
UNU	United Nations University
UPP	Training centre with production functions
USA	United States of America
USSR	Union of Soviet Socialist Republics
VAT	Value added taxes
VSU	Voronezh State University

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## PREFACE

*Michael Shattock*

The initial intention of this book was to encourage good practice in European and Russian universities based around the Russian higher education system. However, as the project developed we adopted a more ambitious objective, while not weakening our commitment to dissemination within Russia (in Russian). We decided to use the opportunity that the preparation of the book provided to address a wider international audience on the changes that are taking place in Russian higher education. Too often the state of the Russian university system is characterized as chaotic, fragmented and liable at any moment to collapse. On the contrary, what I found, and what this book portrays, is a system which has adapted to extraordinary social and economic turmoil with considerable vitality, and which offers new models and structures forged out of circumstances which have no parallel in advanced industrial economies in the West. Some of these models and structures are genuinely original and deserve consideration in highly developed higher education systems outside Russia. This is not to say that Russian higher education does not remain in considerable disarray and that the words 'chaotic' and 'fragmented' should no longer be applied, but the book does provide evidence that some institutions are in the process of radically remodelling themselves in very interesting ways.

The book includes contributions by Russians and non-Russians and some chapters include both in their joint authorship. Essentially there are five sections: an introduction, three sections co-ordinated by Kniazev, Toivonen and Pelikhov respectively, on strategic management, the generation of non-state income and regional



development, and a final section concerned with internationalization and academic mobility. Each of these latter four sections provides case studies of change and adaptation undertaken by particular universities or groups of institutions reflecting their academic focus, regional economic imperatives, or the energy with which they confronted the problems of survival in rapidly deteriorating circumstances. There are lessons to be learnt internationally from the way Russian universities addressed these issues.

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## INTRODUCTION

### **1. Overview: Entrepreneurialism and the transformation of Russian universities**

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Over the last two decades we have seen a transformation in higher education systems worldwide, driven by an expansion in student numbers funded at marginal cost only and international competitiveness in research. In Europe the evolution of mass higher education and the potential translation into universal higher education has led to the introduction of more market-led funding systems, financial devolution from state bureaucracies to institutional management and an encouragement to institutions to generate non-state funding. This, as Williams describes, has changed the political economy of higher education. In the United States of America (USA), in Australia and most recently in the United Kingdom (UK), public higher education systems have been forced to charge fees to an increasingly high proportion of students. At the research level, not only are systems becoming more stratified in terms of research intensive and teaching intensive institutions (China, the UK, the USA) but the recognition of the importance of university-based research to regional economies has led to the development of explicit policies towards investment in research designed to stimulate economic growth. This has been accompanied by a decentralization of higher education from hands-on state control to greater institutional autonomy. The Swedish experience described by Ekholm is paralleled across Europe.

In no country, however, have the changes been so dramatic as in Russia. In most countries changes have evolved gradually. Thus in the UK (perhaps the most radical country, in a higher education sense, in Europe) the Thatcher revolution, begun in 1980, was accelerated by a very strong wave of student number expansion in the early 1990s but was only finally achieved by a Labour Government post-1997. In the rest of Europe changes have come more slowly and a fee market for home students has not yet developed except in the comparatively small number of private universities. In Australia the Dawkins reforms of the late 1980s have only recently, in 2003, been brought to fruition in a full fees policy. In Russia on the other hand the change in the political regime and the collapse of the national economy from the early 1990s has forced change on a higher education system, that was wholly unreformed, in the sense that it was wholly state controlled and state funded, at a precipitate rate. Whereas all European countries faced fluctuations in their economic fortunes, the demise of the Soviet Union brought simultaneous economic and political turbulence that affected not just the universities but the whole of society across a huge continent. Refocusing the university system in such conditions was far beyond the capabilities of a central government, itself significantly destabilized. Moreover, as with other East European systems, the effect of state control over such a long period on institutional leadership and management skills, together with the dominance of academy of science institutions over the research agenda, deprived the universities of a set of mechanisms to help them to chart their own course when political and other controls were weakened. So severe was the financial situation, culminating in 1992 when substantial elements of the state budget, already reduced by mounting inflation, were withdrawn, that the transformation required was driven more by the need to survive than by the adoption of new considered policies of adjusting to changing market conditions. Financial crisis was thus a forcing house of change. Moreover the

growing recognition that national economic regeneration had to be led by regional, rather than central government, led to a loosening of central government controls and the recognition that institutional survival was in great part dependent on universities' own efforts rather than any reliance on systemic assistance. This has produced haphazard, and individual institutional policies dependent on local economic conditions, not systemic change (except in relation to fees). Kitaev, Sandgren and Toivonen provide valuable accounts of the development of the funding crisis, the steps that universities took to survive and the national funding structures that have emerged.

What is remarkable is the survival routes that different universities have taken and the new organizational forms that have been created. In Western Europe and Australia, the Entrepreneurial University (Clark, 1998), the Enterprise University (Marginson and Considine, 2000) or, the concept of Academic Capitalism (Slaughter and Leslie, 1999) have become recognized new approaches to institutional development based on financial diversification. The concept of regionalism and the impact of universities on local and regional development have been described by Goddard (1999). The case for strategic management in universities in competitive market conditions has been outlined by Shattock (2000). But the context for these developments bears little comparison with Russia during the 1990s and the new forms and structures emerging in Russia are, not surprisingly, different: In some cases, indeed, they represent wholly new models of higher education organization. Entrepreneurialism, as Sandgren suggests, has been more a survival mechanism in Russia than a way of developing the 'self reliant' or the 'stand up' university described by Clark (1998), while regional/industrial collaboration between universities and public and private enterprises has been more a life line for regional economies than competitive boosters for regional economic activity as envisaged in most Western

countries and have been embarked upon by many Russian universities as part of an economic survival package rather than, as in many Western universities, under the prompting of government agencies. More remarkable still, Russian universities over this period, 1990-94, almost abdicated from what could have been a profitable market, that of overseas students, where as Zornikov points out numbers fell by over 500 per cent at a time when UK, European and Australian universities, for example were engaged in developing a new hugely important financial market for themselves, as again Zornikov makes clear. Thus Russian universities gave themselves an even steeper hill to climb.

There can be no doubt that where Russian universities have been transformed it has been by adopting entrepreneurial methods, but, as Groudzinski says, not all universities have taken such steps and some large scale classical universities have declined. On the other hand his account of the organizational steps taken at the University of Nizhnii Novgorod – the restructuring of faculties, the creation of new faculties, the establishment of a ‘project orientated’ approach in which academic staff worked in interdisciplinary teams to develop new activities and the introduction of more flexible working and leadership arrangements – all undertaken to make the university more responsive to environmental change – represents an almost classic account of organizational change inspired by extreme external market conditions. Kniazev in his overview to the section on strategic management reinforces the point that a key element in whether universities succeed in these new conditions is their commitment to what he describes as a “permanent investigation of the external and internal environments”. Subsequent chapters in this section describe how Tomsk State, Tomsk Polytechnic and Tomsk State Pedagogical Universities have adapted themselves to the new student tuition fee markets and how the St. Petersburg State Electrotechnical University has reformed itself by new resource management and quality regimes.

An extremely important contribution to Russian university entrepreneurialism was the central government's decision to allow universities to admit fee-paying students. Toivonen's overview to the section on the generation of non-state income gives a clear account both of the legal basis under which Russian universities operate and the student funding regime. There is a tendency, encouraged by the description of fee-paying students as 'commercial students', to see this activity as simply about finding additional resources but, as Popravko and Rykun suggest, the objectives for entering the fee paying education market can be described as both 'motivation and justification'. There would have been no way that Russian universities could have addressed the swing towards humanities and vocational social science subjects, which was demanded by societal changes under state funding arrangements, without the freedom to accept increased numbers on a fee-paying basis: Either universities would have remained frozen in a disciplinary base which was inappropriate to the post-Soviet Union economy or the funding regime would have been so poor that academic standards would have declined very sharply. The approach to fee charging is strikingly similar to that successfully adopted in Australia. What is perhaps new, certainly in Europe (though there are parallels in the US during the great expansion of students numbers in the 1950s and 1960s where flagship state universities opened subsidiary campuses in other urban centres within their state) is the dramatic steps to diversify universities by opening new campuses adjacent to new student markets and engaging in rampant competition with neighbouring university institutions. When we read of high-ranking institutions in Moscow and St. Petersburg opening more than 20 branch campuses in other parts of Russia we must recognize a form of entrepreneurialism which is qualitatively different from anything that has been seen elsewhere in Europe.

It is clear that, as with all markets, the student fee market in Russia will at some time face a shake out but even when this has taken place we may expect to find that it has performed a radical transforming function on the university system, changing the shape of universities, broadening their range of disciplines and making their academic decision-making much more responsive to external environmental conditions. The problem, as in all rapid expansions of student numbers, is that quality control mechanisms, implicit or explicit, are inevitably loosened. It will be important to reassert them or marked variations in the standing of qualifications in various universities, already considerable, will undermine perceptions of quality in the system as a whole.

However, student fee income is by no means the only driver in the diversification of university income, as the chapters on Petrozavodsk State University (Toivonen), Tomsk Polytechnic University (Agranovich), Orel State Technical University (Golenkov and Stepanov) and Tyumen Oil and Gas University (Karnaukov) make clear. Here we see a depth of involvement with industry and the development of natural resources which it would be hard to find anywhere else. As Toivonen says about his own institution, Petrozavodsk State University, the driver is not solely the need for additional funding but the appreciation that a partnership between a university and major enterprises, private and public are the key to the economic future of the regional community in a world of global competition for natural resources. These accounts of the partnerships between universities and commercial enterprises, not just in research but in improving the regional skill bases, suggest models for what so many Western governments are trying to achieve by seeking to link universities much closer to the knowledge economy. Again, however, there are risks involved: The success of Tyumen State Oil and Gas University in generating 85 per cent of its income from non-state sources, particularly from the industries which it works with, exposes

it to the danger of exchanging control from the state to control by its industrial partners. As markets change, as enterprises refocus their activities and as regional and global economies recover it will be important for universities to re-emphasize their sensitivity to changes in the environment or they risk being plunged once again into conditions of turbulence. What is impressive about these cases is the extent to which these universities have maintained a concern for academic values in research while also addressing the applied problems which their industrial partners are presenting them with. It is also interesting to compare these cases with Shattock's description of how the University of Warwick diversified its funding base albeit in a much more stable environment.

A characteristic of these latter universities' endeavours is the extent to which their partnerships extend not just to the industries themselves but to regional and municipal governments. The section on regional development extends the consideration of the regional governmental involvement and how critical this has been to the creation of regional innovation infrastructures. The chapter by Blokhin *et al* describes how in the Rostov Region various organizational structures were tried before an integration of the High Technology Association involving the Rostov regional government, the cities of Rostov, Novocherkassk and Taganrog brought the universities and industry into a tripartite partnership to be implemented through the South Russian Centre of Academic Mobility (SRCAM). The close relations between the Rostov Region and the experience in Northern Rhine Westphalia illustrates how success in one European region can be used to stimulate new structures in Russia. Pelikhov's overview chapter discusses the collaborative role of universities in these kinds of integrating structures and whether it can be adequately maintained through the traditional Council of Rectors forum, and the impact such involvement may have on internal management structures.



What comes out of this section, and is described particularly in the chapter by Atoyán *et al* is the emergence of a whole new structure in the Saratov Region which the authors describe as Education-Research-Innovation complexes (ERICs) which bring together research, innovation products and the manufacture of high-tech knowledge intensive goods and concentrates all phases of innovation within one organization. A similar development is described at Orel State Technical University. Another case study, drawn from the Ivanova region (Antipina *et al*), shows how universities and Academy of Science research institutes have founded scientific-manufacturing organizations and laboratories to address particular industrial problems. This chapter also stresses (as do others) the need to establish a clear regulative framework for intellectual property ownership and exploitation. Kniázev emphasizes the variety of tripartite structures that are emerging in these complexes, including one at Voronezh which reaches down into the high schools.

The final section deals with the importance of international co-operation for the modernization of Russia. Zornikov shows how foreign student numbers in Russia have fallen and emphasizes their value to universities and to society and the ways in which reform must take place to rectify the situation. He emphasizes the essential part that internationalization must play in transforming Russian higher education and describes the steps one university, Veronezh State University, has taken. Pelikhov and Zverev describe the history of the academic mobility network of Russian Centres of Academic Mobility (RCAMs) and the role they are playing in influencing national policy. What is impressive in the account of the projects undertaken by the South Russian Centre of Academic Mobility (SRCAM) is the range of activity which extends far beyond an internationalization agenda to devising regional strategies in raising skill levels, founding job centres for graduating students and developing a regional innovation structure, as well as looking at the export of Russian

educational services. The section concludes with a chapter by Ekholm on the Bologna Process which as Zornikov points out, must act as a marker for the development of the Russian higher education system if the system is to derive the benefits of a close integration in the future with European higher education.

Unlike many other higher education systems, the Russian system is being transformed not by state action, but paradoxically by state inaction. As Atoyán *et al* say, the Russian economic system can be described “as chaotic or as a non-organized system in which organizational and regulatory structures are very vulnerable”. But out of this chaos Russian universities are carving new futures for themselves. Kniazev’s account of how the University of Nizhni Novgorod addressed its future against a background of difficulties and after a decade of change has increased its student numbers, including at the PhD level, changed its faculty and departmental structure and reduced its dependency on the federal budget to 27 per cent represents a model of what one university has achieved. These futures are, however, by no means stable and many of the financial mechanisms may not, in themselves, be sustainable but they represent remarkable entrepreneurial responses to economic survival challenges which few higher education systems have had to face. These entrepreneurial responses are transforming the Russian university landscape at a speed unlike anywhere else in Europe and will continue to do so for some time, and they are also producing new structures and forms which may be of wider interest than just within Russia itself. But the capacity to engage in self-reform is not spread evenly throughout the system and a main purpose of the Tempus project has been to provide something more than exhortation, but clear examples of how Russian universities have confronted the problems of an unstable economy, new student demands, regional development and a loss of international standing so that those universities that have not been able so far to adjust to the new

environment can begin to do so in the confidence that others have gone before them.

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## 2. University funding by the central Russian government: where the ends meet?

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### Effects of transition to a market economy upon government funding of Russian universities (1990-2003)

Before the market reforms in the former Soviet Union, university funding was totally dependent on government funding and was rather generous, or at least mostly sufficient to meet the funding needs. The

market reforms effectively cut government funding, such that only staff salaries were funded. However such funding was not indexed to inflation and was often delayed up to several months.

Before the collapse of the Soviet Union, Russia attained high rates of participation in education, producing large numbers of skilled graduates, and cutting-edge research. Achievements in tertiary education were particularly noteworthy in mathematics, natural sciences, and engineering. However, the introduction of a market economy resulted in a sharp decline in public funding for colleges, universities, and scientific academies. Demand for engineers and technicians, particularly in military industries, fell sharply, and interest in fields of study relevant to a market economy (economics, management, accounting, marketing and law) surged. Interestingly, the quickening pace of both social and technological change increased the rate at which skills became obsolete and undermined the effectiveness of the hyper-specialization that had characterized tertiary education under socialism. Demand for broad skills such as critical analysis, problem solving, and teamwork greatly increased.

Colleges, universities, and scientific academies in Russia and other transition economies were struggling to adjust to these new realities. Institutions responded by reallocating money and support away from traditional fields to new areas of study - updating curricula, creating more flexible training programmes for students, and diversifying sources of funding. Many tertiary institutions are involved in commercial activities, including contract research, consultant services, and the sale of training services to private enterprises, thus contributing to the development of a tertiary education that is more responsive to economic and labour market needs.

The prestige of higher education plummeted at the beginning of the market reforms in the early 1990s because the opportunity cost

of learning was astronomic. Easy jobs in the emerging private and informal sector were bringing more income than traditional occupations existing during the Soviet power. Self-trained businessmen dropped out of universities to grasp market opportunities. There was an exodus of the best teaching staff to the booming banking, credit and real estate sectors. Those teachers who stayed often had other part-time jobs. Official salaries of professors paid by the central Ministry in the most prestigious universities of Moscow and St. Petersburg do not exceed US\$50 per month. Only some top-ranking universities such as Moscow State University, the Financial Academy, and the Higher School of Economics manage to pay up to US\$300 per month through their extra-budgetary resources and income-generating activities. The student-teacher ratio was officially kept as low as 1 teacher to 8 students to allow teachers more time flexibility for part-time jobs. Moscow State University reduced it to 1 to 4.

With market stabilization in the mid-1990s, the value and esteem of higher education returned. The private and informal sectors were saturated with workers and employees with low qualifications. Several devaluations of the Russian rouble, the tragic default of 1998 and the increasingly tough competition in the labour market forced young people to seek prestigious diplomas as a guarantee of better employment. Another important reason, for families, was that prestigious universities guaranteed postponement of the compulsory military draft. A survey in 2003 asked whether higher education had a value: 81 per cent of respondents said “Yes”; 14 per cent said “No”. This is in stark contrast with the early 1990s.

The same survey asked if it is possible to enter university without strong financial support by parents. The answer was “No” from 74 per cent of respondents. The survey also asked about the popular opinion of the regulatory role of the Russian Ministry of Education: 51 per

cent said they had no opinion; 33 per cent said they had a low opinion. Only 16 per cent of respondents said they had a good opinion (*Profil*, 16 August 2002).

### **The landscape of higher education in Russia at the time of economic liberalization**

With the beginning of the market reforms the Ministry lost control over the accreditation procedures. This was likely due to two factors: institutions' desire to survive and be self-financing at any cost and the weakened supervisory role of the central ministry. As with the entire civil service in Russia in the early 1990s, many qualified professionals left the Ministry and universities for more lucrative jobs in the private and informal sectors.

In spite of the advice of the World Bank, not a single institution with a narrow specialization was closed. On the contrary, on the one hand, the existing ones transformed themselves into universities and academies; while on the other, many more new ones were set up. Large universities started opening branches in the regions to grasp the market. Private universities were mushrooming. Private universities in Russia may be started by any individual or trust. On the one hand procedures for registration and accreditation are bureaucratic and cumbersome, but on the other they can be circumvented via corrupt officials. Universities may be registered by authorities of all levels, even municipalities. The central Ministry of Education has no capacity to control the mushrooming and thriving private sector in education. The Moscow City government has no levers to control mismanagement at universities located in the city. The federal and local legislation is not followed in practice. Private universities may make announcements in the mass media even when they do not have licences, without any risk of law

enforcement. This is particularly visible for distance education where private universities are extremely active.

Due to this lack of control and supervision, private universities grant degrees and diplomas as they wish without official recognition. If a university announcement says that it grants diplomas at the state standard, it is difficult to verify. By law only a half of the 500 registered private universities (those who passed the procedure of 'attestation and accreditation' by the Ministry) have a right to issue diplomas at the state standard. The procedure includes a visit to the institution by a team of ministry experts who check courses, teacher qualifications, the organization of the teaching process and the quality level of the graduates. An institution may have 25 major disciplines but may be accredited only for two. Official diplomas should have a central ministry rubberstamp. Parents would not be informed about that. The lack of awareness of parents and civil society at large is probably the reason for the mismanagement of the higher education system in Russia. As an example, 12,000 fee-paying students from the Voronej Institute of Economics and Law risk not receiving state diplomas because the central Ministry can officially withdraw its license. The Institute opened 26 branches in six Russian regions without the permission of authorities. The license of the 'mother' Institute did not mean that its branches were allowed to operate (*Roditel'skoe Sobranie*, 2003).

Governors of the Russian regions realized that having even universities of bad quality in their region is important for social and demographic policy. Instead of going to universities in Moscow and St. Petersburg, young people would stay in the region for their studies, marriage and future jobs. Thus regional universities fight against the 'brain drain' of bright young people from the regions to the two capitals.

All universities began opening departments for trendy disciplines – management, business administration, law, and medical sciences – even if they had no background in these subjects. The result was an overproduction of managers and law experts at the expense of engineering professions. The universities are increasingly competing with each other, offering studies that exist in other institutions. Moscow State University opened 10 new departments in recent years (compared to 17 already in existence). Among these new departments, the highest demand is for public administration, medicine and political science. Many graduates are employed in jobs that do not correspond to their education.

### **Measures taken by universities in terms of financial diversification**

Faced with falling government funding, universities had to apply a number of measures, such as introducing tuition and user fees, renting/leasing space to business, applying for support to local and foreign donors, private tuition and other income-generating activities. The introduction of tuition fees became legally possible in the early 1990s as a result of the collapse of central government funding at the beginning of the market reforms. The measure was designed to admit children from wealthy families who could not pass the entry exams. However, universities do not show the true number of fee-paying students. In Moscow State University the number of graduates in 2003 was 5,000, including 1,000 fee-paying students. Their share is steadily increasing and bound to grow. On average, 50 per cent of enrolment is fee-paying, but in reality it can be much more. Even official statistics say that the share of fee-paying students (in both public and private universities) is growing from 46 per cent of enrolment in 1999, to 51 per cent in 2000, and 53 per cent in 2001. Research shows that only 30 per cent of Russian families can afford to pay fees, but many more have to do so.



Non fee-paying students are called 'budget' students meaning that the Ministry funds their studies. Examining the files of applicants helps university managers decide on the basis of family status and projected income who should become a fee-paying student. Applicants from wealthy backgrounds have practically no chance to pass the exams successfully and become 'budget' students even if they are well prepared and qualified. This is one of the signs of the systemic deficiencies of the present pattern of higher education in Russia: when teachers are motivated to make judgements based not on academic merit but financial needs.

Implicitly, the charging of various fees is applied to all students, both fee-paying and non-fee-paying. All sorts of excuses are used. Recently one of the prestigious Moscow universities – Moscow State Linguistic University (INYAZ) – began charging an extra US\$300 for teaching a second foreign language. Setting a chain of steps leading to a particular university is another popular measure for the leading universities, usually through a specialized fee-paying lyceum or college leading to preferential treatment for entry exams in the partner university. Another milder form is so called fee-paying preparatory courses but the degree of certainty is less. Well-known Russian universities send recruiters (head hunters) to other parts of the country and more and more often to the republics of the former Soviet Union, for example, Central Asia and the Caucasus.

Many universities exaggerate the number of applicants to display high demand which in reality can be below one per cent. The highest demand is for universities teaching creative arts, finance and economics. Some 1.1 million out of the 1.3 million graduates of secondary education are admitted to higher education institutions (*Roditelskoe Sobranie*, 2002).

Private tuition is not legally allowed but in reality is a thriving business. Due to low salaries, teachers are motivated to take bribes at the entry (and all other) exams. The volume of the 'black market' in Russian higher education is estimated at billions of US dollars. On sale on the Internet and in subway and bus stations are questions and answers to tests and examinations, theses, dissertations and other learning instruments. Many universities, in particular private universities, sell their degrees and diplomas for 'life experience' for \$US1,000-5,000. Campaigns to fight corruption in education have not been successful because the vested interests of families and examiners coincide.

### **Policies of the central Ministry of Education**

There were five Ministers of Education in Russia between 1991 and 2003. Unlike the Western civil service, the leaving Minister takes his team with him, and there is usually no continuum in policy.

The Ministry had to return to manpower forecasting and planning ('goszakaz') because the labour market movements are still chaotic due to the lack of awareness of the population of projected jobs and incomes. The Ministry insisted on a return to narrow specializations in the industries where Russia has a competitive advantage, i.e. oil production, geology, mining, energy, aerospace and aviation, chemistry, and applied mathematics. There are labour shortages for these disciplines but an over-production of managers and lawyers with low qualifications.

If universities wish to receive government funding they must submit a budget proposal based on the number of student places by specialities prioritized by the Ministry. The projections are that the central Ministry should aim at a target of 170 university students per 10,000 of the Russian population, funded from the government

budget. The Ministry insists that at least 50 per cent of university enrolment should be non-fee-paying, although this would be difficult to control. At present there are 185 students in public universities per 10,000 of population but receiving higher education of sometimes dubious quality. If private universities are taken into account, the figure is 340 students per 10,000 of the population. This is more than the 'record' of the former Soviet Union – 220 students per 10,000 of population. So the ministry strategy is to fight against the proliferation of universities in terms of their number and enrolment for the betterment of their quality through competition. This strategy will be reinforced by the demographic crisis in Russia. The population was decreasing by 1 million per year in the 1990s due to low birth rate, declining longevity, collapsing family budgets, social and financial problems affecting lifestyle, and a large migration.

Does it mean that schools and universities in regions with low population density will be closed? This recommendation has repeatedly been made by the World Bank and other donors, translated in a softened manner by the many ministers of education and repeatedly torpedoed by the Russian Parliament and regional and local legislative bodies.

The former Minister Vladimir Philippov is a mathematician who studied in Western Europe. He was elected Rector of the Moscow University of Peoples' Friendship through a landslide victory over the previous rector Stanis who spent more than 30 years in office. The university was designed for students from the developing world (Africa, Asia, Latin America) and has alumni including top officials and other decision-makers in these countries. Philippov became famous for his strong leadership style and entrepreneurial management during the hard years of the beginning of market reforms. He put emphasis on financial diversification, cost-efficiency and better utilization of staff and space. His motto was "If I see no

light in auditoriums in the evening, the person in charge will be fired!” The university was earning a great deal of money through renting its space for extracurricular activities such as driving lessons, foreign languages, computer classes, etc.

When he became Minister, he tried to implement his pro-active reforms at the system level, but faced stiff resistance and opposition from the conservative lobby of top university rectors. Philippov was eager to introduce income-generation in educational finance to break the ‘socialist’ mentality of educational managers that the state is entirely responsible for provision of education. He gave examples of alumni who support education giving more funds to institutions than public authorities. He cited the example of Saratov (a city in the Volga region) where in 2002 alumni allocated 35 million roubles (\$US1.2 million) for capital expenditure by institutions. Yakutia collected 170 million roubles (\$US5.7 million). He wanted more control of educational finance and management by civil society rather than the state. He wanted to reduce duplication and parallelism in courses between universities and to eliminate those courses that do not comply with their major profile (i.e. business administration, law, management are currently taught by institutions specializing in hairdressing and food-processing). If a regional teacher training college also trains managers and lawyers, they should not be financed by the government.

He wanted competition between universities for public money, and accredited private universities to receive government funding when they train specialists in demand for vital Russian industries. Philippov estimated that at present there are only three out of 500 private universities that can compete with the public system on their potential. He wanted to develop a Russian ‘Ivy League’ of 30 leading universities to give more motivation to other universities to compete for students. He wanted the market to regulate the level

of tuition fees. If Ryazan Polytechnic or Belgorod Teacher Training announced fees of, say, \$US10,000 per year, they would not get applicants and would go bankrupt. He wanted to re-organize the central Ministry of Education to outsource non-essential departments. It would be fair to say that the role of the Ministry is already significant only in the higher education segment that is funded by it. Primary, secondary and other levels and types are funded by regional and local authorities that often ignore the Ministry's decisions.

The new Minister of Education, Andrei Fursenko, was appointed in 2004. Meanwhile the Ministry was radically restructured, in the same way as the other government bodies, to decentralize its activities to the regions. Only the higher education sector remained the area where the central Ministry kept its funding and budget functions (<http://www.gazeta.ru>, retrieved on 8 July 2004).

The main concern of Fursenko is complaints by authorities and parents about the continuing proliferation of higher education institutions of doubtful quality. These are not only new private institutions, but often branches of classical universities and polytechnics from large cities in the regions. The problem is that the diploma is the same whether students study at the mother institution or its regional branches. Of course, the quality of education and unit cost are much lower at the regional branches. Furthermore, the qualifications of professors, their salaries, learning conditions, laboratories and libraries are of a much lower standard in the regions. For these reasons the unit cost per student could be 10 times lower in the branch compared to the mother institution to obtain the same diploma. Central funding of higher education will be used as a lever and enforcement to support the best-performing institutions and to accelerate the closure of inadequate institutions. The regulations to open new institutions will be strengthened legally.

Another critical issue is the balance of power in influencing the central government decision-making regarding higher education policy. The elite classical universities and polytechnics in Moscow and St. Petersburg – Moscow State University (MGU), Leningrad State University (LGU), Baumansky Polytechnic – eventually regained their power compared to the new institutions such as the Higher School of Economics and private universities. This is demonstrated not only by the direct government support in terms of funding and subsidies, but indirectly through the distribution of grants and loans of foreign donors.

These developments are important as the demographic trends at present are very negative, with indicators of student admission and enrolment expected to be worsening sharply. Consequently, the competition between the institutions to attract more students may soon become cut-throat. The share of the central Ministry funding for institutions is shrinking compared to their own resources from tuition fees and other income-generation activities. While the share of fee-paying students in admission and enrolment continues to grow steadily, the central Ministry's financial support is becoming more like a sign of the position of the Ministry towards a particular institution rather than a financial tool. The regional and local authorities which usually concentrated their attention and funding on primary and secondary education, are starting to provide more support for social reasons to the higher education institutions.

Inspired by the World Bank, the Ministry is trying to turn higher education into a market and to implement the following set of interrelated measures:

- to introduce a cycle of 12 years before higher education studies;
- to introduce an anonymous unified test instead of an exit exam from secondary school and an entry exam to universities. This

measure is facing fierce opposition from local governments and university presidents, afraid of losing their hidden incomes and other benefits;

- to introduce a system of student loans (called GIFO in Russian) to compensate for the increase in tuition fees.

The reasonable horizon for the implementation of these reforms is set for 2005. At present the Ministry is piloting them in regions where the resistance to them is not strong (i.e. Yakutia and Mordovia). The powerful city authorities in Moscow, St. Petersburg and other large cities reject the decisions of the central Ministry.

To translate, the abbreviation GIFO stands for the state financial obligation to a named individual. It is like an individual cheque for students to pay tuition fees for their studies. Its planned value is between 5,000 roubles and 25,000 roubles per annum for six years, depending on the results of the unified anonymous testing. It is paid directly by the state budget (treasury) to the bank account of the university concerned where the selected students study. It belongs to one person only and cannot be sold. The duration is for six years of studies only and is available specifically for the first higher education diploma. The following grades are proposed by the GIFO in 2002-2003 as an experiment:

- 'A+': applicant with the highest amount granted who can in theory choose any university in terms of tuition fees. This means 9,375 roubles, or some US\$300;
- 'A': applicant with a grant amount sufficient to enter many universities in terms of tuition fees. This means 7,500 roubles (or less than US\$250);
- 'B': applicant with a small grant (3,750 roubles or about US\$120). May enter universities with low fees;

- 'V': (Russian equivalent of an English 'C') applicant may receive 3,000 roubles, which is barely useful;
- 'G': (Russian equivalent of English 'D') applicant may receive 750 roubles, in real terms no grant at all.

Those projections are already far below actual tuition fees charged now and fee levels are increasing faster than inflation in 2003. The most prestigious universities in Moscow and St. Petersburg are charging tuition fees starting at US\$5,000. Given the tight budget situation of the central government even in the times of high oil prices, it is not realistic to expect that the implementation of this experiment will be smooth. This is more like token 'seed' money. The expected breakdown will start at not more than 50,000 roubles (less than US\$1,700). The plan is to provide up to 25,000 roubles (about US\$850) per year for the best-performing applicants. Sadovnichyi, Rector of Moscow State University estimates that university funding needs as much as US\$20,000 per student but in reality he does not receive even US\$500 from the government budget. The figure of US\$20,000 is certainly not justified by any serious financial analysis but points to the crucial decision-making at the level of institutional higher education management. Sadovnichyi would like to charge tuition fees of US\$20,000 to make the image of his university comparable with Harvard and Stanford.

At present the margin between the cost and the price tag in the most prestigious Moscow universities is: unit cost per student \$US1,000-1,500; asking price, including private tuition \$US5,000-10,000. The central Ministry tries to warn parents that if tuition fees at private universities in Moscow and St. Petersburg are announced as \$US500 US dollars they may indicate a 'fly-by-night' institution.

The Ministry realizes that the budget funds will not be enough and says that the GIFO should be mixed with finance provided by



families. But there is a strong opposition to this. In an unregulated market like Russia, the tensions have considerable potential to rise. People living in Moscow and St. Petersburg have many more chances of entering prestigious universities but this may change if smart pupils from the provinces receive better marks in the unified anonymous test.

### **The role of foreign advice and funding in reforming Russian higher education**

Russian decision-making in reforming higher education is often inspired by such powerhouses as the World Bank, the European Commission and other agencies and foundations such as the Soros 'Open society'. In Russia, the World Bank is currently financing the Education Innovation Project that has provided support for the reform of the university curriculum in economics, political science and sociology, improvements in university administration, financial management, the introduction of computerized management systems, and the integration of university with other sub-sectors of education. US\$41 million is allocated by the project to support fifty-nine universities to harness the potential of the global knowledge economy. The project outputs to date have been impressive with funding going to library resource management, new courses, curricula packages including e-learning materials as well as reforms in governance and management – projects all proposed, developed and implemented by the staff of the participating universities. Some sector-wide project outcomes related to the improvement of quality assurance and to the dissemination of best practices are also emerging. Through its ongoing policy advisory services, the World Bank has also made available international examples of best practice to the Ministry of Education and other stakeholders. But the challenge will now be to scale up these initiatives.

A new World Bank report (2003), *Constructing knowledge societies: new challenges for tertiary education*, highlights the importance of investing in modern, high-quality tertiary education in order to close the growing 'knowledge' gap between middle-income countries and industrial nations. As a result, modernizing the content and management of tertiary education must play a key role within a country's overall education agenda. In the case of Russia, with its demonstrated commitment to providing good quality, modern education, and its strong track record in the fields of science and technology, the ideas designed by the World Bank have already found a receptive ear from policymakers in Moscow and elsewhere. The promise should be a lifelong learning system that offers the availability of learning anywhere, any time and for anyone.

The World Bank recipe for Russian higher education is that knowledge is the new source of wealth for this country. Knowledge in the form of ideas and technology now drives the world economy. This should force education policymakers to re-examine the policies and assumptions that underpin their provision of good quality continuous education. Indeed, the pace of change and innovation has intensified: Product development cycles are shorter, services are a growing proportion of economic output worldwide, computer power and capacity continue to rise as hardware prices fall, and data transmission costs decline. From the World Bank's point of view, rapid progress in electronics, telecommunications, and satellite technologies, permitting high-capacity data transmission at very low cost, has shrunk physical distance as a barrier to communication and as a factor in economic competitiveness. Communication technology (as evidenced by the spread of the Internet and of cellular phone usage in such a vast country as Russia) is expanding. Tertiary education, in its training, research, and informational role, is vital if Russia is to adapt to such far-reaching changes.

The growth of the knowledge economy has not been confined to its industrial economies, but has also spread with remarkable speed to transition economies. If Russia is able to take full advantage of these opportunities it will be able to boost its economic performance and eventually catch up with highly industrialized nations. Moreover, the development of the knowledge economy can provide a country like Russia with a greater opportunity to address pressing national concerns, including poverty, inequality, and other social exclusion. If the Russian government invests in tertiary learning and allows its people to prosper with updated skills it will be amply rewarded by the benefits of the global knowledge economy. These rewards will only be possible once universities and other tertiary institutions modernize themselves with the support of governments and the private sector.

The dizzying speed of the global economy suggests that the Russian government should follow the example of governments committed to continuously updating their education systems to make them relevant for young people who will eventually work in a technology-driven marketplace. Russian universities that have thrived under these conditions are those that make their research capabilities indispensable to governments and the private sector, and have the freedom to self-manage flexibly enough to be able to adapt to the changing terrain of modern education.

Given the size of Russia, the government's plans to strengthen distance and open education services to take advantage of the delivery potential of information and communication technologies (ICT) as a cost-saving tool are necessary in order to ensure equitable access. However, international experience shows that ICT could be expected to provide only part of the solution and the provision of access alone is insufficient as educational differences underlie the different rates of penetration of ICT and the Internet. Issues remain,

such as the training of staff and the availability of suitable educational materials in Russian, as well as the urgent need to develop special measures to alleviate the risk of increasing the digital divide between the well-off in the cities (who have access to computers and the Internet) and the poor in depressed urban and rural areas.

Finally, it is the World Bank's view that it is most important not to neglect the teaching of science at all levels, as an increasing dearth of well-trained scientists is now evident in many OECD countries: This is a pitfall that Russia should avoid. Policies to encourage linkages between tertiary education institutions and research centres in order to encourage innovation and to foster the development of high technology companies are now necessary as are the promotion of joint research activities, personnel exchanges, cross-patenting, licensing of technology and purchase of equipment between universities and the business and industry sectors. "Education is actually the only mechanism that works to smooth social inequity (to level the opportunities) not just in a market society but rather in a market society of modest means, such as the Russian one," says Yaroslav Kuzminov, Rector of the Higher School of Economics, Moscow and one of the lead World Bank consultants in Russia.

Globalization and the growth of 'borderless' education - through distance and online learning - raises issues that affect tertiary education in Russia. Yet many of these issues are beyond the control of the Russian government. The World Bank and other donors work with federal and local governments and institutions to enable the provision and expansion of the 'global public goods' generated by tertiary education. This is intended to be accomplished through encouraging dialogue on the articulation and harmonization of accreditation frameworks, legislation for international tertiary education providers, intellectual property regulations governing

distance education programmes and liberalizing access to information and communications.

The discussions continue among donors on the best way to support the reform of higher education in Russia in terms of equity and efficiency.

If the key problems are determined, the list would include:

- a lack of transparency in admission, leading to corruption and private tuition;
- irregularities between the legal status of the institution and its actual activities;
- poor links between curricula, content of studies, and the world of work and the labour market. Graduates feel insecure and not prepared to enter the Russian reality. More than half of the graduates have a job different from their studies;
- innovations and new technologies coming late to the institutions which become too conservative and obsolete;
- funding of higher education is still in uncharted waters. The share of government funding is decreasing, the role of the other sources is growing. What should be the role of foreign donors, and how should it be applied per institution?

### **Conclusions and lessons learnt**

As Russian society is becoming more and more divided by income brackets (i.e. the Gini co-efficient for Russia is close to Latin American records), so is access to higher education and its internal efficiency. Higher education in Russia has become an industry with prices (not costs) rising faster than inflation and perhaps any other item on the market.

In Russia, the prevailing thinking is that, while a good number of universities and research centres have succeeded in becoming innovative and entrepreneurial, much more remains to be done. Russia's higher education system would benefit from a coherent strategy to build on the inherited strengths of the system while developing incentives for all institutions to adapt to the demands of a knowledge society. The main objectives of this strategy could be to improve access to tertiary education through the provision of more equitable financial aid to students, external participation in governance, and measures to increase the efficiency of university administration. Other options could be the introduction of more flexible curricula and shorter programmes and courses, the liberalization of the rigid regulatory framework, and the introduction of public funding methods that encourage institutions to respond to market demands for quality and diversity. Increased public investment is needed to boost academic and management innovation, to offer a wider range of courses taught at individual institutions, and to create new programmes that cater to new demand-driven areas of learning.

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### **3. Are Russian universities becoming entrepreneurial?**

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#### **Russia – a country in transition**

Since the early 1990s, Russia has either been a country in transition from a centrally planned economy with a Socialist ideology to a market economy and a liberal society or has been in its “second social and economic experiment” (Stiglitz, 2002; Service, 2002). Transition to a market economy, like transition to communism, required changes in all the elements of society. The process of transformation was similar on both occasions according to Stiglitz: “As if the market Bolsheviks, like the Western experts and evangelists of the new economic religion who flew into the post-Socialist countries, attempted to use a benign version of Lenin’s methods to steer the post-communist ‘democratic transition’.” The main difference was that during the first revolution the elite class was totally destroyed and exchanged for a new one, the proletariat, and during the second the nomenclature and apparatchiks stayed at their posts, using privatization and other elements of transformation for their own benefit. Education was used in order to reproduce themselves as a ‘new’ class (Bourdieu, 1997).



Another important feature of this transformation was that once the market economy model was imported to Russia from the West, the importance of institutional infrastructure was neglected, as happened during the times of Peter the Great. This led to more than 10 years of reforms resulting in a ruined economy, the devastation of the middle class, the creation of cronyism and mafia capitalism and the erosion of 'social capital' (Stiglitz, 2002). The gap between rhetoric and reality increased: "double thinking as a way of life" where, as argued by Robert Service, people "paid lip service to the Communist line of the day, but were actually thinking entirely differently" - a legacy from the past which can still be observed in today's society. "Russians and other peoples of the Union of Soviet Socialist Republics (USSR)," says Service "had accommodated themselves to the Soviet regime not only in behaviour but also in attitude" (Service, 2002). In the discourse on the transformation of Russian higher education it is necessary to bear in mind all of the above-mentioned specific changes in their social and economic context.

However, visiting Russia, meeting ordinary (often well-educated) people, this author becomes more optimistic. The visitor to Russia, like the author, may take a more positive view because in Russian universities one can meet many intellectually curious students who are open to new ideas, willing to study hard, and not yet corrupted by mass culture. One can also meet enthusiastic academics who, in line with established tradition, devote many hours to teaching and supervision with a minimal salary, and people full of innovative and entrepreneurial ideas. Russia is very obviously rich in human potential.

## **Reforming Russian higher education**

The educational reforms in Russia were triggered by the overall political, economic and social transformation in society, and the direction for this transformation came from above. The transformation in Russian education and its universities is twofold in character: Firstly, there is a transformation from a totalitarian regime to capitalism and liberalism and secondly there is a transformation which affects many Western universities (Clark, 1998; Slaughter and Leslie, 1999; Sporn, 1999; Kogan, 2000; Marginson and Considine, 2000; Williams, 2003). This latter is the transformation to an entrepreneurial/innovative/adaptive model of the university, aimed at adaptation to the market and to the influence of globalization, decentralization and financial constraint.

Traditionally the Russian system of higher education was financed, controlled and managed by the government. The process of decentralization began in the 1980s, when it was decided that university rectors could be elected by university academic councils or senates. The gradual decentralization of public higher education institutions was codified in the Russian Law on Education (1992), and extended in 1996 (Law of Higher and Professional Education). According to this new legislation, educational services were to be provided by educational not-for-profit institutions which were permitted to engage in generating non-state funding without any limitation being placed on them by the state. The revenues from these activities could be invested into areas not directly related to the educational mission of the institution.

Universities were made autonomous by law, free to set up their own internal organizations and to hire and fire staff. Universities were also allowed, according to the law, to admit up to an additional 25 per cent of their student population on a tuition-fee-paying basis. The number of

fee-paying students increased from 15 per cent in 1995 to 46 per cent in 2000 ('Current Educational Policy in Russia', 2001). From the federal law in 1992, non-state, private higher education institutions could be opened and these started to spread rapidly (Tomusk, 2001) – according to statistical data (Goskomstat, 2002) there were 78 non-state institutions in 1993/1994, comprising 70,000 students, and 387 in 2001/2002 comprising 630,000 students. The non-state institutions filled a gap in provision in the social sciences, business studies, law, and banking and other new specialities which became popular with the economic transformation of society. Non-state institutions are for-profit organizations, existing on tuition fees and international grants. Teachers are often recruited from the state universities, and work for both institutions. For example, in 2000/2001 there were 42,204 teachers in non-state universities and for 27,817 of them this is a second job (Centre for Science, Research, and Statistics (CSRS) 2002). The process of licensing and accreditation of such institutions is complicated and sometimes leads to corruption (Smolentseva, 2002).

In addition, changes have been introduced in the content and organization of the curriculum. There has been an increased emphasis on the humanities, a diversification of programmes and courses, an elimination of the bias in favour of engineering specialities and an orientation of the curriculum towards the needs of the market, society and the consumer (Smolentseva, 2002). Parallel to the traditional Soviet five-year degree programme, leading to the specialist diploma, a Western type four-year programme has been established leading to the Bachelor degree, and with a Master's degree after a further two years. In fact, the Western type degrees have not been so successful because the Russian employment market is not ready to employ graduates with such a degree, which are still considered by society as not a full degree. The educational process with overloaded teaching hours per day, as well as the emphasis on upbringing still remains unchanged.

'Massification' of higher education in Russia took place without much increase in teaching staff or funding: The number of students almost doubled at state universities, but teaching staff increased by less than 2 per cent.

**Table 1.1 Higher education institutions (HEI), teaching staff and students (1991-2002)**

Year	State HEI	Teaching staff State HEI	Students (in thousands) State HEI
1991/1992	519	233,477	n/a
1993/1994	548	239,848	2,613
2001/2002	621	272,700	4,797

Source: *Rossia v zifrah*, 2002.

However, the financing of universities changed dramatically. From the 1990s Russian higher education received about 2 per cent of the annual government budget. This covered only minimum level wages and stipends, keeping them below the poverty level (*Analytical survey of Russian education*, 2001). University costs for electricity and other utilities, etc. were increasing every year. During the last two years, however, the state HEI increased the budget and now covers not only salaries, but also expenses for technical needs. In 2001 Tomusk wrote: "Universities have moved from reforms to survival without changing much, not dissimilar to many entrepreneurial universities in the West; universities in the Eastern part of the continent are also ready to sell almost anything" (Tomusk, 2001).

More or less left to their own devices, Russian universities like the Russian people began living according to the well-known principle "saving the drowning is a job for the drowning themselves", to quote one researcher (Kagarlitsky, 2001) describing the current situation in Russian society. Many ambitious Russian universities started to

develop entrepreneurial activities imitating Western universities, using various methods of income generation:

- student fees (local and international students);
- renting out of facilities;
- grants (from international foundations and the state);
- training specialists for the region and enterprises;
- overheads from research;
- short courses;
- conferences;
- donations.

Nowadays many Russian universities earn 50 per cent or more of their income from entrepreneurial activities (Tagirov, 2001). As a result of decentralization this non-state income flows into the university's central accounts which is under control of the university rector, who is not directly accountable for the use of these funds. This lack of accountability can lead to the situation described by a former Minister of Russian Education Dneprov (2000): "Higher Education Institutions, with few exceptions, are privatized by the Rector's corps. To the state was left the 'right' just to observe the tireless activity of the Rectors, which is a very difficult task both for the state and society at large because of the absolute non-transparency" (Dneprov, 2000). Much depends on the rectors' professional and personal skills and their willingness to accept changes. The rector appoints the team of vice-rectors from the academic staff on a contractual basis (there are normally 5 to 6 vice-rectors). This team is usually changed when a new rector arrives (elections for the rectorship take place every four years). This is one of the reasons why many senior academics prefer to remain as heads of departments and continue their academic work. The power of the rector can be restricted by the academic senate, which decides on an

annual budget and the curriculum but there is evidence that in some universities the senate has become mainly a formal body.

### **Transformation or survival?**

According to Clark (1998) “a strengthened steering core” is a characteristic of the entrepreneurial model of university transformation but “it must embrace central managerial groups and academic departments”. In spite of having a strong steering core (or administrative team), and being capable of generating income, Russian universities do not fit Clark’s model because they miss the main feature also emphasized by Michael Shattock in this same study, that the object of income generation is to meet common university goals and to contribute to strategic planning for the benefit of the whole university, not for individual profit only. One of the problems of course is that “Russian universities are short of capable managers to perform the appropriate tasks [of] defining their own governance principles, management structure, etc. and they lack the capacity for professional analysis of the practical and conceptual issues of educational governance” (Beliakov, 1998).

The crucial problem for Russian universities is low salaries and a lack of motivation for many employees (salaries can vary for example from US\$18 to US\$115 per month according to data (2002) from the St. Petersburg State Technical University, while the poverty level is US\$65). People are often forced to work in two or three other places in order to boost their incomes, such as in private universities or in enterprises. There are other options as well. Already during Soviet times low salaries for academics led to a situation where employees had to survive according to the well-known unofficial principle of “feed yourselves from the working place” (Aganov, 2001; Ledeneva, 1998). The shadow economy in Russian higher education, according to data from the centre for Social Investigations in Moscow in 2000,

was US\$1 billion (Dneprov, 2000) with money coming from bribes from the entrance examinations, or the widespread practice of giving private tutorials. There have recently been some attempts at government level, initiated by the Russian Minister of Education Philippov, to change the situation by passing a new law on Unified State Entrance Examination and Individual Student Grants (GIFO). This would involve universities competing for the best students, introducing a rating system and greater accountability. For different reasons many Russian rectors are the main opposition to these innovations (Conference of the Association for Russian University Rectors 2001).

Account must also be taken of the traditional individualism of Russian academics: This in a totalitarian system helped the best of them to keep their integrity, not officially but at least in the mind and as far as possible in science. On the other hand, cynicism about common goals and team-work for a better future make Russian academics hold back. There is no trust from their side in the administration, either in their own institutions or in the government, as interviewees confirmed. Clark (1998) underlines: "Collective entrepreneurial action ... is at the heart of the transformation phenomenon" so we have here a discrepancy again. The best scientists are able to search actively on their own for international grants or may choose to move abroad for a long period in order to continue their research at more suitable and better paid places. Brain drain is a significant problem as is the ageing of the academic staff (79.5 per cent of Doctors of Science are in their 50s and older; 49.9 per cent of 'kandidat nauk', or PhDs, are in their 50s and older) (*Analytical survey of Russian education*, 2001). A decrease in research funding (from 0.50 per cent of GNP in 1992 to 0.26 per cent in 1999 (Smolentseva, 2002)) and a lack of support mechanisms for younger researchers make them often turn their energy to business outside the university.

If you examine other levels in the university hierarchy such as faculties and departments, their heads are also more preoccupied with raising their income rather than dealing with organizational change in their institutions, since the additional remuneration for becoming a dean is only about US\$15 (Aganov, 2001). At many universities faculties and departments do not make autonomous decisions, and are strongly dependent on the good will of the rector. The belief in strong leadership is significant for Russians as employees, as they themselves confirmed in interviews. This belief together with the passivity and obedience inherited from the past forms the attitudes of many middle level older administrators and academics, and is a further obstacle to innovation and change.

Clark argues that universities need to change their organizational culture and belief in order to achieve a successful transformation. He writes: "A formal grant autonomy from patron to institution does not guarantee active self-determination; autonomous universities may be passive institutions. They may live for the past rather than look for the future ... Autonomous universities become active institutions when they decide they must explore and experiment with changes in how they are composed and how they react to internal and external demands. They sense that in fast moving times the prudent course of action is to be in the front, shaping the impact of demands made upon them, *steering instead of drifting*."

This is not to say that one cannot find successful innovative institutions, faculties or departments in Russia with strong enthusiastic leaders and good management teams such as the University of Nizhnii Novgorod, Tomsk Polytechnic University and others. A conference on the Entrepreneurial University and Entrepreneurial Education was held in Moscow (27-28 May 2003), where some ambitious universities shared their experiences in innovation. There are without doubt



interesting cases, some of which are presented in this book. These cases are, however, exceptional because the system lacks mechanisms to support institutional initiatives as well as mechanisms for transparency and accountability.

A case drawn from one of the partners in the Tempus university management project, which forms the basis of this book, may serve as an example of how entrepreneurialism is assisting university transformation.

The Department for International Education Management at St. Petersburg State Technical University was created in 1997; its mission is to prepare professionals for international relations offices in higher education institutions and public organizations. The staff consists of the head himself, four Docents (Doctor's degree or PhD), two senior lecturers, and four administrators. In the academic year 2000/2001 the department had 186 students (including 31 overseas students). Thanks to internal decentralization within the university the department has its own budget and can make some autonomous decisions.

The funding of the department comes from:

- the state (only for minimum salaries);
- fees – 70 per cent retained by the department for Russian students and 45 per cent for overseas students;
- research projects, grants;
- the Laboratory for Evaluation of Russian and Foreign Diplomas which was created by the department;
- consultations, workshops;
- short professional development courses in university management.

The non-state income is spent on:

- salaries for staff (68 per cent);
- technical needs (17 per cent);
- equipment, teaching materials (8 per cent);
- travel costs (7 per cent).

In this way, salaries can be raised from US\$80-90 per month for the docent to US\$170-200, which are not high, but more than some other institutions can offer. For comparison, the same amount of money could be earned by a lecturer in a private institution for only a few hours of teaching but no lecturer would be likely to be appointed to a private university unless already an approved lecturer at a state university.

This department represents a positive and different example of Russian entrepreneurialism, positive because it is attractive to the younger generation of lecturers and different because its budget is transparent unlike those of many other departments and institutions.

### **Perspectives for the future**

In 1999-2000 the author did an investigation into the future of Russian higher education. The interviews were based on Textor's (1983) model as well as on his successor Kah Slenning's doctoral research (1999). Textor used the method called 'Ethnographic futures research' for his ethnographic studies and Slenning developed the model for the investigation of the future needs for competence development of school managers. For the interviews a number of key informants were chosen in relation to the higher education area, such as rectors and senior managers (vice-rectors) from state universities and from a private university, most of them being influential figures in Russian universities. Interviews were also carried out with some professors. The basic structure of the interview could be summarized as follows: The interview started with the

question of the informant's view on the general development of society in a 10-year perspective. Thereafter, the informants were asked to draw the consequences of that image for the development of higher education, and to give three different scenarios: the best possible development of education, the worst possible and the most likely. From the best possible image, thereafter, the consequences for university managers' competence demands were asked for. Finally the interviewees were asked to give hints as to what needs to be done to reach the development of competence (based on Slenning's model).

The assumption in this account is that higher education is secondary to the general development of society. The general picture is important in the interviews in order to avoid the 'right answers' which tend to be made if you start with a direct question on education development, as Slenning explained. However, some 'right answers' could not be avoided. People who had been working in the Soviet system are always aware of how to answer in a politically correct manner even though the interviews were confidential and informants felt relaxed. Another fact during the interviews was that it was really difficult to persuade Russian rectors to think and speculate about the future because most of them constantly switched back to the current problems of higher education and their own university needs. Some data collection was done in the form of questionnaires where interviews could not be arranged.

Starting with the question on the future general development of society and education, most of the interviewees mentioned the further development of information technology. Many mentioned also the demographic crisis and an increasing gap between developing and developed countries. Informants worried about the increasing inequality and impoverishment of the main part of the population in

the country. Distance education was mentioned as the main alternative to the classical model. At the same time some interviewees pointed out as a less desirable fact that the maturing and character-forming role of education will not be a priority because of the loss of direct contacts between students and the teacher. The idea of lifelong education attracted some interviewees. A less desirable prospect mentioned by all informants was the possible loss of the present pride of Russian universities – the fundamental education. Some interviewees worried about the future of research at universities, as a consequence of the poor financial situation and the ageing of Russian scientists. Some interviewees were optimistic that funding from the federal budget will increase in the future and that the possible correlation between the state and non-state budget will be 50-50 per cent or even 70 (from the state) – 30 per cent, though some interviewees remained sceptical about that. All interviewees mentioned tuition fees as a necessity in future, though they were aware that universities can waste talent from poor families as a result of a lack of supporting mechanisms. Some rectors saw the commercialization of knowledge as unavoidable and a positive factor, which would help universities to survive in a tough financial situation. They pointed out the importance of increasing universities' autonomy, and an intensive development of entrepreneurial activities and also the establishment of more commercial structures at universities. Thus, nobody mentioned changes in the educational process such as a reduction in teaching hours. All interviewees found the internationalization of education as a positive factor, which would develop in the future. At the same time they were aware that globalization brings hard competition in the world market of educational services and many were also aware of the negative effects of globalization for weaker institutions. One vice-rector interviewed, also an active scientist, who was involved in a long time research cooperation with a university in Mexico, pointed to the risk of Russian

society, as well as its higher education system, becoming much more like countries of the third world. He mentioned poor fundamental research and the increasing 'brain drain' and the future role of Russian universities as donors, giving away their most talented scientists who have a non-ordinary 'Russian' way of thinking to the Western world. All rectors and senior managers rejected the total privatization of education. Conservatism in keeping traditions should be combined with a more flexible economy as many pointed out. Some of the informants admitted the importance of the emphasis on employability, and more pragmatism in the future of higher education in Russia. Interviews with professors not involved in university management revealed a common belief that it is the state's responsibility to provide the funding for both teaching and research. They were using the name 'innovative' instead of 'entrepreneurial' university: they tended to keep their distance from the 'less valuable' entrepreneurial activities.

In response to the question on the competence requirements for future leaders and managers a common opinion was that knowledge of financial management, and fundraising should be the main priorities. Many informants saw leaders as persons with strong personalities: "to be a leader is a privilege of a few, because it is something you get from God". Many also mentioned that a good leader should be able to provide the atmosphere for creativity and support for innovation. Professionalism was named as an important feature for Russian university leaders. Nothing was mentioned about shared values and only one person mentioned the ability to work in teams. Human resource management was pointed out as important as well as a theoretical knowledge on academic leadership. Student participation in the governing process had lower priority. For future training programmes it was suggested there should be more exchanges of ideas and sharing of practical experience between Russian universities as well as study visit programmes to Western colleagues.

Looking through the official documents and government programmes, such for example: *The concept of modernization of Russian education for the period to 2010*, approved by the Government of the Russian Federation from 25 October 2001, one can see some discrepancies between what was said by rectors and by the Government. The ‘*concept*’ seems to me more optimistic about the future of higher education in Russia:

“The current priority of Russian education policy is to ensure an up-to-date quality based on the maintenance of the fundamental character of education, and its response to the current and future needs of individuals, the society and the state. ... state guarantees of equal access and equal opportunity to obtain quality education must be provided; effective norm-setting, legal, organizational and economic mechanisms must be formed to attract and dispense non-budgetary resources; the social status and professionalism of educators must be raised, and their status and public support enhanced.”

It must be hoped that these ideas will become a reality. In conclusion, it should be underlined that the key informants showed an awareness of the present problems of higher education in Russia and the changes that are going on. They emphasized the importance of developing organizational structures, and especially new financial systems but not much was mentioned about the development of the university as an institution and the creation of new common values and attitudes, which are crucial for supporting these new structures.

## **Conclusions**

This chapter argues that it was the changes and transformation of Russian society that caused the changes in the management of Russian universities; lack of financial support made universities undertake

entrepreneurial activities and adapt their institutional structure to the new environment.

These developments give rise to the need to create new organizational structures, new attitudes and a new organizational culture in Russian universities. The changes have often been *ad hoc* and need to be institutionalized. Unlike Clark's pathways of transformation, these changes have not been embedded, and are often more superficial than real. In such cases there is a danger that they extend for no longer than the funding that has stimulated them. Hierarchical systems have not changed much; decentralization began without well-developed mechanisms of accountability and transparency. Low salaries and lack of motivation can lead to corruption. Academics and administrators lack mutual trust to work for common goals; there is a lack of professional managers who can think in transformational mode.

There are examples in this book where universities have reacted to financial shortfalls with amazing creativity, but many Russian universities, while increasing their income through entrepreneurial methods, have been driven by individual rather than institutional goals and are more concerned with individual financial benefits than the wider aspects of entrepreneurialism. As Clark makes clear, and as stated by Shattock in *Chapter 3.6*, the central aim of the entrepreneurial university is to build a better and more competitive university - not simply to generate additional funds.

Of course, changes and especially attitudinal changes take time. To create a new organizational culture and to develop new attitudes is not a simple process and is specific to each university. Western universities approach this transformation in different ways by experimenting and sometimes making mistakes which they learn from as we can observe from literature and case studies. As Clark noted

(2003), "It is not the demands of the day in themselves that drive a university to change ..., but rather the many specific responses to those demands, in the form of emergent acts of will, that are summoned from within. ... The study of modern academic entrepreneurialism teaches and teaches well that, one by one, as the 21st century unfolds, universities will largely get what they deserve. The lucky ones will have built the institutional habits of change."

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#### **4. The changing political economy of higher education**

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##### **Academic authority, the state and the market**

One of the most useful analytical tools in the study of higher education policy and management is Burton Clark's 'triangle of co-ordination', shown in *Figure 1.1* (Clark, 1983). It shows the three main influences on a university's organization and operation – academic authority, the state and the market.

Academic authority derives from the possession of professional knowledge. Universities are unusual, though by no means unique, organizations in that the knowledge and expertise necessary for them to operate are diffused widely amongst the staff of the organization. The support of those who possess this knowledge and expertise is necessary if a university is to operate effectively and efficiently. More than in many other organizations the managers of a university depend on the informed consent of those who are managed.

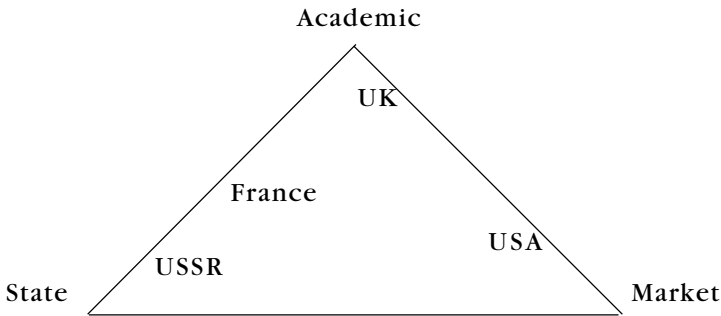
The authority of the state reflects the collective interests of the population outside the universities. It is often exercised through the central government of a country but this is not necessarily the case. State authority is often diffused through several levels of authority, regional, local and even institutional (in some cases, of course, the authority of the state derives from the exercise of military power by an unrepresentative government). While the legitimacy of the state's interest in higher education is part of its general interest in the education of its citizens, in many countries also, its authority derives from the fact that the state, through its taxpayers, provides a large part of the funds necessary and, therefore, requires some accountability for the ways in which public funds are spent.

The market represents the will of the people in a different way. Whereas the state can be seen as representing the collective will, the market reflects the aggregation of the choices of millions of individual people. In practical terms individuals and their families 'buy' higher education and this gives them the right to influence the nature of what they are buying. Universities prosper if they are seen as providing efficiently what the consumers want. If they do not they decline.

In practice any university or college at any time is subject to all three of these pressures. What differs between countries and between

time periods is the balance between them. *Figure 1.1* shows the position of a number of countries in this triangle as perceived by Clark and his collaborators at the beginning of the 1980s. In the USSR the state had almost complete control over higher education, whereas in the United Kingdom academic authority was dominant and was in fact underpinned by the government which made regular block grants to the universities and required very little accountability for the uses to which these funds were put.

**Figure 1.1 Triangle of co-ordination**



*Source:* Clark, 1983.

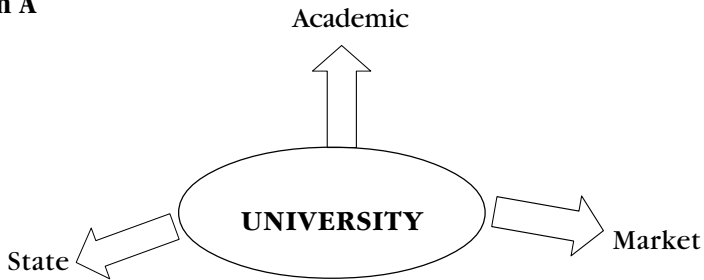
Near the third corner was the United States where the market was playing a significant role, particularly through the large private sector which includes many of the most distinguished universities. However, it must not be forgotten that the state also played an important role through the individual states which are responsible for the provision of public higher education in their territories. The central, deferral government plays little part in the management and governance of higher education in the USA though it does make a significant contribution to its funding though the research grants it awards and the subsidized loans to students it finances. France is included

because it is indicative of a pattern that was common in many Western European countries. Universities there were, in effect, departments of state providing a public service, but within these 'departments' academic authority was fairly strong. The market played virtually no part.

In order to understand the changes that have occurred in the past two decades it is helpful to visualize Clark's triangle in the slightly different form of *Diagram A* in *Figure 1.2*. Academic authority, the state and the market can all be seen as pressures on the management of universities. They all pull in somewhat different directions. For academic staff, the development of a particular subject and the need to earn a living and develop individual careers are paramount considerations. They are interested in seeing that as much money as possible is spent on universities and colleges, especially on staff salaries. For the state, issues of national economic, social and cultural policy are the main drivers, together with the wish to see costs constrained in the interest of taxpayers. Equality of opportunity for everybody is often a major concern of modern states. The market is the aggregated expression of large numbers of individual choices. Individual advantage is what drives the market. This conflicts with the collective interests of the state in various ways.

**Figure 1.2 Forces acting on universities**

**Diagram A**



**Diagram B**



**Diagram C**



For example, a state is usually concerned with equity whereas for a market the main concern of everyone in it is to secure individual advantage. In an ideal state regulated system universities are coordinated to secure the maximum collective advantage whereas in a market dominated system the universities are likely to compete vigorously with each other for the best students, the best staff and the most interesting research projects.

*Diagram B* in *Figure 1.2* shows the relation between these three forces, as they were in many higher education systems in the early 1990s. In brief the state underpinned the authority of the academic staff of the universities. Universities were provided with resources in order to provide academic services to students and the users of research. The teaching and research services they were expected to provide were rarely specified except in broad terms and there was little monitoring to see that even the broad priorities were being pursued. Between them the state and the academic staff decided what should be taught and what should be researched. It was a classic case of what some policy analysts in the 1970s and 1980s called 'producer capture'. Public services were provided according to the judgements of those who provided the services. The state colluded with universities and colleges to protect them from the market. This has many advantages, particularly in an activity such as higher education. The suppliers of the services have the knowledge and expertise to know what is worth learning and what is worth researching. However, problems occur when those who are supplying the services put their own self-interest above that of the people they are supposed to be serving. A widespread example of this in higher education is that academic staff can usually further their own careers better by excelling in research rather than in teaching. In the absence of countervailing pressures the universities in the 1970s and 1980s concentrated more and more on research rather than teaching.

By the end of the 1980s this model was being put into reverse, very sharply in the United Kingdom under the influence of the very strong Conservative Thatcher government. As with many other public services the state switched its support away from the suppliers of higher education and towards the consumers. This is *Diagram C* in *Figure 1.2*. In the UK the event that marked the shift was the *1988 Education Reform Act*, which changed radically the relationship



between the government and the universities. Henceforward the universities were seen not as trusted institutions to be subsidized, but as providers of academic services, which the government bought off them according to its specifications, on behalf of students. A related development underpinned by the 1988 Act was that universities were expected to raise increasing proportions of their income by direct sales of teaching and research services. Several other OECD countries were following similar trends. (See for example Kaiser *et al.*, 1999) Of course in no western European country was the change of direction as dramatic as in Russia and some other Eastern European countries following the collapse of their Communist governments.

Broadly, the theory underpinning the 'new public management', as it came to be called, was 'resource dependency theory' first enunciated in this form by Pfeffer and Salancik (1978) but since taken up by many writers on higher education. In many ways this is simply an intellectualization of the old European proverb - 'he who pays the piper calls the tune'. This is closely related to what some economists have called the 'principal-agent' problem (see for example Massy, 1994). The problem is how the 'principal', the leader(s) of a system or organization, persuade the agents, those who implement management decisions to perform as the principals wish them to. Legally enforceable rules and force are ways in which this can be done. That is basically the idea behind the state control model in Clark's triangle described earlier. But in organizations where expertise is diffused widely, persuasion and consent is usually thought to be a more effective instrument of control.

The basic idea of new public management was that, instead of governments trying to run organizations and services from the centre, there should be a high degree of devolved responsibility, but autonomous organizations providing the services would have to meet

various conditions in order to receive public funds for them. In higher education this usually involved governments specifying the number of student places they wish each university to provide and the price they are willing to pay for them. In some countries, for example Holland and Denmark, the government has gone a stage further and specified not just student places but also the number of graduates it is willing to 'buy' from each university. Once this mechanism is accepted and understood it gives rise to many possibilities of using financial incentives to achieve particular public policy aims. The state acts as a monopsonistic purchaser of services from a large number of small providers rather similarly to the way in which large supermarkets specify the products they wish to sell and sign contracts with individual producers to supply them. Producers who do not meet the quality specifications lose their contracts.

However, product specification in this way also involves close attention to the nature of the services provided. In a free market this can be left to customers (although in practice any developed market is hedged with regulations that discourage producers and consumers from cheating each other). If they do not like a product they stop buying it. However, in higher education there are several problems with taking this view. It is not a product the people can buy several times. If their first experience is bad it is difficult to switch to another supplier. Furthermore it is intrinsically impossible for any individual to make a properly informed judgement about his or her higher education until after it is complete. Governments have, therefore found it necessary to monitor and evaluate the qualities of the services they purchase on behalf of consumers. This process has come to be known as 'the evaluative state' (Neave, 1998) and 'the audit society' (Power, 1994). Some commentators have claimed that it results in more government intervention in the operation of higher education institutions than the old state control models (Williams, 1996). In higher education these forces have led to an explosion of quality

control measures during the past two decades. The International Network of Quality Assurance Agencies in Higher Education which had 12 members in 1991 had 73 at the beginning of 2003.

It is not difficult to see that changes of the type outlined in these paragraphs must have had important effects on the internal management of universities and colleges. Administrative arrangements that are appropriate for an institution that is very largely regulated from outside are unlikely to be able to cope easily with the needs of a self-governing university that is responsible for its own affairs, especially if the institution is under pressure through incentives from its main funding agencies to move in particular directions.

### **Collegiality, bureaucracy and entrepreneurialism**

Universities can organize their management in many ways but they can all be identified in terms of three structures and styles: collegial, bureaucratic and entrepreneurial.

There is a large amount of academic literature, at least in the English speaking world, about the virtues of collegial management arrangements. This is the traditional way in which European universities throughout their history have managed their academic affairs. The academic staff of the university, or their representatives, take all important decisions through a process of consensual decision making. Decisions are discussed until there is a broad agreement about the way forward. This means that all, or most members of staff feel a sense of ownership of any policy or strategic decision and are likely to do their best to make it work. There are usually good working relationships between the professional academic staff and their managers and administrators, since both parties have made a major contribution to all major decisions. There is efficient use of

resources, at least from the point of view of the professional staff, since the more efficiently they use resources the more they will be able to do of the things they want to do. The strong professional involvement means that coherent long-term decision-making is possible.

However, despite the many advantages there are equally clear problems with collegial styles of management. The processes of consultation needed to arrive at consensus are inevitably time consuming, so decision-making tends to be slow. The leisurely pace of decision-making means that it is difficult to change direction once a decision has been made. These weaknesses are acceptable in a stable system that needs to change only very gradually and when it is more important to be right than to be first. But in a world of instant global communication and fierce competition for resources, collegial decision-making can be a serious weakness.

More fundamentally, universities are organizations of many competing interests, so consensus decisions are inevitably a series of compromises. This is viable when resources are reasonably plentiful, particularly if they are increasing. Everyone receives something, if not this year next year. However, when resources are not increasing, and even more if reductions in expenditure are necessary, it is almost impossible to reach agreement about where cuts should be made - except on the basis of equal misery for all, which is unlikely to be the best solution for an organization as complex and diverse as a university. Finally, although resources are used efficiently from the viewpoint of those taking the decisions, their interests are likely to be influenced by self-interest and to take insufficient account of the interests of those outside the decision making community. The incentive to concentrate on research rather than teaching has already been mentioned.

Bureaucracy, which as an organizational concept was invented by the sociologist Max Weber, as another ideal type of organization, also has advantages and disadvantages for universities. This is a form of organization in which everyone in a management hierarchy has freedom to act within prescribed limits. If an action is necessary outside these limits authority must be sought from the next highest level in the management hierarchy until the level is reached at which the necessary authority can be given. Advantages are that decisions at the appropriate level of authority can be taken and implemented quickly. Management responsibilities are clear and principals and agents in any particular management situation are clearly distinguished.

However, there are also drawbacks. Policies and management strategies decided by a relatively small number of individuals at the apex of a hierarchy can be arbitrary and there is often a sense of alienation amongst those lower in the hierarchy - 'they' are the managers, 'we' are the workers. There is rigidity, people do as they are told and have no reason to be more efficient or more effective. There are few incentives to use resources efficiently by staff lower in the hierarchy since they have little sense of ownership. Once they have the authority to purchase particular goods or services the cost is immaterial.

Entrepreneurial forms of management are most likely to be found when the institution needs to generate income or to enhance its reputation in a variety of different ways in order to prosper or to survive. These have been explored in several recent books for example Clark (1998), Slaughter and Leslie (1997), Marginson (2001), and Williams (2003). Universities or departments which are able to keep any income they earn are most likely to behave entrepreneurially. They have yet another set of advantages and disadvantages. The key to entrepreneurial management styles is an understanding and

management of risk. Managers who take risks and are successful are rewarded. Failure and passivity are penalized. Thus a university which is exercising entrepreneurial styles of management will reward departments and individual members of staff according to their success in bringing resources or reputation into the institution. Activities that are unable to make a net surplus, in either income or institutional reputation, are discontinued.

Entrepreneurial universities respond to the demands of their paying customers. If demands change the courses offered or the research undertaken must change. There are strong incentives to be efficient, in the sense of providing any given services as inexpensively as possible. It must be noted that this is not the same as providing cheap or poor quality services. Indeed, one effect of competition between universities may be to improve quality. Often the customers are prepared to pay high prices for what they perceive to be good quality; but for any given level of quality it is important that a university is able to offer its clients good value for money. Successful entrepreneurialism also underpins the autonomy of a university and reduces its vulnerability to political interference since an institution that is successful in tapping many sources of income is not dependent on any one of them.

However, entrepreneurial management also has its drawbacks. Success is rewarded but equality of treatment of individuals or groups is not. The criterion for receiving a service is ability to pay for it, not need for it. The expertise of professionals is undermined because the criterion of success is not knowledge or ability as such but whether it finds a niche in the market. This can lead to an excessive preoccupation with short-term issues, which may be detrimental to the long-term interests of the university as an academic institution. It is worth noting that in this respect universities are not unique: many other kinds of commercial enterprise experience a tension

between their short term profit maximization and long term marketing strategies to ensure long term prosperity. However, the university long term is very long term, graduates have a lifetime to benefit from, or regret, their higher education and the effects of research can be felt for many generations.

Several critics have claimed that the marketization of higher education and the entrepreneurialism it engenders lead to its *commodification* (e.g. Rooney and Hearn, 2000). Not all authors are consistent in their use of this word. For some it just means that academic services are bought and sold, whereas in their view it should be provided as a public service. However, there is a sense in which selling and buying courses does lead to a need for their standardization and a specification of what each course or planned piece of research will contain. This is so that the purchasers can tell precisely what it is they are paying for. It may reflect a further downgrading of professional expertise. Higher education becomes a range of services that can, in effect, be purchased from a brochure rather than a transaction of trust between students and teacher.

Finally marketization and the accompanying entrepreneurialism may leave the way open for fraud. The boundary between the legitimate use of a university's economic strengths, mainly the knowledge and expertise of its members, and the illegitimate exploitation of the ill-informed consumer is a very narrow one. Cases are often reported of student applicants to universities making payments of various kinds to secure a place on a preferred course (Temple and Petrov, forthcoming). Sometimes this involves paying for special preparatory courses. When necessary preparation in order to be able to benefit from a particular course becomes fraudulent exploitation of ill-informed applicants is not easy to determine.

## **The shift towards the market**

No university has ever been managed entirely according to any one of these management forms. There is always some degree of collegiality and some bureaucracy and it is rare for there not to be any scope at all for enterprise, even if it is only to offer teaching, research and consultancy services to outsiders on an unofficial basis. However, the balance between them is very different in different countries and at different periods of time. The past two decades have seen a marked shift towards the entrepreneurial styles of management and away from the rigid bureaucratic and the leisurely collegial models of management in many countries. This has had a very marked effect on university management, especially in the countries where the changes have been greatest such as in the United Kingdom and Russia, which 20 years ago were in opposite corners of Clark's triangle but which have both moved a long way towards the market.

In the United Kingdom the key changes since 1988 have been the introduction of output oriented funding formulae the very large expansion in the percentage of university funds from non-government sources and the emergence of entrepreneurial management styles. (The term 'output' is used in a technical sense since most funding formulae use student numbers as the main resource 'driver'. This is output in the sense that most government policies are aimed at meeting target student numbers. Some countries, such as Denmark and The Netherlands have gone a stage further and based their formulae in part of the output of graduates a university produces.) These have been accompanied by significant growth in the external monitoring of university teaching through the national Quality Assurance Agency (QAA) and of university research through the Research Assessment Exercise.



Within universities, the chief-executive officer, the vice-chancellor, has acquired considerably increased managerial powers, not least because they are now designated as the 'accounting officer' for the public funds made available to the university and is personally responsible for ensuring that the resources are used as recommended by the Higher Education Funding Councils. The vice-chancellor is now normally supported by a small but very powerful strategic management group that determines the strategic directions the university will take and ensures links between the vice-chancellor's office and the academic and other staff of the university. Two important tasks of this strategy group are to ensure that the university makes the best possible case for itself in the research assessment exercises and the quality assurance reviews. Another major strategic task is the supervision of a Resource Allocation Model (RAM) which allocates the income of the university amongst the internal claimants and determines what percentage of the commercial income shall be treated as indirect costs and how any surplus over costs should be allocated between the university centrally and the individuals or groups earning it. Details of both sets of allocations are usually determined on a formula basis but the nature of the formulae and the weighting of their constituent parts raises major academic, human resources and marketing issues which need to be kept under constant review.

There are, broadly four main resource allocation procedures that can be observed in British universities at the beginning of the twenty-first-century:

- fully centralized management and financial control;
- centralized institutional strategy but implementation devolved to more or less autonomous departments or faculties;

- most decisions except the main directions of policy devolved to faculties or departments;
- almost complete devolution of authority to schools or faculties with the central management retaining only essential legal powers.

The first of these is now confined mainly to small specialist institutions. Major universities are too complex to be run on a tight centralized basis. The advantages are that it is relatively easy to take and implement strategic decisions for these institution but there is a serious danger of loss of incentive by subordinate groups and individuals to take initiatives on behalf of the institution if they see any income or other benefits obtained appropriated by the central management group.

Centralized strategy and funding of new initiatives but considerable devolution of authority to implement the strategies and the new initiatives is in contrast very common. Again, there may be problems in very large universities when powerful faculties, such as medical schools or business schools have interests that are not consistent with those of the rest of the university. These clashes are particularly acute when faculties have considerable independent income generating powers, and it is not uncommon for business schools, for example, which often have close links with wealthy outside interests to be able to negotiate specially favourable terms for themselves. It is often in the university's interests to do this because a successful business school can often bring considerable income into the university generally even if it is 'taxed' at a relatively low rate. Other faculties, such as the natural sciences may, in contrast, require heavy subsidies from elsewhere in the university but they may be considered worth paying because of the prestige associated with a successful Physics department for example.

The next stage, devolution of most strategic decisions is also fairly common in very large universities. Medical schools, business schools, engineering schools, and law schools are often powerful enough and rich enough to be allowed to take nearly all decisions, including the employment of academic staff, by themselves with no more than light oversight by the central management team.

The fourth stage, almost complete devolution to constituent organizational units is possible only in universities with a very powerful institutional culture that overcomes the obvious fissiparous tendencies inherent in such devolution. Some of the most successful English universities, such as Cambridge, are organized in this way, but it has raised questions about whether the university's resources are used as efficiently as they ought to be (Williams,1993). London University, which was also organized along these lines, effectively split apart at the beginning of the 1990s and the remaining powers of the central university are vestigial. They would probably disappear altogether were it not for the fact that legally all the degrees awarded by the constituent schools and colleges of the university are London University degrees and none of the constituent parts has the legal right to do this.

European universities have survived for 800 years through their ability to adapt to changing circumstances. Never have they had to adapt to change so rapidly as the have needed to in the past two decades. They are likely to need to continue to adapt rapidly under the pressure of the global communications revolution. On the basis of the management changes that universities in many OECD countries have been able to make there is no reason to suppose that they cannot survive another 800 years. But it will not be at all easy.

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## **5. Decentralizing higher education – Swedish experiences in a European perspective**

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### **Introduction**

Decentralization is a word that higher education politicians, university leaders and others interested in higher education have used for quite a long time, mainly but not exclusively with positive connotations. This chapter begins by discussing what is usually meant by decentralization, more in practical terms than theoretically, and in what forms it can appear. It is questionable whether one can find a truly decentralized higher education system in Europe. The main focus

of the paper is an analysis of decentralization in Swedish higher education. Space does not allow a detailed description, but will describe what has been achieved, in concrete terms and will draw some general conclusions. The chapter has been written from the point of view of a higher education administrator and university leader. The author has worked at four levels of higher education: a ministry, a state agency for higher education, a rectors' conference and a university and it is only natural that experiences from these various positions will colour the presentation.

As indicated, the chapter will mainly focus on lessons learnt in Sweden, and with an attempt at a European outlook. Why Sweden? Swedish higher education – as has been the case in other Nordic countries – by tradition has followed a strictly centralized system, but this system has gradually moved in a decentralized direction. In retrospect it is obvious that this has been part of the modernizing of Swedish higher education. Hopefully something can be learnt from this experience. The chapter confines itself to two levels in the higher education system: the government and the institutions. In principle, most of what is said here can be applied to decentralizing decision powers *within* an institution, but this is not further explored here.

### **Decentralization in theory**

The chapter will use a definition of decentralization that the author has found to be functional in his own work within higher education governance. It does not mean that the definition is crystal clear, but it works for practical purposes. Decentralization is transferring decision powers from the centre 'downwards' in the organization to a level where the best knowledge of relevant factors exists and where the effects of the decisions are handled. The ideal hierarchy is an organization, where each level has its well-defined rights and duties. This means, that there must be a balance between

the two. If one level has all the rights – to take decisions – but the next level only the duties – to have them carried out – it is obvious that this will lead to problems. But the fine-tuning of the distribution of rights and duties is a delicate thing to achieve.

What is the rationale behind decentralization, and why should one bother about it? The question can be answered in one single word: efficiency. Of course, there are answers like “This is what industry has done for a long time”, “This is what other institutions in the public domain are trying to achieve”, “This is what modern public administration theory prescribes”, “Staff are better motivated within a decentralized organization” – but *efficiency* is the key-word.

Decentralization contributes to increased efficiency in an organization mainly because:

- the quality of decisions is increased; hopefully the right decision, carried out in the right way;
- the decision process is speeded up; at first sight one would believe it can just as well be the opposite, a major decision from the top which runs smoothly down into the organization saves much time – but in reality this is very seldom the case;
- local initiatives are stimulated;
- wider participation of those involved; staff and other personnel are more motivated.

Of course there are risks in decentralizing decision-making powers in an organization, be it a national system or an institution. One of the characteristics of a centralized system is uniformity. Decentralization is a challenge to uniformity. A national curriculum can be enforced in a centralized system, if this is regarded as advantageous. In a decentralized system many variants of the curriculum can be envisaged. National co-ordination is more difficult

in a decentralized system. There are fields in which a centralized ideology seems to be more relevant than in this example, for instance students' rights. Another risk in decentralization is overspending, if the top level does not take measures to counteract such tendencies. A third risk is that the central level hands over only the unpopular decisions to the next level, keeping the easy ones to handle itself. In fact, it is not too far-fetched to believe that one reason for the ambitions of governments in many countries to decentralize has been exactly this. As long as there is money in your own purse and you can spend it the credit is yours – where there is less it is wiser to let someone else make the savings. A fourth risk is that decentralization can stop halfway and not be consistently carried out in the whole organization. The risk is that the advantages of decentralization reach the top level of a university, but the academic departments are still governed in an unreformed centralized way.

It should be said that decentralizing higher education is not a unique phenomenon in the public sector. On the contrary, it mirrors general principles for governing it. In Sweden it started decades ago with theoretical ideas about management by objectives, which gradually were put into operation; the most recent ideas are covered by the concept 'New Public Management'.

### **Do decentralized higher education systems exist in Europe?**

It is a very complex – and dangerous – undertaking to compare national higher education systems in Europe, using the contrasts centralization and decentralization as a yardstick. First, the starting-points and the national contexts usually are so different. If a comparison is made between the United Kingdom and France one has to remember that universities in the United Kingdom were in the past fairly decentralized in relation to the government, a position



that has now changed in many respects. The opposite is true in regard to French universities, which have operated in the past in a centralized system which is now being changed a little. The direction is clear in both cases but it is not altogether easy to say that British universities are still *x per cent* more decentralized than the French ones. Second, a national system can be decentralized in some fields, but centralized in others. A third factor is that some European countries have a federative constitution, which makes it difficult to summarize the national situation; the situation varies from one German *Land* to another.

What one can do, however, is to determine the general direction of European systems, and it has definitely moved and is moving in a decentralizing direction. This does not mean that governments have become weaker and universities stronger. It is more a question of redistributing power. Two different national strategies can be observed. One is the fairly undramatic, step-by-step policy, whereby a system gradually changes. The other is the dramatic, once-and-for-all strategy. Combinations of the two occur. Austria is a recent example of the 'Big Bang-method.' If the reform now under way succeeds, the Austrians will go from a strongly centralized to a radically changed, decentralized system. Sweden can best be described as having followed the combined policy of major changes – on two occasions during the last three decades – and minor, step-by-step reform processes.

In principle it would be possible to set up an index for national higher education systems, for instance using a number of parameters such as those selected in the following section, and plot them on a scale from centralization to decentralization. There are reports comparing different national systems, but not focusing on centralization-decentralization only. What can be said, however, is

that it is very rewarding for anyone interested in practical higher education policy or administration to study individual national systems and make comparisons with his or her own. One always finds new ways of tackling specific problems, new combinations of decentralized and centralized governing techniques, etc. However, one also has to watch out in such scouting adventures, and talk to many people, especially across the government-university divide (and also across the rectorate-departmental divide)! What one party boasts of as a decentralizing measure the other party might look upon as just the opposite. It is the totality of a national system that counts.

### **Decentralization in practice – Sweden as an example**

Let us now look for an example, where some of the above arguments can be tested and illustrated. For natural reasons the author has chosen his own country, Sweden. As indicated, Sweden has moved from a rather strictly centralized higher education system to a fairly decentralized one, but not extremely so. It is appropriate to start with a short overview of the Swedish higher education system, in the form of a few basic facts:

#### **□ Sweden – some basic facts**

Sweden, located in the Scandinavian peninsula, covers 450,000 km<sup>2</sup> and has about 9 million inhabitants; a small population in the third largest country in Western Europe. It is a constitutional monarchy with a parliamentary democracy, and eight political parties in Parliament. The average life expectancy is 77 years for men and 82 for women. Since 1995 Sweden has been a member of the European Union. The higher education sector consumes about 2 per cent of the gross domestic product (GDP). Sweden ranks high in OECD comparisons as to expenditure on higher education and research.

Sweden has about 300,000 students, which means that about 40 per cent of an age cohort attends higher education. The target for governmental policies is that 50 per cent of young people should study at universities or university colleges before they reach the age of 25. These students are admitted into one of the 39 higher education institutions. Sweden has four types of institutions:

- universities – for teaching and research (15);
- university colleges type A – for teaching and research, but research only in specific fields (6);
- university colleges type B – primarily for teaching (11);
- university colleges of Art (7).

It is important to note that the Swedish higher education system is comprehensive, not binary. All institutions follow the same higher education law. All institutions have the same rights and duties in relation to the government and the students. Diversification is more prominent at the institutional level. Most of the institutions are state-run; only three out of 39 are private (owned by foundations, with agreements with the state). The formal status of a Swedish higher education institution is that of a state agency. Formally the staff have the status of civil servants.

By tradition Swedish ministries are fairly small. Many tasks performed in European ministries are fulfilled by Swedish semi-independent state agencies. The National Agency for Higher Education has three major tasks in relation to the Government and the institutions: i) it is responsible for accreditation and quality assessment; ii) it supervises the institutions from a legal point of view; iii) it performs commissioned tasks from the Government (looking into this or that question, differing from time to time).

The institutions have established a Rectors' Conference, which serves as a forum for common discussions and actions – for instance in relation to the government. The Conference cannot take decisions on behalf of the institutions; the method of working is based more on consensus among the members, lobbying with external bodies, contact with media, etc.

The institutional structure is a board, a rectorate, faculties with deans (the organization differs at university colleges) and departments with chairpersons. The board has a majority of external members, appointed by the government; other board members are the Rector, a few other academic staff and students. The Rector is chosen by the Board in consultation with academic staff and other personnel and appointed by the government. A state company for higher education buildings owns the premises, and the institutions rent them from this company. The institutions can also rent from any other company on the market.

#### □ Distribution of decision-making powers

Parliament has decided on a higher education law. The general goals of higher education are described and the distribution of power between Parliament and Government is clarified. On the basis of this the government has laid down the basic rules as to the organization of institutions, personnel, education programmes, admission of students, etc. in a higher education ordinance. This is intended as framework legislation, not a prescription in detail of what the institutions shall and shall not do. The institutions are free, with some exceptions (board, faculties) to decide on their internal organization.

In general terms the government is true to the ideas that lie behind this legislation. However, the institutions complain that in its annual budget decisions the government has found a platform to ask the

institutions to make more or less detailed reports on a great number of points. They argue that this is a way to circumvent decentralization. In a few cases the government, on political grounds, has made encroachments on what the institutions consider is part of their autonomy; these cases concern the internal organization of institutions.

The Rectors' Conference has initiated a project to study if there are other ways, in the Swedish national context, to organize the relationship between the state and the institutions. The solution should not be that the institutions break away from the state, but rather that they increase their legal independence within it. For instance a Swedish university, as part of the state, cannot appear in court or borrow money. Similar discussions are under way in the neighbouring Nordic countries of Denmark, Finland and Norway.

#### Funding

Funding is distributed in two streams to the institutions, one for teaching and one for research. There are no tuition fees in Sweden. The teaching grant is output oriented and is based both on the number of students present and the results they have achieved. The government makes a lump sum grant to each institution and the institution decides on how many students it will admit for various programmes and courses. Funds must be paid back if the 'production' in terms of student numbers and their achievements are not fulfilled. Student numbers that exceed the lump sum are not funded. There are different price tags for different groups of subjects. The government sets targets for student numbers for a few professional programmes (on a four-year basis, with preliminary targets for another four-year period). Part of the teaching grant covers renting premises, including what can be set aside for the construction of new buildings. Each year the Rector and his staff meet with representatives of the

ministry for informal consultations. The budget assigned to each institution in principle runs for a period of three years. An institution does not have to spend all the money each year; it is allowed to set aside up to 10 per cent of the grant for future expenditure.

The direct research grant from the government to the universities covers no more than about half of their total research budget. This grant is distributed on more or less historical grounds. The other half is external money, paid from different financial sources: research councils, research foundations, state agencies and municipalities, industry, the European union, etc. All these grants are paid in respect to individual researchers (or groups of researchers). The researchers often regard such grants as 'their' money, although the university management must accept them because the university is the employer of staff recruited under such grants.

The teaching grant system is fairly well balanced from a decentralization point of view. The institutions exercise great freedom in using the money - but they must put considerable energy into forward planning. The inclusion of investment money in the grant is very constructive. To many institutions this system puts property matters at the centre of strategic planning and management. Earlier all infrastructure of this kind was dealt with by a central agency, which had the reputation of being too bureaucratic and slow in its actions.

The Swedish system for financing research at the universities must be seen against the background of the research organization at large in the country. In contrast to most countries Sweden has very few independent research institutes. Instead the universities are society's research institutes. The system is decentralized in the sense that the individual researcher and his or her department are the central actors. It has also an in-built quality assurance component. At the moment

an obvious disadvantage is the imbalance between the direct grants for subsidized research and for externally funded research; the free money should be increased.

□ Academic matters

The institutions decide on what programmes and courses they want to deliver and their structure and contents. The government decides on what degrees shall exist in the country and what institutions are entitled to award them (for instance not all universities train physicians and not all university colleges award master's degrees). The government also formulates goals for a number of professional programmes, although in fairly general terms. Recently the government has asked a task force to report if such goals, decided at central level, should be abolished.

All research is free for the individual researcher. He or she can choose any subject and method, and the results can be published freely. The institutions establish chairs, and appoint the professors. It is explicitly said in the Higher Education Ordinance that the Board cannot appoint professors. It is a purely academic matter and must as such be decided on by the Rector (on the advice of a committee at faculty level).

The present division of labour between government and institutions in academic matters might not seem too advanced from a decentralization point of view. However, it is interesting to look back 25 years. At that time it was the centre (in the form of a central agency) that decided on the detailed structure of all programmes in the country. The curricula for all subjects were nation-wide and had to be followed by all institutions. Not long ago all professors were appointed by the government.

Recently the government decided to fund graduate schools for different specializations and with nationwide recruitment. It also decided on what institutions should be responsible for which school and who should co-operate with whom. Many institutions reacted strongly against the outcome of this exercise, since they regarded such decisions as lying in their own domain.

#### □ The admission of students

The Government lays down the basic rules about the qualifications for those wanting to be admitted to a university or a university college. There are both general requirements that all students must meet, and special requirements for individual programmes and courses. The general requirements are fulfilled by a student that has either completed the upper secondary school or has succeeded in a nationally organized aptitude test. If the student is aged 25 and has worked for four years he or she can use this as an alternative basis for admission. The special requirements vary from programme to programme. The institutions must apply a standard framework of requirements. Sweden has a *numerus clausus* system. If there are more students than places available a selection takes place. This follows detailed rules established by the government. However, on advice from the institutions the government has recently resolved that at most 10 per cent of the places available should be a free quota for the institutions to decide on. For practical reasons about half of all students are admitted through a central agency, which operates on behalf of the institutions.

If one puts the Swedish admission rules in a European perspective they read as being quite centralized. This is a Swedish tradition, a heritage from an earlier period when rules of this kind were natural as in other spheres of higher education planning. On this very point politicians have been reluctant to give up centralization, even if their



resistance has been less vehement recently. An argument in favour of nationwide, detailed rules is that they are intended to protect the students; all students should be treated on an equal basis. The counter-argument is that equality is not favoured by treating students as if they are all alike. A negative consequence of this policy is that curricula and pedagogical innovations must be carried out on the basis that the admission rules cannot be adapted to new situations and attempts at introducing innovation are hampered.

□ Salaries

Salaries are negotiated between the employers and the employees' organizations, that is the trade unions. On the national level the institutions, together with a number of other state agencies, are part of a state employers' organization; in principle it is independent from the government. On the employee side there exist three major organizations. These two parties – employers and employees – negotiate framework salary agreements, as well as agreements on other labour market issues. On an average these agreements extend over two years. They usually stipulate a salary increase of *x per cent*, not for the individual employee but for the whole organization where he or she is employed so that it is for local negotiation to decide how the sum allocated is actually distributed.

This system means that each institution, within the national framework, is free to set the salary for each individual. In principle, person A can receive no increase whereas person B can get his or her share plus what person A had hoped for; in reality this seldom happens. Nevertheless salaries can be said to reflect each individual's capacity. However, in comparison with some European countries, Sweden has a long tradition of 'equal' salaries; the salary scales are fairly narrow. In spite of the freedom to award individual salaries the end result is that the gap between the most prominent researcher

and the youngest laboratory assistant is not as wide as it is in many European countries. Nevertheless, salaries are used instrumentally to compete for the best staff.

### **Some reflections**

A lesson to be drawn from the above concerns the *character of power* in a centralized as contrasted with a decentralized system. It would be naïve to believe that power ceases to exist in a decentralized system. It does not – but power moves and changes in character. The Swedish institutions now enjoy greater freedom in relation to political power than previously – but they have had to accept that the government has tightened its grip at the top of the institution that is at the board level where members are appointed by the government.

Linked to this observation is the fact that parallel to decentralization and deregulation runs the demand from the top for increased institutional *accountability*. Substantial sums of money from the taxpayers' purse are put at the disposal of institutions and it is only natural that the institutions have to report on how this money is spent and what results have been achieved. In the Swedish higher education system this demand manifests itself in various ways. First, there are an increasing number of issues on which the government asks for detailed information *ex-post*, often linked to how the institutions spent their grants. Second, a fairly elaborated quality assurance programme has been established. This started as a programme for checking that institutions had quality assurance mechanisms in place but it has developed into a programme for checking the quality of teaching. In a cycle of six years all undergraduate programmes and courses are being evaluated. This must be said to be a fairly ambitious undertaking.

An institution that is permitted to use its own resources according to its own plans and ambitions to reach certain goals is stimulated to follow a *sounder spending policy* than it would do in a centralized system. Budgets that cover more than one year and the right to set aside money for later use are essential instruments in laying the foundations for such policies. Long-term budgets force institutions to spend more time planning their activities and thus to take full responsibility for them. Swedish experience suggests that the rapid growth in student numbers in the 1990s would have led to serious problems if institutions had not themselves been responsible for their building programmes; the previous centralized, nationwide system would have been too slow.

Both parties – the government and the institutions – must respect *the rules of the game*. There is a sort of balance of power: There seems always to be a risk that one or the other party wants to change its role in the game. The government sometimes, on political grounds, goes too deep into what is the institutional sphere; any such transgression diminishes the credibility of the centre. The institutions, on the other hand, sometimes find it easier, tacitly or openly, to ask for a decision from above; an institution must also be prepared to take unpopular decisions, if it wants to live up to the image of being fully in charge. A delicate point is of course how the institutions should co-operate among themselves in relation to the political power. There is much to be said on this topic, but in summary institutions must find ways both to compete and co-operate with each other. This is a parallel to what companies have to do, and have done for a long time.

One should not think that a decentralized system, based on a transparent division of labour between government and institutions, excludes the necessity of *communication and dialogue*, beside formal

reports and evaluations. On the contrary, in a decentralized system there is an obvious need for formal and informal dialogue. This is a weak point in the system described above. The reason might be that there is a strong tradition in Sweden to rely on formal organization and formalized means of communication. Swedish institutional leaders look enviously at neighbouring Finland, where communication between government and institutions seems to be much better – although Finland shares the same traditions in this respect.

Any system for governance needs to be *consistent*; various components must be balanced to match each other. Primarily the responsibility for keeping the system in balance rests with Parliament and Government. However, it seems difficult to find a national system without *dysfunctions*, whatever the political ambitions are. One example has been given of a field where, according to the author's view, Sweden lags behind in decentralization, namely the admission of students. It is a truism that no one can expect to live in a perfect world. Under such circumstances the question for the institutions is how to minimize negative consequences of existing imbalances. It is a component of good leadership to learn to navigate in such waters!

## Conclusion

The above can be summarized in four short statements, which can serve as an ultra-executive summary:

- At the central level decentralization means that there are fewer but stronger ways to exercise power. This applies both to the government at the top of the national system and to the Rector at the top of his or her institution.
- For the next level – both institutions in a national system and faculties, schools or departments at the institutional level –

decentralization means increased freedom combined with greater responsibility.

- Both parties – the political power and the institutions – must try to be consistent in the general composition of the system and to follow the rules of the game that they have agreed on.
- Decentralization is a modern and effective mode of governance. If properly handled it prevents bureaucracy and promotes energy. This is necessary if universities and other institutions of higher education wish to take the lead in building the knowledge society.

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## **2. STRATEGIC MANAGEMENT IN RUSSIAN UNIVERSITIES**

### **1. Overview: Strategic management in Russian universities**

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It is not easy writing about universities, since the specifics of the team work involved are rooted in deep specialization and division according to academic disciplines. That is why any discussion of a university as a whole, tends to end up in the area of resources (or their absence), curricula, syllabi, hours, salaries and other formalities. However, the matter of primary importance for the university, that is the generation and dissemination of knowledge, happens in laboratories and classrooms. That is why it is often implied that whatever takes place outside those areas is secondary, routine and unimportant.

It is even more difficult to write about managing a university. The main reason for this is that any level-headed and self-critical person would be careful in judging the institution that has been formed by Erasmus, Copernicus, hierarchs of the Vatican and the fathers of American democracy, Napoleon and Humboldt, Lomonosov and Lobachevski as well as thousands of other prominent scholars and academics. Besides, there are only a few people who have managed a large university and even fewer are remembered for promoting the university idea and developing a specific university. Every individual's experience is personalized and specific. Because of the presence of disciplinary barriers, university employees are more isolated from one another than in any other organization. Mathematicians see the world and their organizations differently from biologists and

philologists. In this environment it is not easy to come to a mutual understanding, even more difficult to achieve harmony and stability and extremely difficult to inspire members to implement a co-ordinated policy.

Moreover, universities are extremely diverse, even if they consist of the same faculties, train in the same specialties and have similar budgets and groups of students. Each university has its own history and traditions and a unique balance of powers and contributions from research schools and units. Each university, as a part of society, also accumulates the cultural values and traditions of people living in its area.

Dynamic changes in all spheres of the global and competitive environment, including research and teaching, have made issues of efficiency, management and quality urgent points on the agenda. Today we take it for granted that we need to compete to finance our own research in a competitive environment; we no longer blush at teaching or consulting for a fee; we seldom think of the university as the ivory tower; we are no longer shocked by universities being described as *entrepreneurial, innovative, research, open* or even, *virtual*. Facing problems within the university we increasingly look not to the ministry or officials from the capital but to one's own university management, its ability to search and find opportunities within the institution and its connections with the external environment.

Developments in Russian and global education over the past 10 to 15 years clearly identify and separate the roles and responsibilities of the academic community and of university management as well as the federal, regional and institutional levels of management. The author had the privilege over the past decade to visit many universities in his home country and abroad, participate in numerous major

international projects on university management, get to know, collaborate with and simply visit, many managers from various universities from small provincial institutions to major centres of research and teaching. Observing the successes and failures of universities, and discussing problems of higher education with the remarkable leaders of different institutions, I more and more believe in a restated idea of Leo Tolstoy's: that all 'happy' universities are happy in the same way, but all 'unhappy' universities are unhappy individually. The recipe of the university's 'happiness' and success is very simple: a clear vision of the objectives and ways of achieving them, the cultivation of academic freedom, a self-critical attitude to the quality of one's own performance, effective management and inspiring leadership. These are but a few components, but each of them is supported by the vast domain of those other activities characterized above as secondary, routine and unimportant, including its theoretical substantiation and creative application in hundreds of universities worldwide. If taken together these components make up *strategic university management*, the main subject under consideration in this chapter.

People often imply something military when the words strategy and tactics are used. In the early 1960s, a Harvard University professor and well-known expert in economic history introduced the concept of strategy as a science (Chandler, 1962). Based on his fundamental research of American business he came to the conclusion that the internal structure of an organization is secondary in relation to its strategy. Almost 20 years later, in the late 1970s, Igor Ansoff first used the idea of '*strategic management*' to indicate "the interrelated complex of planning the strategy of an organization and applying the developed plans" (Ansoff, 1979). The development of strategic management as an independent discipline was greatly affected by the works of the following authors: Michael Porter, G. Hamel and S. Prahalad, G. Minzberg, M. Khanian and J. Freeman,



J. Pfeffer and G. Salansik. These people have founded schools of strategic management. In the 1980s the concept of strategic management was already developing in the business community as the main paradigm for organizing a successful business.

This period coincided with significant changes in higher education in the industrial countries of Western Europe and North America, after these countries had gone through serious social cataclysms in the late 1960s and early 1970s. These changes affected the whole system of education: the role of government, the principles of finance, the spheres of responsibility for university management, etc. In brief, these processes could be boiled down to the following: government gave up controlling the process and started monitoring the results of universities' performance. More attention was devoted to the effective use of funds allocated by government and this was complemented by increased university independence and responsibility for their own management. More funds, especially for research, were distributed competitively. Teaching became mass-oriented. These changes forced university managers to turn to business and look for methods that would increase the effectiveness of their work. For the first time strategic management ideas broke into the world of academia.

### **The basic concept of strategic management and tools used**

Two key principles play an important role in management: 'efficiency' and 'effectiveness'. Efficiency is directly connected with cost minimization. No matter how wide and diverse the range of a university's prospective scope for teaching and research might be the institution still faced a lack of resources (funding, equipment, rooms, and intellectual workforce). The cost of university teaching and fundamental research was rapidly increasing. Costs therefore had to

be restrained and people were required to do more for less money. This, in turn, imposed limitations on the characteristics of organizational infrastructure and on methods and mechanisms for distributing resources.

For an academic institution the principle of effectiveness is of extreme importance for its success. Effectiveness is, first of all, a question of choice – what to do or what not to do. It may also involve a choice of direction: an emphasis on fundamental research or on more lucrative applied activities, emphasizing the training of the intellectual elite or mass higher education. Effectiveness also involves choices of partners for co-operation or a choice between equity in distributing resources or one based on selective support of centres of excellence (among research departments, teams, schools, units). Applying these principles in the everyday practice of university management is a significant and necessary condition for the transfer from simple to strategic management. Another precondition is understanding the university as an open system. An open theory system defines an organization as the total of interrelated subsystems located in the super-system, the environment, around them. The openness of the system means connecting with the environment, while the objective of the system is to meet the demands of the environment (Sporn, 1999).

The above predetermines strategic university management as a “circular process based on the permanent investigation of the external and internal environments of the organization as well as a clear and widely-shared notion of the university mission by team members”. An examination of external and internal conditions should create a clear understanding of a university’s strong and weak points as well as the opportunities and threats which exist in the external environment as revealed by a strengths-weaknesses-opportunities-threats (SWOT) analysis. The first is necessary to evaluate critically

an organization's potential and to define a feasible level for planning while the latter enables factors in the external environment which facilitate or complicate the implementation of plans to be identified.

The outcome of this analysis is the preparation of a 'university mission statement' which should play a key role in the strategic management of the organization. The mission statement should not be treated as a mere declaration; the mission is a flag in the hands of management showing the direction or, referring again to the military terms, the main lines of attack. The mission statement is an instrument that makes management decentralization natural and easy to achieve while management itself becomes easy to monitor and to be objectively appraised both by the team and by higher bodies.

A good mission statement is brief and uses broad but transparent and unambiguous formulations. In order to specify the main provisions of the mission in areas of activity considered as strategic for the success of the organization the mission is normally supplemented by several interpreting declarations called 'activity policies' in specific areas. The mission statement and activity policies serve as the foundation for developing a 'strategic plan' (Peeke, 1994; Kniazev, 2001; DeJonge, 2001). This plan initiates the second, no less important, stage of the strategic management process - 'strategy implementation'. Plans materialize when they are accompanied by the corresponding 'budget and structural transformations'. The latter implies a redistribution and accumulation of resources in key areas and bringing the organizational structure into conformity with problems to be solved. The last stage of the management cycle is the 'evaluation' of the achieved progress, results and process. If necessary, the mission is re-specified, plans are corrected and the structure and budget procedures are changed.

The cyclic recurrence of the strategic management process presupposes reiteration, regularity, repeatability and prioritizing several management function complexes. To secure this process and perform these functions the relevant ‘support systems’ must be formed. Their configuration can vary but, typically, will include financial planning systems, human resource management, information services and institutional research, international as well as regional and community relations, etc.

### **The university as a professional bureaucracy**

If we summarize Minzberg’s main concept (Minzberg, 1992), an organization represents first, a ‘division of labour’ among participants and, second, a ‘co-ordination’ of their varied activity. Labour is divided into ‘five main types of units’ and is subject to ‘five co-ordination mechanisms’. Every organization exists in a specific environment which can be characterized by several situational factors. The integration of these ‘situational factors’ with the most relevant and adequate structure parameters enables Minzberg to choose ‘five basic organizational configurations’.

The chart below provides a brief description of the main units varying according to the type of functions performed:

**Figure 2.1 Main units and functions performed**

Strategic apex		
Technological structure	Middle line	Support staff
Operational core		

The ‘operational core’ contains staff who have the main functions of producing goods and services. In the university these are faculty and researchers organized into departments, laboratories and institutes. This is the operational core that transforms actual

expenditure into products and services: the accumulation and distribution of knowledge.

The 'strategic apex' personifies the organs of institutional management. In Russian universities these include the academic council, the rector and the rector's office as well as trustee and administrative boards and other governing bodies that have recently emerged. The main goal of the strategic apex is the supervision of internal resource allocation and conflict resolution. In aggregate this forms what is called the institutional design. Other important tasks of the strategic apex are the conduct of relations with the external environment and developing a strategy that is both explicit and implicit.

The 'middle line' combines the strategic apex with the operational core. It is here that policies and strategies of organizational behaviour become operational actions. The middle line in universities represents a hierarchy that includes academic leadership from the head of a unit or from a research institute up to the rector.

The 'technological structure' represents the machinery of internal regulation over the work of academic departments, research units and other university activities.

Finally, the 'support staff' comprise university employees performing their services outside the operational core. This is the domain of legal matters, public relations, accounts, transport, catering for faculty and students, security, etc.

One of Minzberg's five basic organizational configurations is the 'professional bureaucracy'. In his classification Minzberg believes that this is characteristic of institutions of higher learning, as well as law firms, financial companies, hospitals, etc. The general features of this configuration are as follows:

- vertical power decentralization (key expertise is concentrated in the operational core, or the autonomy of a faculty member);
- strong horizontal specialization (due to the threat of the conservative and egocentric self-identification of narrow specialists in the wide range of presented specialties);
- skills standardization as a basic co-ordination mechanism in the operational core (methods of teaching and research, prevalent values and understanding of academic quality, syllabi, curricula, lectures, seminars, oral examinations, etc.);
- numerous and diverse support staff;
- weak technological structure;
- weak middle line;
- weak strategic apex.

The last three characteristics best explain the weaknesses of the decision-making characteristic of professional bureaucracy organizations. The weakness of the technological structure is partly caused by the differentiated spectrum of special disciplines and areas. While the weak middle line and the weak strategic apex are predetermined by the nature of power in academic life and the ambiguous nature of management. Both are apparent when managing a university, the faculty, a department, or a laboratory, and the higher the position in the university hierarchy the greater the role is played by the administrative. However, the system of appointing to senior university management positions is mainly based on academic achievement. This leads to the fact that management experience is arrived at empirically without any co-ordinated training for the tasks that have to be performed.

Taken together, these peculiarities lead to the emergence of numerous irrational consequences. Thus, faculty almost universally disagree with the recommendations of management or accept them with great suspicion. Faculty strive for total control over management

by creating all kinds of committees and councils and putting questions which lead to long drawn-out discussions. This prevents quick introduction of innovation in universities and leads to incremental change rather than to decisive steps towards reorganization; when resources are distributed the principle of equity is applied rather than efficiency.

### **The university and entrepreneurship: what is in common?**

In *Creating the entrepreneurial university: organizational pathways of transformation*, Clark (1998) summarizes the results of a large-scale investigation into the development of five European universities. This work has inspired widespread discussion within the academic community and the Institutional Management for Higher Education (IMHE) programme of OECD devoted its General Conference in 2000 to a discussion of the book. Clark analyzes changes in management at five universities which are extremely diverse in their profile and history: Routes to success have varied greatly for the universities of Warwick (UK), Twente (Netherlands), Strathclyde (Scotland), Chalmers (Sweden) and Joensuu (Finland). Clark singled out five main change elements as implicit to the 'concept of the entrepreneurial university':

- creating a strengthened steering core;
- forming a diversified financial base;
- forming an extended periphery of university development;
- stimulating the academic core;
- integrating the entrepreneurial beliefs and values in the academic community.

Minzberg's conclusions on the managerial features typical of universities as organizations of professional bureaucracy can be reconciled with Clark's in respect to finding a route to university

success: The answer to the weakness of the strategic apex and the middle line is to strengthen the central steering core; forming the extended periphery of university development and disseminating entrepreneurial values amongst staff members are the outcome of an active use of vertical power; decentralization and the horizontal specialization of academic activity; loyalty to the university mission and its resource provision stimulates the academic core and diversifies the financial base of the university.

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## **2. A project-oriented approach to university management**

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### **Introduction**

After serving the needs of the industrial society during the last century, the world educational system now has to respond to the new challenges of globalization and the information society. The world academic community has been discussing this problem during the last decade and a number of related books were published by the end of the 1990s (Clark, 1998; Slaughter and Leslie, 1997). The causes of the need for the transformation of the entire educational system are well known: They are the student number explosion, constantly emerging new educational tasks, and, at the same time, the limitation and shrinkage of state financing. The general background for these processes is globalization that leads to the beginnings of a global educational market, student mobility and a very high level of international competition between universities. The former state-protected domestic educational institutions have begun to transform into international and even trans-international ones and to feel the 'state ground' slipping away from under their feet. The international university community is searching for an economic and organizational institutional form to respond to new global challenges. Some

universities have chosen to enrich the classical university style of work with entrepreneurial capabilities. The terms '*enterprise university*', '*entrepreneurial university*', '*responsive university*', and '*academic capitalism*' have become key words for the new approach to the way universities function.

### **Russian socio-economic context**

The Russian educational system has experienced the double impact of the new global and domestic socio-economic processes. Besides the above-mentioned global transformation, it has had to face the results of the transition of the Russian state to the new democratic society and market economy, which began more than 10 years ago. Over the past 10 years, Russian universities have passed from 100 per cent federal state funding, support and control to a substantial reduction in the state managerial role demanding a need for self-financing. At the same time, state universities have now much more freedom for their own decision-making than they had before. These new realities have generated the necessity and provide a possibility for the universities to overcome their budget difficulties by attracting additional financial resources from the existing educational market. Russian higher education stakeholders exhibit a clear enough understanding by now of these new realities and demonstrate the ability to turn to new styles of operation in which the universities themselves can do more to ensure their existence and development.

In the former Soviet centralized state system, all institutions of higher education were managed through a uniform state plan. The state provided centralized financing and control. The main source of university funds was direct money transfer from the state budget according to the state development plan. An additional source was contractual research work for industrial enterprises. However, since in the Soviet Union all enterprises were state-owned, it was simply a

form of indirect state finance. Universities had a rigid vertical organizational structure (central administration – faculties – chairs) and fixed salary rates for all university staff. To create any university substructure the university council had to ask permission from the state ministry of higher education. No tuition fees were permitted, so that no additional students above the number defined by the state plan were permitted to enter universities, although even at that time the demand was very high.

Some changes in the Soviet state educational policy were made at the end of the 1980s during Gorbachev's *'perestroika'*. However, the culmination of changes fell in the period 1992 to 1996, when, owing to the radical economic reform, universities almost lost state funding. On the other hand, a new liberal law 'on education' adopted by the Russian State Duma gave universities a lot of freedom in self-organization and to attract funds and fees from different sources. This immediately provided a rapid development of private higher educational institutions of a different scale (mostly small ones but some of them are trans-regional and have departments in many Russian regions). These newborn private institutions are practically profit-oriented and behave as real market enterprises, but probably still cannot be considered as real universities performing their traditional progressive mission because they are not multi-disciplinary, do not provide research-based education (which requires considerable investment, especially in the natural sciences), and are not able to generate their own scientific and teaching staff.

What happened to large-scale classical Russian universities with a long history? Some of them could not find a way in the new conditions and declined. Nevertheless, others began internal reforms towards new organizational and managerial structures aimed at promoting self-development. These universities not only safeguarded their educational and scientific potential, but also managed to enhance

considerably their educational and research activities and greatly increase their student numbers.

To succeed in the fast developing and highly competitive regional educational market, universities have to be more dynamic, which strengthens the role of strategic management and the need to intensify the innovative activities of all basic university units. To stimulate this ability to innovate at the academic departmental level university managers must be given more authority in planning (new rules of the 'internal university game' must be introduced) and consequently they must be specially trained and reinforced by the introduction of new infrastructures for strategy planning.

The University of Nizhnii Novgorod (UNN, Nizhnii Novgorod State University, named after N.I. Lobachevski) is one of the largest Russian universities; it overcame the difficulties of the transition period and now demonstrates sustainable development. UNN was founded in 1916. It is ranked fifth among Russian classical universities in the official rating list published by the Russian Federal Ministry of Education: Its total number of students is more than 25,000, with about 1,000 PhD students; the teaching staff includes more than 1,000 professors, associate professors and teachers; there are 20 faculties, 116 chairs, and 6 research institutes. All the branches of knowledge (other than medicine) are present in UNN: There are faculties for physics, chemistry, biology, mathematics, mechanics, information technologies, physical training, military studies, law, economics, finance, management and business, history, sociology, philology, foreign languages, continuing education, distance learning. The Department for Technology Transfer (including the Centre for International Scientific and Technological Cooperation) and the technology park work in the field of science and technological commercialization. UNN participates in many different European Commission scientific and educational programmes (Framework Programme 6, Tacis, Tempus, etc.).

This current university status differs considerably from the situation at the end of the 1980s. The overall number of undergraduate and PhD students were then about 10,000 and 200 respectively; most students studied mathematics and natural sciences; there were only nine faculties (there were few faculties in the liberal sciences). Thus, we see a substantial university growth in the last decade. This growth happened in a very unfavourable economic context. Almost 10 years ago, UNN, like all other Russian universities, faced the problem of a radical reduction of state funding; funding received from the state could cover only a small part of universities' needs. Thus, the need for self-development or, in other words, the need for an entrepreneurial style of work became vitally important for the university at that time. The result is that UNN budget for the year 2000 consisted of 27 per cent federal state money, with the remaining 73 per cent coming from tuition fees, contracts and grants.

The main challenges which UNN met on its entrepreneurial way, are as follows:

□ Drastic state funding reduction

University state funding was narrowed to staff salaries and to student scholarships (both at very low levels commensurate with the cost of living). The state did not provide funding for material resource development (renovation, equipment, etc.), for development of research-based education (scientific equipment and consumables, continuing education for researchers and teachers), and even for energy and the supply of heat. At the same time, the first half of the 1990s was a period of privatization, conversion and industry restructuring; contractual research work with industry practically vanished from the marketplace. Thus, all the old ways to earn money, in which university managers and professors were experienced, disappeared.

### □ Change in knowledge demands

Another unexpected problem for the Russian university community was a change in educational demand. During the Soviet period, Russian universities were oriented by the state towards mathematics and natural sciences. This reflected state policy that gave top priority to the development of military-related industry. UNN is a case in point: There are three physics faculties in the university (physics, radio-physics, general and applied physics); each of them containing a number of chairs in different physics branches. UNN has close co-operation with three big physics research institutions (one of them being included in the university structure). Thus, UNN had, and still has, numerous excellent teaching staff in physics. The same applies to mathematics, mechanics, chemistry, and information technologies. Owing to the industrial depression caused by restructuring (conversion), the need for industrial engineers and researchers was reduced. At the same time, the creation of new economic, financial, state and social institutions in Russia led to the explosion of demand for social science specialists.

### □ Student number explosion

Although the Russian demographic situation has not changed very much, the number of people wanting to receive a graduate degree has significantly increased. Among some worldwide reasons for this there are some quite specific. The Russian educational system experienced a very high demand for retraining and second higher education. The main growth in student numbers is explained by the need for retraining those people who in the past received technical education or education in the natural sciences but are now involved in business or politics. The traditional Soviet educational system possessed very poor facilities for adult education. Thus, it was a new serious problem to organize new educational structures and

programmes including accelerated training for this clientele. At the same time, the number of traditional students has also been growing.

□ Commercialization of education

Since money was too tight to implement the state educational plan (which still exists), it was impossible to find state funds to respond to this new educational demand. There was no alternative to the creation of a new commercial system of education. Russia had no experience in knowledge commercialization or the management of commercial educational organizational structures.

□ Competition in the higher educational marketplace

Before the new processes in higher education began, large-scale Russian universities (and UNN is one of them) had been monopolists in their regions. There was competition between universities in the all-Russian 'marketplace', but owing to a lack of population mobility, there was actually a regional educational monopoly or oligopoly. The new liberal educational legislation and the great educational demand promoted the creation of many new private institutions of higher education. If we take Nizhnii Novgorod Oblast (region) with a population of 3 million, we see that about 60 different local higher education institutions (HEIs) or Moscow (St. Petersburg) branches offer services in higher education. They form a new educational market and provide a very high level of competition in the local marketplace.

Thus, UNN had to find relevant solutions to the above problems. The term 'entrepreneurial university' was not known in Russia at that time. Moreover, even now many Russian professors and researchers recognize terms of such type (knowledge commercialization, technology and science commercialization) as incompatible with 'real' science and education. It was and is one more challenge that

university managers had to overcome in looking for ways of survival and development in the new socio-economic conditions.

### **Searching for new organizational forms of education**

Clark describes the general features of an entrepreneurial university (Clark, 1998). Paradella gives a classification of university organizational designs (Paradella, 2001). He considers progress in this field as being away from a traditional vertical university through a dot matrix university and a modern matrix university towards a technopolis university. As the main feature of the organizational model he takes the relationship between science and teaching in a university (laboratory – classroom).

Russian socio-economic conditions force Russian universities to concentrate on the intensive search for new organizational forms of education. The University of Nizhnii Novgorod is a traditionally responsive university that even at the time of the strictly centralized Soviet economy and ideologized social life provided examples of non-standard organizational decisions responding to new challenges. During the last decade new approaches have been developed in various stages to the design of higher education organization:

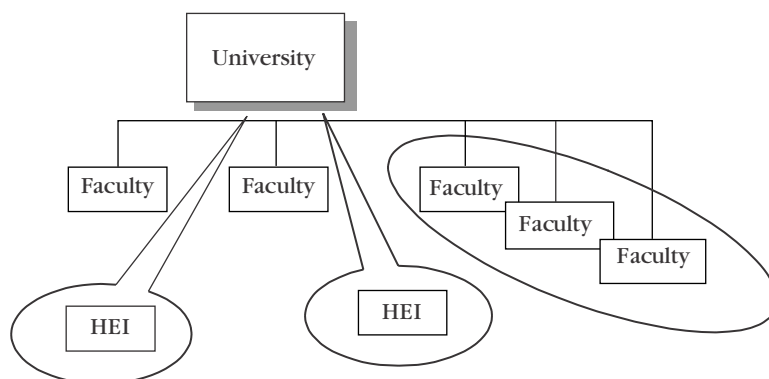
- faculty multiplication (a faculty division into two new ones);
- inter-institutional integration (integration with other HEIs);
- intra-university networking (horizontal links between university departments);
- a project-oriented approach to higher education organization.

At the first stage, UNN managers used traditional extensive ways to create new classical faculties. One was the detachment of a new autarkic educational programme from a faculty and the creation on this basis of a new faculty to give the latter a possibility of a faster



self-development (*Figure 2.2*). One such example is the detachment of the Faculty of Sociology from the old UNN Historical Faculty. Another is the inter-institutional integration with an external higher education institution. Using this approach, the UNN Law and Finance Faculties were created: UNN attached the local branches of corresponding Moscow institutions (*Figure 2.2*). Naturally, the creation of new faculties responding to the new high demand in liberal sciences (these faculties worked not only on federal budget money but also on a commercial basis) provided a significant additional tuition fee income.

**Figure 2.2 Inter-institutional integration and faculty multiplication**



Nevertheless, this traditional approach did not increase the general productivity of university labour and did not give flexibility in responding to new constantly emerging inter-disciplinary educational tasks. This traditional development still kept solid walls and barriers between chairs, departments, faculties and teaching staffs. UNN managers searched for a way of intensive university development that allowed an increase in teaching staff productivity and gave professors more freedom to generate new funds while

working within the framework of the university structure and strategy. It should be noted that at the beginning of the 1990s the 'brain drain' from universities threatened the existence of the higher educational system. Because of very low salaries, many professors worked outside the university keeping their university position only formally. Thus, internal flexibility in staff positions which gave freedom for the organization of project-driven work inside the university was recognized as an integral part of responsive university management.

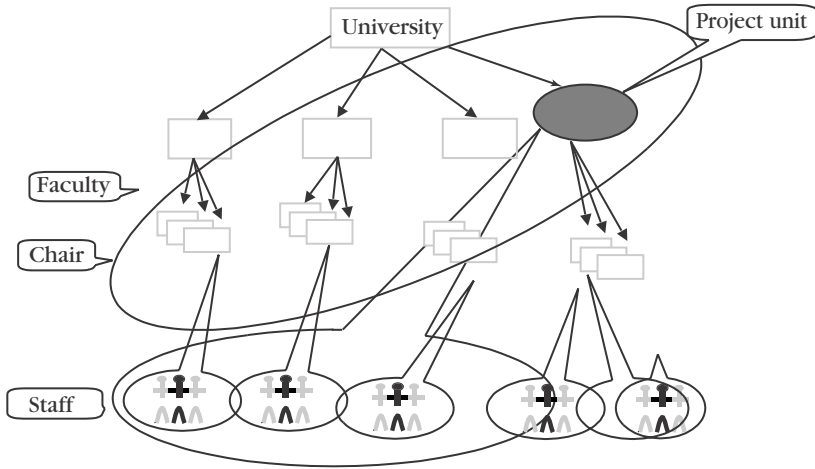
### **A project-oriented approach**

We say the word 'project' when we mean a time-bound work, something goal-oriented, and, with scarce resources. The main feature of a project is finiteness. It is not, of course, compulsory, but we understand that once we finish a project we start another, maybe, in another field. Traditionally, teaching is not recognized as project-driven work and the notion relates more to research. The reason why researchers are project-driven is the essence of science. The reason why teaching has become project-oriented is the rise of the new teaching market, knowledge commercialization, and competition.

One of the widely recognized obstacles to the improvement of teaching and research staff productivity is the strict vertical structure of university organization and the 'barriers' between different academic departments. The project-oriented approach is intended to break these barriers down in order to make the organization of a competitive project group possible. The project-oriented approach to the planning and management of university activities means that teaching provided by the traditional faculties and departments is supplemented by a diversity of educational activities such as special forms of teaching (teaching in interdisciplinary fields, accelerated education, continuing education, distance learning, short-term

training courses and seminars, consulting services, etc.), which are designed to meet a current market demand and are organized on the basis of project principles. The project-oriented approach requires a new vision as to how to implement a university strategic plan: Achieving a university strategic objective is formulated as a sequence of steps: projects. This prompts the need for a special project organization; the position of a project unit inside the university is shown in *Figure 2.3* (Groudzinski, 2001). The project unit (project faculty or project department) establishes horizontal links with traditional university departments.

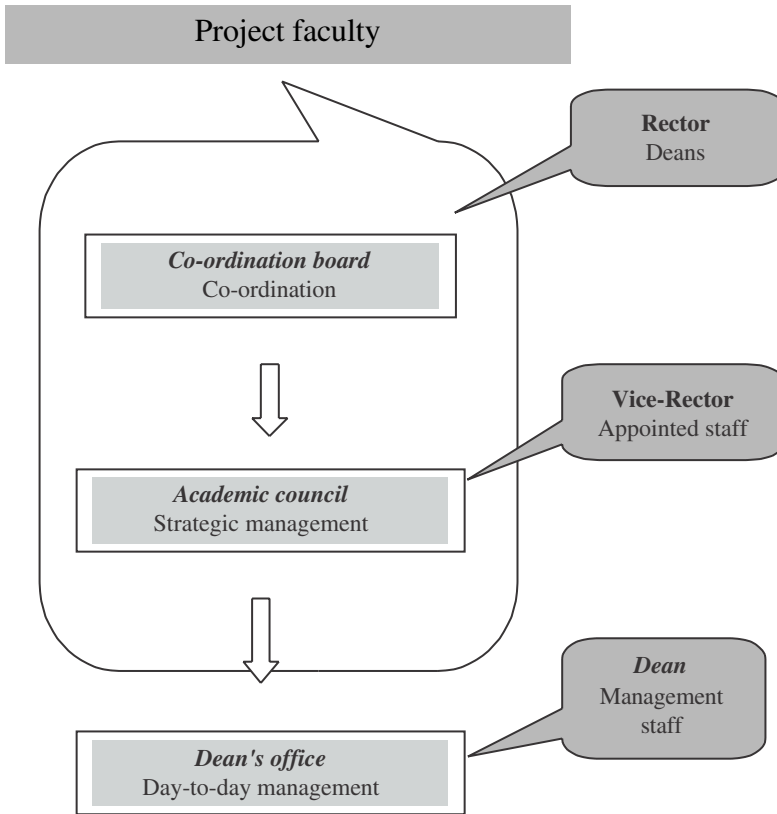
**Figure 2.3** Position of a project unit in the university



To make this complicated network structure workable, the central university administration adopted some non-traditional management principles (which were, however, in accordance with existing legislation). Firstly, to encourage teaching staff to work more intensively, restrictions on salaries were lifted so that each professor or university manager could receive an extra payment in accordance

with his or her contribution to departmental income. Secondly, even more non-traditionally, a rule was adopted that allowed university people to hold several supervisory positions. When creating new departments, UNN found there was a lack of qualified staff to head new departments, lead new educational programmes, and so on. Thus, it was considered acceptable for an experienced professor heading an old classical department to launch at the same time a new educational structure (department). Naturally, such a professor was paid an extra salary for this extra work. This situation of holding more than one appointment has sometimes led to management problems: A person can be a subordinate to two different bosses; two people can be bosses and subordinates to each other simultaneously in different horizontal structures. To resolve these problems a special management system has been invented for such project units. *Figure 2.4* illustrates the external management structure of 'a project faculty'.

**Figure 2.4 Management of project faculty**

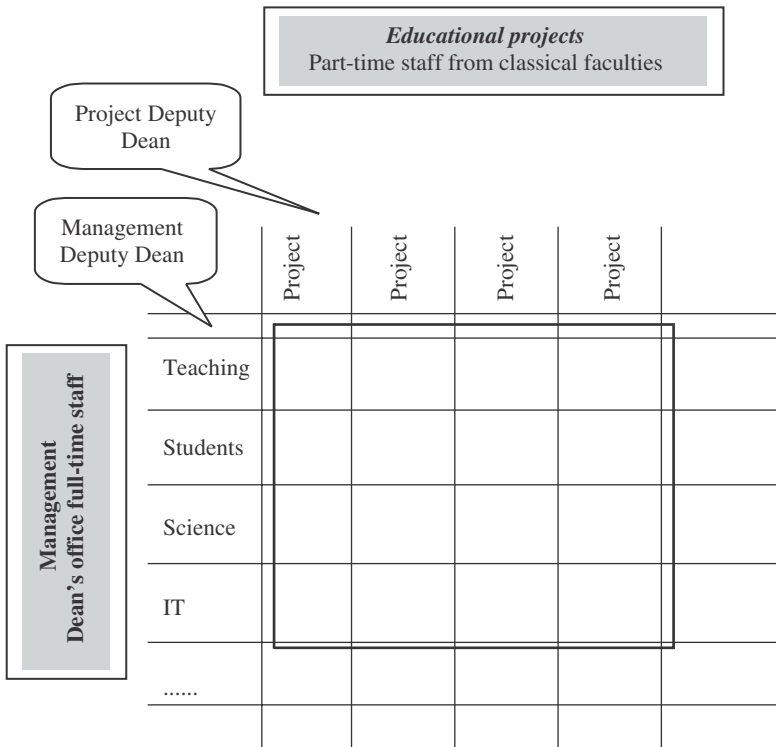


Traditionally, in Russian universities the dean's office and the academic council manage the faculty. The academic council includes the heads of departments and some respected professors from the faculty full-time staff. The project faculty academic council, on the other hand, includes professors and managers from all the basic faculties involved. Normally, they are the 'contact persons' from the other faculties. The academic council provides the faculty strategic management; the dean's office, which consists of full-time working managers, provides the day-to-day management. Besides the listed

management units, the co-ordination board, headed by the rector, and including the deans, is part of the management process. The co-ordination board acts as a court and meets only in conflict situations.

The project faculties are created to respond to a new demand. The life cycle of many of these new needs is unpredictable. It was recognized that the classical faculties were not flexible enough to respond to conditions which involved risk. From the very beginning, the faculty management structure was oriented towards teaching projects. The internal scheme of faculty management is shown in *Figure 2.5*.

**Figure 2.5 Internal structure of the project faculty**

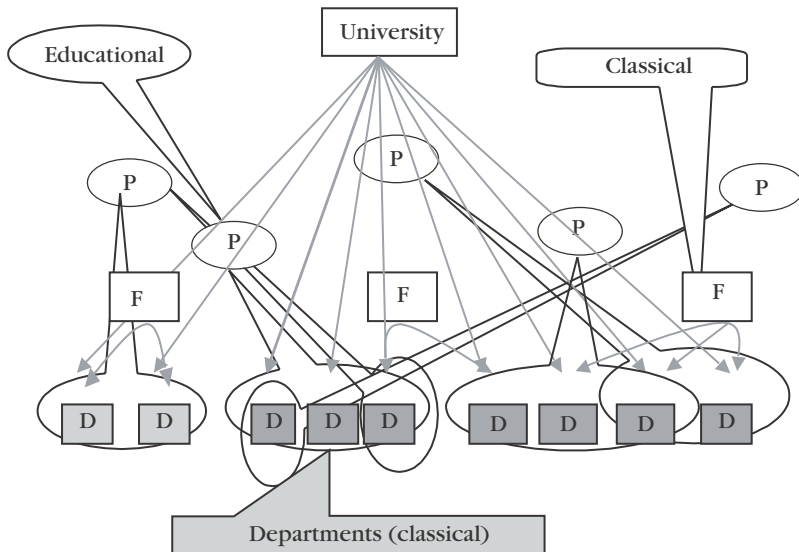


The need for mass retraining of people with different levels of education and in a great number of new educational specialities has given birth to a large number of educational projects. For example, besides the normal five or six years' higher education programmes there are so-called accelerated higher education programmes for people who have already received higher or vocational education where their formal education may or may not be recognized as providing some remission. All this demands different curricula and different periods of education (two, three or four years). Thus, if we take only one speciality, accounting as an example, five or even more programmes can be organized. The existence of each project depends on the demand and competitive pressure. Moreover, the programme can be closed if the demand is insufficient to make it profitable. The programme management must also be organized in such a way that if the programme is closed, staff are not dismissed. This is the essence of the university project-driven organization. As is shown in *Figure 2.4*, the project leaders come from the classical faculties and work on a part-time basis with the status as project faculty deputy deans. Some of them head several projects. At the same time, there is a full-time management staff that serves the needs of all the projects and is responsible for the administration of students and teachers, IT services, financial management, and so on.

This project-driven faculty organization has demonstrated very high efficiency allowing the whole university to be responsive and flexible. At the same time, it is understood that this is not an alternative to the classical university structure but simply a catalyst that encourages a considerable improvement in university staff performance. To respond to new consumers the university structure has to combine the dynamic (project-oriented) and the static (classical vertical organization) elements. The illustration is given in *Figure 2.6*. The role of the dynamic element increases at the time of change.

Eventually some projects may be later converted into classical departments or even faculties. Nevertheless, the 'project spirit' has to become an integral part of an educational institution if it is to respond to the international higher education market challenges.

**Figure 2.6 Management of project faculty**



## Conclusion

A project-oriented approach to university management is a new tool of university strategy implementation. This is a liberal tool, which allows active university staff to be involved in additional creative work regardless of the classical university departments they work for. It leads to a general improvement in university productivity. The project-oriented university is a specific form of entrepreneurial university. It is based on the intra-university networking and establishment of inter-departmental links inside the university. Certainly, a project-oriented



organization implies a new financial approach to university management; retraining university managers becomes a vital task.

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### 3. University strategies in forming the educational market (using material from the Tomsk region)

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From January 2001 to April 2002, the Department of Sociology of Tomsk State University conducted research on developing a university market for paid educational services in the Tomsk region. The research was supported by the European University (St. Petersburg) and the Spencer Foundation (Chicago). The main emphasis of the research was on the sector of the educational market connected with universities.

The research focused on the users and subjects of educational policy. The motivations of the first were studied through a

questionnaire and a partly structured interview. The respondents were those pursuing first degrees on a tuition fee basis, those pursuing a second degree, as well as prospective students/high school graduates. The second group was examined by the expert survey method. The subjects of the educational process at various levels were heads of centres and branches, vice-rectors of universities, deans and deputy deans of different faculties, heads of administrative bodies in higher education, professors, etc. In addition, the data from several surveys of the educational system of the region on different subjects over the previous five years were used: the state and prospects for the educational market, value and strategic lifestyle patterns of young people, 'channels' and 'filters' for rural and urban high school graduates entering the university, the information environment in the high school, etc. Three universities were examined: Tomsk State University (TSU), Tomsk Polytechnic University (TPU) and Tomsk State Pedagogical University (TSPU). At present these universities are the most active in developing additional fee-based tuition both in and outside the Tomsk region. Also, the first two are the oldest institutions in the region and enjoy the status of being part of the cultural heritage of Russia. All three institutions embrace not only normal university, but also pre- and post-university education.

At the same time, such a selection of universities offered diversity. Thus, TSU is a classical university providing a range of social science and humanities disciplines, on the one hand, and natural and exact sciences, on the other. A polytechnic university, as can be seen from its name, is a technically oriented institution that mainly teaches natural, exact and engineering subjects. Lately, TPU has been actively expanding into the domain of the social sciences and humanities and, as many experts believe, is the most dynamic university in Tomsk, including in the development of additional educational services. TSPU is an institution with a narrow specialization primarily oriented

towards training teachers, for the Tomsk region. At the same time, its progress in developing non-governmental (additional) fee-based education is one of the greatest. Moreover, specialities that are actively developed in TSPU do not always correspond to its formal status as a pedagogical university.

### **Tomsk State University**

As mentioned above, TSU is a classical university. Over the last years TSU has experienced a stable growth in the number of full- and part-time students as a result of the introduction in 1999 of new academic programmes leading to the second degree. These programmes are taught in the evening as the most convenient time for those students in work.

A total of 6,993 tuition-paying students were enrolled at the university in 1999, which is 39.6 per cent of the entire student body. If compared with 1998 the share of tuition-paying students has increased by 9.6 per cent or 2,545 students. The share of evening students increased by 20 per cent and full-time students by 6 per cent. The total increase in the number of students on government quotas receiving free education was 11 per cent as compared with a 26 per cent increase in tuition-paying students. This was also true for 2000 and 2001. For example there were 9,662 fee-paying students, 3,817 of them full-time at TSU in 2000 and 11,021 fee-paying students, 4,148 of them full-time in 2001.

Other areas of educational services also developed in TSU. Thus, in 1997 the Department of New Information Technologies (now the Institute of Distance Education) was set up. Distance education emerged as a way of counteracting the lack of governmental funding and in order to expand the university's educational market inside and outside the country. Thus, it has created over 60 multimedia courses and other interactive educational programmes in various TSU specialities as well as in pre-university training

and additional academic programmes. It also co-ordinates the efforts of those university units that use the distance form of learning. Today about 500 people are being taught in this way.

### **Tomsk State Pedagogical University**

This institution has several peculiarities. First, this university has a narrow specialization – it trains teachers, which formally should limit its opportunities from teaching specialties that are more popular with local residents, that is, economics and law. However, these disciplines are taught at TSPU and to such an extent that the numbers are greater than those taught at TSU. Thus, in the academic year 1999/2000 at TSPU there were 4,278 students receiving scholarships from the government and 2,354 fee-paying economics students (compared with 740 fee-paying students in the same field at TSU).

The second characteristic of this university is the very large share of its students who come from the Tomsk region, including those on special enrolment and privilege programmes. This reflects, first of all, TSPU's traditional orientation towards the training of teachers for the needs of the region. This peculiarity, on the one hand, gives it a reliable niche in the educational market, although on the other hand, for several years it has been the reason for the university's comparatively low prestige in Tomsk. This was manifest when TSPU was organizing its fee-based education when it had to 'dump prices' and look for low-cost ways of increasing the attractiveness of its services to customers. One such way is the unique practice for the Tomsk region of combining several specialties in a single degree, which, according to the university's management, will provide better chances for graduates in the labour market.

A third feature of TSPU is that lately there have been a very large number of fee-paying students not only at the main departments but at off-campus units, in educational centres. Consequently, many of

these units are engaged in fee-based activities. By the end of 2001 the total number of full-time students at TSPU on governmental scholarships was 4,198 with 1,056 additional students paying fees; 1,421 of the former were studying part-time and 283 of the latter. Many students were enrolled at fee-charging off campus educational centres especially those majoring in economics where they outnumbered all the full-time students of all the TSPU departments. Thus, in October 2001, 4,722 people studied only at the Educational Centre for the Faculty of Management and Entrepreneurship, 833 studied at the Educational Centre for the Faculty of Economics and 88 at the Educational Centre entitled Ecotech.

### **Tomsk Polytechnic University**

According to many experts and in respect to the collected data, this university is the most active in developing additional educational services and diversifying them. Thus, although it was a technical institution in 1998-99, TPU started teaching the following social science and humanities subjects: social work, social-cultural services and tourism, management, linguistics and intercultural communication, the national economy, accounting and credit. In 2001 the university was licensed to train experts in crisis management and started teaching regional studies. One of the most interesting of TPU's innovations in developing educational services is the introduction of an extremely large-scale programme for improving language training. The programme was developed in 1998 and is to be completed by 2005. This programme requires 1,200 academic hours per year for a foreign language instead of the 340 stipulated by the state standard. In addition, the international certification of English, German and French is presupposed, with English and German certification already performed at present. It should be noted that over the five years TPU students take more hours of a foreign language than TSPU students majoring in foreign languages.

TPU's expansion in language training is not limited only to this programme. An educational and methodological centre *Kariera* ('careers') has been operating in TPU since 1997. It provides language training at all levels not only to students and staff members but also to external students who pay for their studies; about 320 TPU students study at the centre every day. Over the first year of the centre's operation the complete fee-based course was attended by 152 Tomsk residents not affiliated with TPU, 54 schoolchildren and 89 TPU students. Two new language centres were created within the framework of this programme in 2001. At present there are 10 similar centres at the university. For the first time TPU students were tested by the Cambridge Examination Board. The implementation of the language programme also includes creating and developing the educational and methodological basis of language study. Thus, 30 manuals and 23 copybooks in English were developed in 2001. Language training at TPU is also carried out by Russian-American, Russian-German and Russian-French centres.

The purpose of these active efforts in developing social science and humanities education and, particularly, language training is not only an attempt to compensate for the lack of governmental funding but also an endeavour to project the presence and competitiveness of the university and its academic programmes at the international level. Undoubtedly, there is a financial motivation but at the present some stages of the programme are loss making. That is why, on the whole, it should be regarded as a strategic investment.

In addition the structure and dynamics of developing additional educational services at TPU include a whole range of other elements. Thus, the Centre for Distance Education was created in 1997 on the basis of two part-time faculties that were renamed the Institute of Distance Education in 2000. In 1999 3,500 students studied at the Centre in 23 specialties and five directions, including public relations,

management, management in the social sphere, social work, economics, and commerce. Two branches of the university in neighbouring towns also provide tuition-based services.

In all three university cases the development of paid educational services and other innovative forms is a large-scale process that has significantly changed their image in the region. This transformation needs to be described and analyzed. The analysis of forming, functioning and developing the educational market has not been an elementary response of supply for an emerging demand. We can point out two drivers for developing university policy. The first is the release of personnel. Back in the late 1980s and early 1990s a special type of innovator emerged who has played a large part in actively forming the educational market. These 'freelancers' have done a great deal of work out of sheer enthusiasm. Their innovations have been performed in two directions:

- organization (introducing new units, licensing emerging academic programmes, organizing forms of market exploration);
- curriculum content (undertaking a radical review of course offerings).

To some degree these individuals have been acting either separately from or in defiance of the officially functioning university structures.

The second driver has been the need for universities to survive the problems they faced in the early 1990s. The absence of governmental funding for all aspects of teaching and research, except professors' salaries and students' allowances, preconditioned their market orientation towards setting up branch campuses and identifying fee-paying programmes and towards charging an extra fee for a second try to pass exams. Over a short period of time the

number of new specialties and faculties grew rapidly (sometimes it even doubled), while income from commercial services has grown to make up more than a third of a university budget.

By and large the educational market has adopted more or less stable forms and system features. Almost all 'free' structures have moved under the auspices of the state universities starting a range of specialties, educational centres and faculties in the universities under their supervision. There is a general understanding of market segments. For absolutely all institutions fee-based services have become an inalienable and natural part of their activity. At the same time universities' actions and motivations vary significantly. The stimulus for additional fee-paying education can be described as motivation and justification.

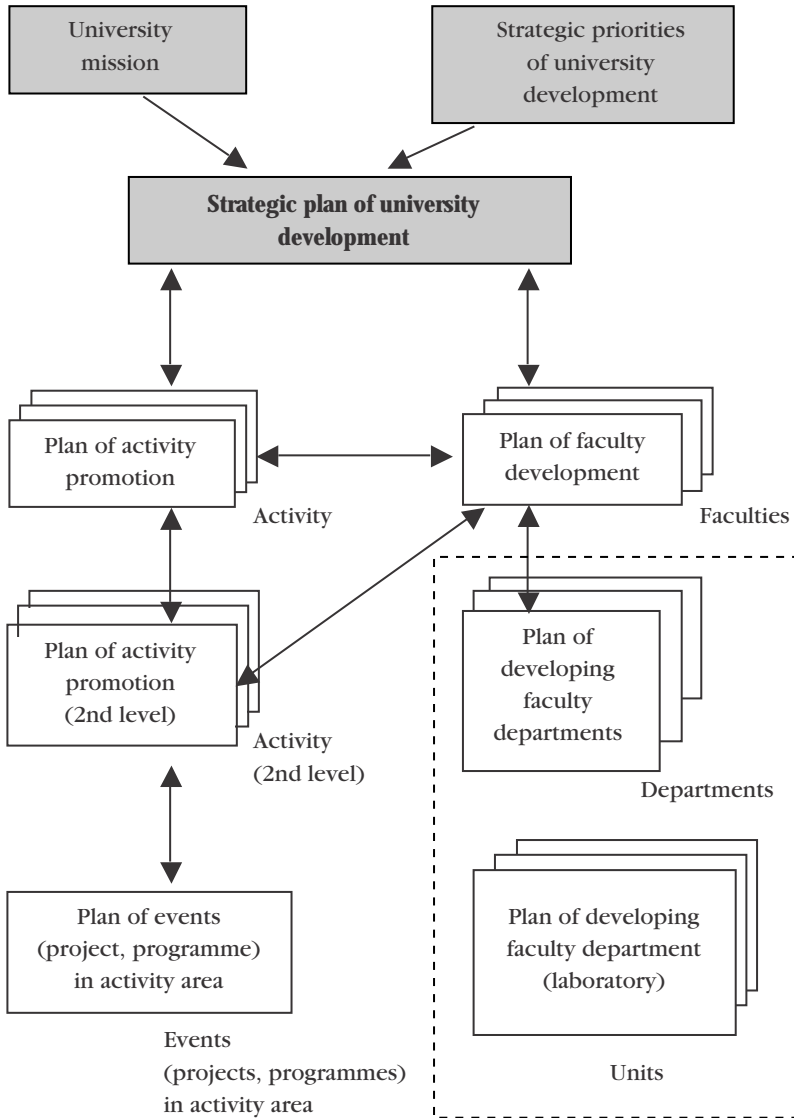
#### **4. Managing the development of a technical university**

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The present-day education market is changing as a result of the development and improvement of teaching methods, macroeconomic changes and the new geopolitical situation. External changes call for new approaches in university management and, more importantly, defining strategic ways of developing and using innovative principles in managing the university complex. The strategic goal for the activities of Saint Petersburg State Electrotechnical University (SPSEU) is to develop the university as one of the leading technical universities in the area of complex electrical engineering and electronics in Russia and worldwide. This goal can be transformed into strategic priorities for implementation throughout the university through a system of plans for developing departments and complex areas of activity (*Figure 2.7*).



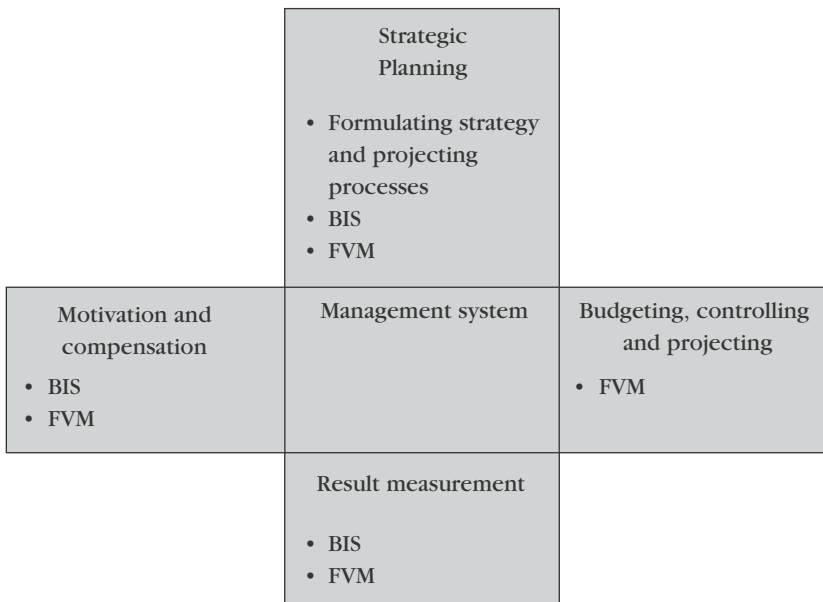
**Figure 2.7 Strategic development planning in the university**



## Resource management

Implementing strategic priorities is impossible without creating and implementing a system of resource management and utilization. Resource management is carried out according to a model described in *Figure 2.8*.

**Figure 2.8 Resource management model**



FVM - functional-value management  
 BIS - balanced indicators system

One of the control mechanisms over the use of resources is the measurement of the performance of the operating units. Indicators characterizing departments' activities are divided into clusters according to the type of resource used: finance, rooms, facilities, staff resources. Each group establishes fixed indicators (in relation to the resource used) for evaluating the activities of a department. Mechanisms for increasing efficiency in the use of resources are fixed

in the following normative documents: regulations for labour remuneration, distribution of additional incomes generated from tuition fees, the definition and use of overheads, the rent of the university's capital assets, the method of distributing funds for conducting research on a 'common order' (basic government funding), the method of providing Internet services at the university, and some others.

### **Educational quality management**

A stable position in the present-day educational market can only be achieved by organizations offering high quality services based on the new consumer-oriented approach. Introducing ISO 9000 standards at companies and institutions is an extremely complicated task requiring fundamentally new approaches to the organization of the entire process of production which demands a qualitatively new generation of experts: engineer-managers in the area of quality management.

Lately SPSEU has been conducting a variety of exercises in the area of quality management, and a Centre for Quality Management in Education has been created. A system of educational quality management involves managing the quality of educational and methodological provision in the following subsystems:

- managing the quality of curricula;
- providing education with informational and methodological materials;
- managing the quality of logistical support for education;
- managing the quality of teaching staff.

A system of quality management will only function well if it is driven by qualified personnel. SPSEU is the only centre in north-western Russia that has been granted a license to train experts and

confer qualifications in accordance with the requirements of the European Organization for Quality. Between 1996 and 2001 about 500 people from over 100 enterprises in St. Petersburg and north-western Russia have developed their skills at SPSEU.

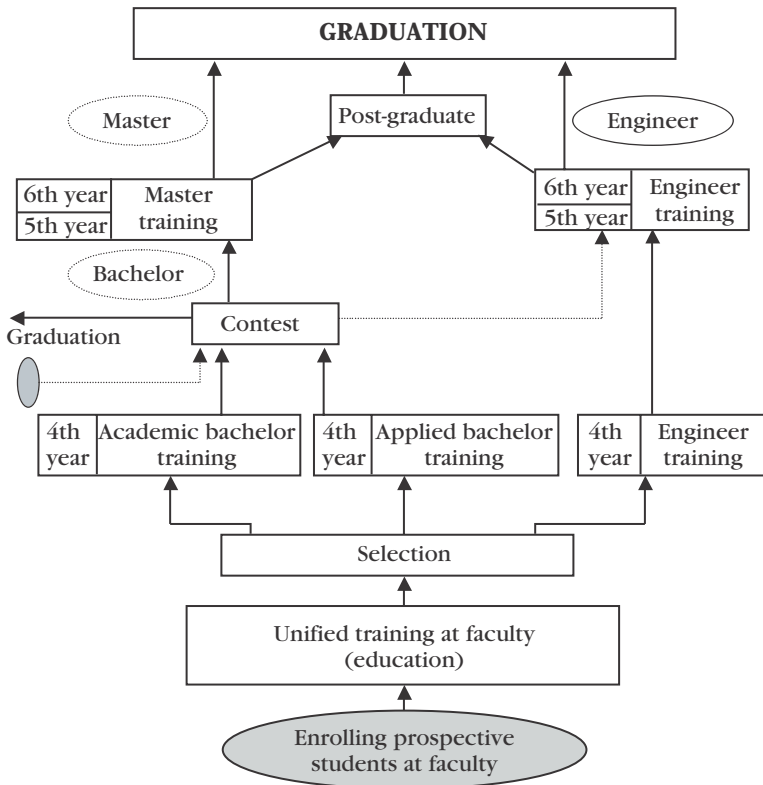
Marketing research on the needs for quality managers in industrial enterprises in St. Petersburg shows a constant increase in demand. The state educational standard of higher professional education in the area of 'quality management' was approved in 2000, and SPSEU organized expert training in this new speciality for Russia for the qualification 'engineer-manager'. In order to implement this academic programme a Department of Quality Management and Systems was established in 2000 in the Faculty of Economics and Management. At present the department has nine staff members, including a full professor, a doctor of technical science, and six associate professors. Two professors have the 'Quality Auditor' certificate from the European Organization for Quality. The programme on 'Quality Management' has attracted in the last three enrolments an average of 10 applicants for each tuition-free place. It is also popular with fee-paying students, and 17 international students have majored in the programme. Numerous offers to provide internship places for students indicates a substantial interest amongst companies and other organizations in the city in the subject. It is planned to start training in a bachelor-master degree system in this area.

Improving the system of multi-level training of experts with higher professional education in engineering and technology

Analysis of the emerging multi-level system of expert training preconditioned the need to form a new, more efficient and more systematically organized expert training structure. This model (*Figure 2.9*) presupposes the introduction of a common bachelor training and basic technical education for four years for all students

in this specialty, which will be the basis for an engineering or masters programme. The first level graduate is awarded the qualification 'bachelor' (or, since the applied component is supposed to reduce to four years - 'bachelor-engineer'), while the person who graduates from the next level is granted the qualification 'certified engineer' or 'master'.

**Figure 2.9 Multi-level training in higher professional education in engineering and technology**



Attracting resources from employers (transfer or access to facilities, involvement of specialists, etc.) for the specific professional training of certified experts or masters will increase the quality and actual funding of education and, as a result, provide for the extension of training of up to one and a half or two years. This would also satisfy the need for an elite formation of engineers requiring five or five to six years training.

## **5. University strategy in regional development**

*Evgeni Kniazev, Kazan State University*

The impact of higher education is distributed in Russia very unevenly. There are powerful groupings of institutions in Moscow and St. Petersburg with literally dozens of colleges in these areas. Historically, the developed systems of institutions of higher learning have been formed in the South of Russia, the Middle Volga, the Urals and West Siberia which all boast numerous respected higher education institutions. At the same time, there are many remote regions in Russia where people are deprived of the opportunity of continuing their education or are extremely limited in their choices. If we take Russian distances and the ever growing cost of living into account, this becomes almost an insurmountable obstacle in the pursuit of knowledge for some young people.

The Russian universities themselves are exceedingly diverse. Alongside Moscow and St. Petersburg State Universities that can top any ranking there are a range of good classical 'middle-level' universities, including dozens of highly-specialized institutions (agricultural, technical and medical). Finally, there are also many poor provincial colleges, both financially and professionally. Extremely heterogeneous social, geographic, economic and political factors add to this picture and diversify the role that the universities are forced to play in their regions.

Familiarity with the experience of several Russian universities in regional development and a comparison of this experience with the similar practice of their international counterparts makes it possible to formulate the following conclusions:

- Russian universities tie their missions, in this or that degree, to the tasks, problems and prospects of the social, economic and cultural development of their regions.
- The role a university plays in its region is not so much a product of the academic achievements of this institution as it is the result of the social and economic development of the region, its competitiveness and total intellectual potential.
- The role a university plays in its region is subject to the prevalent political culture, traditions, ethnic diversity, level of public tolerance and openness.
- The role a university plays in its region is subject to the quality of the team that manages the university, its innovative creativity, its ability to establish contacts with officials, business and different social groups, as well as its ability to encourage, mobilize and organize the team.
- In order for the university's regional role to become significant and to match its potential, then knowledge and continuous study of the university and its environment is required. The university also requires the education, professional communication, careful and unbiased investigation of one's own and other people's experience. In other words, it needs frequent self-examination.

One of the most wide-spread approaches in implementing the regional role of universities today is the creation of so-called university-based complexes. Russia's Ministry of Education, proceeding from *The concept of scientific, technical and innovative policy in the education system of the Russian Federation for 2001-2005* and *The concept of updating Russian education until 2010* actively

encourages these processes. It considers the emerging unions as a means of integrating and optimizing regional systems of higher education. Today we can distinguish the following different but relatively stable organizations:

- the university complex is a university with an independent legal corporate identity, consisting of different academic, research, design, manufacture and other units;
- the university complex is a union of different academic, research, design, innovative and other units as well as various organizations that remain independent and form an association or a union with the rights of a legal corporate body;
- the university complex is a university educational district without an independent legal corporate existence but operating as a union of educational institutions and organizations, regardless of their ownership, that implements educational programmes at different levels.

The forms can be different, but in each case universities are natural centres of these organizations irrespective of the chosen form. Different regions have managed to involve the most diverse bodies in these organizations: secondary and secondary vocational schools, institutes under the Academy of Science, specialized research institutes, design companies and businesses. The diversity and the regional forms of these integration processes, stimulated by the government reflect, on the one hand, the regional peculiarities and even uniqueness of the university environment and, on the other hand, the specificity of the regional role of the university at the centre of a regional system of higher education. Let us consider the most wide-spread roles of universities in the regional processes and accompany them with relevant cases.



The university is the organizational and methodological foundation of the integration and optimization of the regional system of education

The educational district under Mordva State University was first created in 1993. Today it unites over 100 academic, research and other organizations, including all the institutions of higher education and secondary vocational schools. The educational district plays a significant role in developing the regional system of education and does research on the integration of educational institutions. One of the most notable examples is the Yaroslav Mudrii University in Velikii Novgorod which was born out of a union of academic institutions and has become a dynamically developing university. Another example is the university complex established on the basis of Voronezh State University. In prospect this is intended to involve about 100 secondary schools, secondary vocational schools in the Voronezh region and neighbouring areas. Thus, the university strives to train interested students and make expert training continuous and through all the stages of education – pre-university, university and post-graduate.

### **The university is the foundation of a regional system of continuing education**

The years of reform have set back, if not destroyed, industry in many branches of the economy. There are no regional exceptions to this. These changes have also killed the previous system of expert training and retraining. The restoration of the economy, technical and technological re-equipment, the globalization of markets and competition have set a task for society to create a system of continuous life-long learning. The following are examples of how Russian universities are addressing this issue:

Moscow Physical Technical University and St. Petersburg Electrotechnical University have created educational centres of well-

known international companies at their campuses. Learning new technologies and methods of teaching from them, colleges can disseminate the experience, approaches, and resources for retraining in their regions.

Kazan State Technical University closely co-operates with the Russian aircraft industry and has followed a path of organizing branches of its departments at various enterprises. There are two clear advantages to this scenario: they offer a place for students' internship and opportunities to organize training courses for the company's staff right at the enterprise.

Striving to respond more efficiently to the needs of the enterprises in the region in personnel training and retraining Voronezh University started developing new educational structures – academic-research-industrial complexes. Joint research, education and proficiency improvement for the staff of the partner enterprises are set up in this more flexible system. The university has created a group of similar structures: complex 'Farmacia' together with a group of pharmaceutical enterprises from Voronezh and Moscow, a drugstore network, rocket-space research together with a large rocket design office, etc.

### **The university is an important factor in economic stabilization**

In many regions universities are initiators of co-operation with academic and specialized scientific and industrial enterprises. Universities contribute to stabilizing the economy by uniting intellectual efforts for the solution of urgent technical and technological problems and participating in developing a region's research policy. Good experience of such co-operation has been gained by the universities of Nizhnii Novgorod, Yekaterinburg,

Novosibirsk, Tomsk and Krasnoyarsk. In Nizhnii Novgorod, a well-known centre of the Russian car industry, it was the initiative of academic scientists, supported by some major enterprises, that promoted the design and launch of an efficient, highly technological programme of power machine-building for the nuclear power industry. Factories were set into operation, orders started coming in, the industry was renewed and that branch of economy was regenerated. Tomsk State University has several major academic centres that offer paid education to companies and individuals in the region, for example through a business school with six faculties. The university also has several research centres such as the Centre for Computer Technologies and the Centre for Technological Management and a model shop for hi-tech products from the university. These activities are oriented towards the technical and technological re-equipment and economic regeneration of industry in the area. Orel State Technical University created a complex for education, research and manufacture which included several major industries which the university either owns or has a controlling interest in. The companies develop facilities for testing innovations and inventions; the number of competitive products has grown by 50 items and more inventions have been patented; over the last three years the number of publications in Russian and international journals has increased tenfold.

### **The university is the initiator of computerization and 'Internetization' of regions**

The rapid development of Internet and new information technologies which have stimulated the development of the economy, science and education in the industrially developed countries coincided with the dramatic social and economic changes in the former Soviet Union. In these conditions universities, supported by international charitable organizations, have been a driving force in

the development of the Internet in Russia and bringing the public to the new information technologies. Thirty three Internet centres under leading regional universities have been playing an important role. In many Russian regions universities have become a source of innovative approaches to the organization of the work of libraries integrating different elements of resources based on the new telecommunications facilities and involving education and administration. Some interesting projects are being implemented at the Tomsk and Urals State Universities and the University of the Southern Urals. The Institute of Distance Education was started at Tomsk University, and a new supercomputer has enabled this institution to progress even further in computerizing various areas of its activities and extending information services to the public. The growing number of works devoted to the Internet at Kazan State University has contributed to the introduction of new information technologies to the daily activities of organizations of culture and government as well as to schools through creating a regional segment of the civil network in the Middle Volga area.

### **The university is the real force of 'humanitarizing' the social life of the regions**

New social-economic and political characteristics have required universities to mobilize internal resources and concentrate efforts to develop research and educational programmes in areas that had not been in demand before. A knowledge of economics and law, training in the areas connected with the social sciences and the interaction of the individual with nature and the environment and with culture liberated from ideology have become exceedingly important for the reform and successful development of society. Inner political processes and inter-ethnic relations have started to play a very important role in reforming the Federation, with an intensified need for their study and understanding. It has turned out

that many characteristics of Russian society are not properly developed to meet the new conditions. It is hard to overestimate the role Russian universities play in this respect. Two examples are Kazan and Nizhnii Novgorod State Universities.

Kazan State University is located in the capital of the Tatarstan Republic. The Tatars are the second largest ethnic group in Russia. The movement for national and cultural revival, with some elements of nationalism and separatism at first, has required serious analysis. The university community – historians, linguists, lawyers, demographers, ethnographers, sociologists and many others – found themselves involved in solving these serious questions and can offer a rational and constructive contribution. This offers a civilized approach to the problem of the two languages, and a balanced approach towards Russia's federative structure and regional autonomy. We see this as one of the reasons why the region can maintain stability, though in some other parts in Russia we can see other scenarios coming to pass. Nizhnii Novgorod State University in the 1990s made a true 'humanities breakthrough', creating over 20 new departments, which provided for the demand for humanities education in the region, including from fee-paying students.

### **The university is the initiator of international co-operation for regions and a catalyst for openness**

Beginning in the early 1990s international co-operation has become for universities not only a source of income but also a key instrument in the development of new activities, academic programmes, and a criterion and landmark for future development. Thousands of young and venerable professors, researchers and administrators as well as thousands of university graduates have disseminated the culture of international co-operation, science and

education without borders, labour markets without borders, etc., in our society.

In several universities such as Kazan, Rostov, Voronezh, and Novosibirsk, regional centres for international co-operation have been set up that, in turn, have helped other institutions of higher learning in their regions to become affiliated to international programmes. Thus, the Regional Centre for International Cooperation created and supported by Kazan University provides its services to over 3,000 students, professors and researchers per year. Over 60 per cent of these people are in no way connected with the university.

Present-day students can hardly admit to the idea that the society can become closed and isolated. Every year we can see the growing interest in academic exchanges, projects, contests and programmes. Even in remote areas of Russia people are becoming used to listening to the lectures of international professors, to training international students and attending international conferences. Today Russians, and young people first of all, feel as if they are an integral and responsible part of a mutually-dependent world. This is another role the universities are playing in their regions.

The managerial practice of Russian universities is extremely rich and diverse. However, in Russia we lack opportunities for disputes that determine the truth, for checking views and concepts, and simply for the exchange of ideas, opinions and information. We would like to believe that the ever-growing involvement of academic and administrative experts in various projects on improving university management are the necessary steps for practising the new culture of management in education, enriching and improving the managerial practice. In this respect the internationalization of public life in the regions is a powerful catalyst of development for the universities.

## **6. Learning about strategic management from a concrete case of decision-making**

*Karel Tavernier*, European Centre of Strategic Management for Universities

### **A changed university environment**

This paper does not intend to give a well-structured and extensive exposition on strategic management in universities. Instead it will discuss a concrete and successful case of strategic decision-making. In doing so, it is hoped that it will show that, whatever their political and socio-economic environment, universities need to start learning from industry about how to organize their management and especially their strategic management.

Universities must realize that the old days are gone and will never return. They live in a completely different world with different requirements. A first predominant observation is that, everywhere in the world, governments are increasingly unable to pay the full cost of higher education: In relation to other priorities, modern universities have indeed become too expensive to fund with public money. Moreover, governments are not only unable but also unwilling to do so because in the knowledge society of today, a broad range of university products carry considerable benefits for those who have acquired them: Who profits from them should pay at least part of the cost. As a consequence, universities have become hybrid institutions: semi-public and semi-private. At least for part of their activities they are forced to operate in a globalized market with powerful new competitors sometimes coming from the most unexpected corners: multinationals turning their internal training centres into accredited corporate universities are good examples of this trend.

In the second place, universities face the challenge of a real knowledge explosion. Today, knowledge is simply too vast to master: for teaching it means the urgent switch from *ex cathedra* teaching to learning and from knowledge accumulation to acquiring skills in the handling of information. More important, it also means that no single university, be it Harvard or Moscow, is big enough to do everything alone. They either ought to be selective in what to do or enter into mergers or engage in networking. The merger movement is especially clear in the non-university sector of smaller polytechnic colleges; the networking solution is more common in universities. Third, because knowledge has become so important for society, the stakeholders – governments, business and individuals – view what universities do and how they do it with a critical eye. The stakeholders require accountability not only about the use of their resources, but also about the quality and societal relevance of their activities.

### **The case of the Inter-University Micro Electronics Centre (IMEC)**

The case that is put forward in this paper is a story of K.U. Leuven. This institution is an old internationally oriented research university in Belgium. It has a student enrolment of 26,000 and a staff of 6,300 full-time equivalents (FTE), a medical faculty and an engineering school; in European publications and the citation index it ranks about 10th to 15th out of more than 400 universities; it has realized more than 50 company spin offs in recent years.

The story starts in the mid-1980s. K.U. Leuven was extremely proud of the excellence of its micro-electronics department: It was highly rated in scientific circles and was popular with the Belgian high-tech industry. However, for the department head, it had become clear that the resources at his disposal were insufficient by far for his 120 top researchers to work on at an international level. He would



have to abandon scientific competition in his field of study if in one way or another he could not come up with investment funding for a new laboratory of about 60 million euros and a yearly budget of 30 million euros. The university was simply not able to come close to those astronomically high figures: They indeed amounted to one sixth of the total university subsidy. The threat of losing an important centre of excellence led to a strategic brainstorming exercise within the rectorate. It resulted in the following plan that afterwards proved to be a brilliant initiative.

Among the Flemish universities, only K.U. Leuven had developed its micro-electronics to top international level. With this idea in mind, the other universities of Ghent, Antwerp and Brussels were approached and invited to join forces in a new inter-university microelectronic laboratory. It was argued that this would allow them to upgrade their own theoretical and practical know-how in microelectronics to an international level in one single quantum leap. The further attractive feature of the proposal was that each participating university would link up with their neighbouring polytechnic colleges, which in turn could link up with the local industry of their region. The whole construction would then constitute an extensive network, which would be extremely beneficial, not only for scientific research, but also for its value in industrial ventures. The only, but important, condition imposed by K.U. Leuven was that the central laboratory with its sophisticated clean rooms and infrastructure should be on its engineering campus and that the director general should be from K.U. Leuven.

With this strategic concept, we went to the regional government which at that time intended to launch the so called 'third industrial revolution for economic revival'. The negotiation resulted in a deal that the government would take over 60 per cent of the yearly budget.

The remaining 40 per cent should come from contract research, royalties, spin-offs and training activities.

For K.U. Leuven such a move meant giving up a major comparative advantage and even the ownership of one of its most successful laboratories. This, however, was more than compensated for by a new funding source and by an enormous extension of its action radius. Moreover, it was decided to keep the old laboratory, albeit on a reduced scale and with a completely different focus from that of the new Inter-university Micro Electronics Centre (IMEC). Indeed it did not seem wise to put all its microelectronic eggs into the same basket. In 1984 IMEC started with a budget of 62 million euros. In 2002 it has grown to 137 million euros. It now employs 1,200 people and has realized 20 industrial spin-offs. The government subsidy has fallen from 60 per cent to 24 per cent. An extensive multidisciplinary collaboration with other laboratories of the engineering faculty has been very rewarding even beyond the field of micro-electronics.

This practical example teaches us several lessons about strategic management for universities:

- the astonishing power of networking;
- the importance of a widely shared mission statement, firmly embedded in the attitudes and culture of the university;
- the importance for a university to delegate initiative and a large part of decision-making to the lower levels in the hierarchy;
- the need to combine this delegation with a stronger steering core of a certain type;
- the importance of choosing the most appropriate model or framework for strategic management among the many that exist in the recent literature.

The following comments should be made:

1. The importance of an explicit mission

Most universities in Western Europe now have an explicit mission statement. However, not many have succeeded in going beyond a public relations document mainly intended for marketing purposes. In order to be useful, a mission statement should represent a widely shared and clear view of what the university aims at and knows it will pursue. According to K.U. Leuven's mission statement, it aspires to be an international research university where fundamental research and scholarly publications prevail in the tasks of academic staff. At the same time, however, this predominant objective should go hand in hand with actively seeking out relevant market opportunities from the same research. This application-orientated attitude aims to contribute to the economic and cultural benefit of the Flemish region. That also is explicit in the mission statement. The IMEC initiative fitted this mission statement: It provided safe guidance for decision-makers. They knew perfectly well what course of action they could follow. They were pretty sure that afterwards they would not be called back by one accidental majority in one or other council or by one or other lobbying group of deans and professors which happened to be thinking it was not such a good idea after all. The mission statement of an university is like the constitution. As such it is also an important precondition for decentralized decision-making. If everyone really understands the mission, then leadership can be of the 'flag flying' type instead of top-down command: 'that is the way to go, but how you will do it, is pretty much your business'.

2. The importance of delegation for universities

In the second place, the IMEC-story illustrates the crucial importance of delegating initiative and also a large part of the decision-making to lower levels in the university hierarchy. According to

organizational theory, universities are to be classified as 'professional organizations'. In such organizations, the expertise is not to be found at the rectorate or in a far away government agency, but with the scientists in their labs and teaching halls. If the expertise is there, so should be a large part of the decision-making power. If it is, the innovative capacity of the institution can be enormously broadened and actively mobilized.

### 3. The power of networking and strategic alliances

In the third place, the IMEC example shows that by setting up a network with other universities, polytechnic colleges and industrial firms, the boundaries of what is possible can be shifted in dramatic ways. Suddenly we were able to work in a different world with new partners previously unthought of and with research contracts of a completely different size. Hence, one should realize that in these modern times, any single university, even Harvard or Moscow, is too small to do everything alone. It requires either selectively cutting down or networking.

When one looks at higher education in Western Europe today, networking is probably the dominant new feature in the organization of universities and in their way of working. Therefore, reference is made here to a few other examples:

- Research funding by the EU is only available when a project is submitted by a consortium of different universities in different countries and very often with the participation of an industrial partner.
- K.U. Leuven has just recently set up a far-reaching association with 11 polytechnics, the objectives being: economies of scale, mobilization of new talent for research and, of course, an increase in political lobbying power.

- A research network has been created for top European research universities with the secretariat at Leuven: members are Cambridge, Oxford, Helsinki, Heidelberg, Leiden, Leuven and a few more. This should be related to the thesis of a widening hierarchy of universities in Europe.
- ESMU, the European Centre for Strategic Management for Universities, is another example. ESMU is a rather influential organization with the objective of transferring management know-how to university leaders. Its core staff is very limited, but its reach is extremely broad, because ESMU makes full use of networking. It now has three permanent networks: (a) the Deans' network, (b) the Heads' of Administration network, and (c) the Benchmarking network. Through these networks it can tap into the extensive knowledge and know-how of a large number of European universities.

ESMU is also at the origin of the so called ETAPE-consortium set up together with the Academic Cooperation Association (ACA). The European Consortium for Technical Assistance for Programmes in Education (ETAPE) has won the EU tender for the administration of the European ERASMUS-SOCRATES programme for the exchange of students and teachers all over Europe.

#### 4. A stronger steering core

Fourth is to be added the need for a somewhat stronger steering core. This, however, should be of the flag-flying type, leaving much room for decentralized initiative.

#### 5. The importance of an appropriate model of strategic management

In the fifth place, the IMEC story suggests the crucial importance of choosing from the existing models of strategic management the

one that is most appropriate for a given university in a given environment.

### **The framework for strategic management**

To a large extent the popularity of strategic management is due to the straightforwardness and even common sense and simplicity of its approach to decision-making. It starts from three questions: Do you know where you are? Do you know where you are going? Do you know how to get there? In answering these questions, traditionally a sequence of essential steps is discerned:

- scanning the environment in a systematic way. An internal audit should reveal strengths and weaknesses in the organization and an external audit should focus on the identification of opportunities and threats (SWOT);
- the formulation of a mission statement. Based on a thorough understanding of its socio-economic technological and political environment, an achievable mission statement should be prepared. This mission statement should explain: what the organization does, what it intends to accomplish and what values ought to steer its behaviour. Especially when it is clarified in separate policy statements for each field of activity, a mission which is widely shared throughout the whole institution, is a powerful tool for coherent decision-making. It is the precondition for decentralization and makes top-down command unnecessary;
- the formulation of concrete objectives;
- organizational adaptations and a mission driven budget allocation;
- evaluation of performance and feedback.

In the course of years, this basic framework for strategic decision making has been enriched and diversified into different schools of thought. This has happened not least by taking into consideration the lessons of organization theory about the sectoral differences in

behaviour and desired structures. For instance, the mass production industry might require a different approach to the higher education sector. But even within higher education, one university can prefer to use a different model to another, depending on its size, the complexity of its offerings, or its traditions. The most important message is that it is coherent and goal-oriented. A short account of three different schools of thought is given below together with the outline of the strategy of a particular university that applies it: The planning school is the basic pattern for the London School of Economics (LSE); the learning school is very present in the approach of the Copenhagen Business School (CBS) and K.U. Leuven; the entrepreneurial school is followed at the University of Twente in the Netherlands.

### **The planning school**

The planning school depends on a strong formalization of the basic framework of strategic management. Thinking is separated from doing and the central role of a plan subdivides the process into a sequence of steps. Each step is neatly delineated and documented by hard data and technical analysis. The general strategy is broken down into sub-strategies, each with a series of targets to be attained and a budget to make it possible. Strict control mechanisms are used to control whether the planning instructions are carried out as specified in the plan. Undoubtedly, in such an approach the danger exists that the top governance of the institution loses its impact in favour of an isolated bureaucracy of highly skilled technicians who enforce a rigid and inflexible 'official plan'. Very often, such a model also neglects the organizational climate and the cultural requirements necessary for an efficient implementation. In the early years of strategic management, the planning school was very useful in its insistence on the need to document decisions in real data, hard analysis, a coherent framework and clear objectives.

Despite its critics, it is still applied today and it works; a good example is the London School of Economics. Looking at LSE's strategic plan one is surprised by the concise formulation of its mission statement. It is a kind of mobilizing battle cry of no more than 36 words, namely: "To be a world class university centre of the social sciences in the heart of London". It clarifies what this means, but not in a very extensive way: International reputation requires academic diversity, a solid financial foundation and the creation of an excellent learning environment so as to attract the brightest staff and students. It explicitly aims at being the real guardian of the social sciences with a mission to lead the scientific debate in all areas of social sciences. This requires that LSE covers all social science subjects and that cross subsidization is sufficiently high to keep the less remunerative sub-disciplines working at an international level. "In the heart of London" refers to the regional responsibility, not least by creating chances for disadvantaged students in the London area.

Most impressive is the extreme detail of its goal setting with 29 strategic objectives, 85 sub-objectives and not less than 320 concrete targets. In an annual process the degree of attainment for each target is monitored and amended for the future. Moreover for each target, the required resources are explicitly specified. The review process is conducted through the interplay of the academic planning and resource committee, the planning team, the finance committee and, finally, the governing body. Taking into account LSE's immense success, this approach to strategic management apparently works well but it is an open question whether it is equally suited for more multi-disciplinary and complex comprehensive universities.

### **The learning school**

That is apparently the implicit position of the learning school. For the adherents of this school, the world is too complex for central



planning from an omniscient headquarters office. The learning school reminds us that, according to organization theory, universities are to be classified with the professional bureaucracies, so that decision-making has to be devolved as much as possible from the centre to the operational level of professors in their departments, their laboratories and their teaching rooms. A further starting point is its thesis that one should break out of the traditional boundaries of a playing field which is the product of a traditional SWOT analysis: It is important not only to play the game better but, also, to look for a different game, to try to change the rules of the game and even more important to look for a new one.

From these starting points, a model is developed that stresses the improvement within the institution of the so called *four competences of learning*, namely: the capacity to absorb new know-how, the capacity to diffuse knowledge throughout the institution and the capacity to generate new knowledge and to exploit it. Not only should these learning capacities be developed, but attention should also be given to a systematic effort to reduce learning blockages such as the refusal to learn from past experience and from one's own errors. Logically, such a school of thought prefers a more vague, a more general and a more ambitious 'vision statement' than the previous concept of a realistic and attainable mission. Stressing the need to decentralize, university governance should move to a kind of flag-flying leadership that inspires and encourages. It should be its duty to create an organizational climate that mobilizes all possible competences and innovative creativity wherever it occurs in the university.

Top management should explicitly create favourable conditions for risk taking and experimentation: special rector's funds, abolishing the hierarchical chair system, and especially competitive project funding are examples of such an approach. A networking strategy

fits equally well in this school of thought. The learning school corresponds to what is done at K.U. Leuven and is even explicitly mentioned by the Copenhagen Business School (CBS) as a dominant pillar of its strategy. CBS is a middle-sized university, with one faculty for social sciences and one for humanities. An interfaculty department constitutes the platform where both collaborate on intercultural communication and management.

CBS summarizes its mission as follows: CBS wants to make a major contribution to “the value creation market for Danish Business and Society”. It wants to train graduates for the international job market. Its research-based knowledge is realized in an intensive partnership with other organizations. Three strategic pillars sustain these objectives, namely: internationalization, partnership with business and, above all, its concept of the learning university. Internationalization implies that research and teaching at CBS are planned in an international context: its standards are international and so are its benchmarking partners. CBS strives to participate in as many international research and teaching consortia as possible and English is used as the language for a large number of its graduate programmes. Partnership with Danish business is concretized through jointly-conceived training programmes for business executives and by setting up Business Research Centres in different areas of interest. It wishes to be a ‘learning university’ along the lines described above. It is felt that the learning school with its extensive learning capacity and with its enormous mobilizing power is the right approach for a complex organization in times of change and turbulence.

### **ESMU, the power of networking as a tool**

In 1986 a group of European university leaders met with some counterparts from the Belgian ‘industry-university’ association. The intention was to learn about the way higher education in Europe

ought to face the challenges of the future. It was immediately clear that universities would lose their protected status as government agencies and very soon would be forced to operate much more like independent institutions with a far higher degree of institutional autonomy. In such a world business practices would become more relevant and in particular the strategic management approach should become a top priority. ESMU was born and its main activity was indeed geared to this theme of strategic decision-making in a university environment. From the very first beginning the focus was on the creation of a network of university leaders. Moreover, it was deemed important to work in small parallel groups in order to make contacts and exchanges more direct. In fact, this often came down to a loose form of benchmarking where best practice solutions were shared and copied. The mission of ESMU can be stated as follows: ESMU is a not-for-profit organization in the field of strategic management, established by and working for European university leaders. Its main knowledge base is the know-how and practical experience of university leaders ready to exchange and share with others.

Through seminars, workshops, site visits to other universities, study projects and training programmes, ESMU has become a most important player on the European scene, next to the rectors' conference, the Institutional Management for Higher Education programme (IMHE) and the European Association for Institutional Research (EAIR). Its wide experience and its active presence in many universities has resulted in several international project consortia. Through these EU contracts, ESMU's action radius was extended to East and Central Europe and even to Latin America and the C.I.S. countries in the former Soviet Republic. ESMU now works with three permanent networks: Dean, HUMANE and its benchmarking programme. The mission of 'Dean' is to offer a platform for university deans to co-operate and share experience on specific managerial

issues affecting deans. 'Dean' works through interdisciplinary conferences, position papers, direct mutual advice and an electronic communication channel.

ESMU-HUMANE is intended for university administrators. Its mission can be stated as: 'HUMANE is a European-wide network for heads of university administration'. It aims at professional development, the exchange of relevant management information and examples of good practice in university administration. Again, exclusive seminars, an electronic discussion list for its members and an extensive database for mutual contacts and co-operation, form the backbone of its activity. Recently a so called Winter School for future heads of university administration and the creation of the H.E.E. consulting group have been added to ESMU-HUMANE activities.

The ESMU-BENCHMARKING programme aims to provide universities with a self-improvement tool that allows them to compare themselves with others to identify respective strengths and weaknesses, to find, adapt and adopt the 'best practice' and, in that way, to learn how to improve their own management.



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### **3. UNIVERSITIES AND THE GENERATION OF NON-STATE INCOME**

#### **1. Overview: Institutional financing in Russian higher education**

*Nikolay Rudolfovich Toivonen, Petrozavodsk State University*

##### **The legal status of higher education institutions**

Higher education in Russia is under state control through a system of licensing, accreditation and state attestation of educational institutions and, depending on the institution ownership status, it can be either state-owned or delivered through private establishments. Legally, the founder of a state institution is the state represented by various ministries and state departments while private educational institutions can be founded by a physical or legal person. The founder's property rights are extended over all buildings and facilities of the institution at the time of its organization, and includes all the assets further obtained or generated by the employees of the institution while performing the duties defined by their employment contracts.

##### **State budget financing**

According to the corresponding laws the funding structure of state higher education in Russia gives the institutions the right to be financed from the state budget and to use their own independently generated financial resources to finance various forms of activities. This includes student instruction, scientific research, innovation, entrepreneurship and other forms of commercial activity as defined by the institution's Charter.

## □ Student instruction

Only state-owned institutions in Russia are funded by the state to provide student instruction. The level of funding is determined by the enrolment plan, which is a quota given to every state-owned institution by the corresponding ministry to limit yearly student enrolment at the institution. According to the Russian constitution all Russian citizens have the right to free university-level education, a rule that has remained unchanged since the time of the Soviet Union. Second and further university degrees must be funded privately. The so called 'budget places', the state budget financed student quota, is growing steadily from year to year. The state also funds retraining courses and postgraduate education for all school teachers and teachers in technical schools and higher education institutions employed in state-owned educational organizations.

At present Russia is testing a new mode of financing which is a shift from a student quota to a 'state contract' when state institutions will sign a contract with the state for training a certain number of students in particular fields; in this case private institutions might also obtain the right to state funding.

## □ Research

Practically all research programmes conducted by state-owned educational institutions are funded by the state budget on a competitive basis. There are some exceptions to this in some institutions, which have unique knowledge or experience in some particular field, and there is a need for specialized state funding; in these cases the state finances these research teams individually. Higher educational institutions with any form of ownership may take part in research project tender competitions included in the state scientific research programmes. There is one programme where only

state-owned higher-education institutions are eligible for financing. This is the so called 'comprehensive contract' programme. The programme presupposes pre-set state funding for particular research projects prioritized by the institution itself.

Research grants can be used both to purchase equipment and supplies, and as compensation to the institution's employees. The personal compensation expenses are taxed accordingly:

- universal social tax (35.8 per cent) paid by the institution (the beneficiary);
- personal income tax (13 per cent) paid by the individual being compensated for her/his contribution.

The purchase of equipment, supplies and other expenses are exempt from taxation.

All finance originating from the state is exempt from value added taxes (VAT). VAT is paid in any case when research project funding or grants are provided by private or public organizations and the research projects, mostly in applied science, result in a certain commercial product with originating property and consequent rights.

Practically all institutions direct some part of grant resources to an institution development fund in the form of overhead expenses. This varies from 10 per cent up to 30 per cent of the project budget.

### **Non-governmental financing**

Different forms and methods of fund raising are a common practice in higher education institutions. They include student instruction, research, innovation, business and any other profit-making activities as long as the latter comply with the institution's charter and by-laws. State and private higher education institutions



have the right to charge tuition fees to students to cover their expenses for tuition and administration. This is called 'commercial' or 'compensational' tuition. Students who are not charged for tuition, and whose education is financed by the state budget controlled by various levels of the governmental authorities, are commonly called 'budget students'; students of the other category are labelled 'commercial students'.

The number of students in private institutions is not limited. State educational institutions are allowed to accept only 20-30 per cent 'commercial students' in addition to their 'budget students'; the exact ratio depends on the major field: In law and economics it is 20 per cent, for technology and science it is 30 per cent. At the same time these restrictions are often violated and the number of 'commercial students' can be several times higher than the prescribed percentage.

Institutions commonly charge students for retraining and refreshment courses and distance education programmes; the funding source might originate from both physical and legal persons.

Research projects are financed by various international foreign and national programmes as well as by business organizations or from an institution's own internal resources.

During the past few years Russian higher education institutions have made substantial progress in diversifying their funding sources. In most cases, this is predefined by specific needs of the regional social and economic development, in which local higher education institutions have recently begun to play a more significant role. The most common means of fundraising are:

- participating in and further developing small- and medium-sized businesses;

- creating representative offices of international, foreign and national organizations in order to provide information and consulting services (see for example Petrozavodsk State University);
- sponsorship (see Tyumen Oil and Gas University);
- the creation of technological parks, business incubators, innovation centres (St. Petersburg State Technical University - 'LETT');
- office space rent;
- project grants.

### **The management and stimulation of non-governmental financing**

The rector, as the elected chief executive of the institution, supervises the institution's budgetary control. The specific expenditures, cash flow, transactions and accounting for both the state budget and non-governmental funding is performed and controlled by the institution's various divisions. The accounting office of the institution co-ordinates book-keeping and reports to the founders of the organization.

The exact procedure and control of fundraising and non-governmental financing is not strictly regulated and varies from institution to institution. There is generally a special university department for fundraising and non-governmental financing. To stimulate staff and faculty to take an active part in fundraising and commercial activities, institutions commonly make use of the following means:

- an institution's departments and divisions are given more financial freedom provided they pay a percentage of their independently generated resources to the institution's development fund (generally between 10 per cent and 25 per cent);

- a bonus or premium system to reward those of the faculty and staff who participate in fundraising and similar independent financing activities (see the example of Tomsk Polytechnic University, Nizhnii Novgorod State University). This presupposes an additional bonus to the sum of compensation defined by employment contracts. Such bonus amounts may exceed the employment contract compensation sum by 10 or more times.

### **Conclusion**

Russian higher education institutions do not have long term experience in non-governmental financing and attracting funds additional to the state budget. This period naturally coincides with the reforms in the educational system and the overall reformation in political, economic and social areas of modern Russian society. These ongoing changes enable faculty and staff of Russian higher education institutions to take the initiative in expanding their area of activity, finding new markets for instruction, research, innovation, business and consulting.

## **2. Regional international co-operation and development as a way of funding a university: the case of Petrozavodsk State University**

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### **Geopolitical and socio-economic situation of the region**

The Petrozavodsk State University (PetrSU) is located in the city of Petrozavodsk, the capital of the Republic of Karelia, in the European North of the Russian Federation<sup>1</sup>. In the west, the republic borders on Finland, which is an EU member country and a part of

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1. The Region of the Russian European North comprises the Republic of Karelia, the Kommi Republic, Archangel, Vologda and Murmansk territories.

northern Europe. The republic serves an important transportation route connecting the all-season port on the Barents Sea, Murmansk, with the federal centre of Russia, Moscow, and the eastern territories of the Russian European North with the countries of Northern Europe.

The European North of Russia (the region) is a unique region of Europe. On the one hand, it is one of the richest territories of Europe in minerals and natural resources such as petroleum, gas, iron ore, fish and timber. This makes the region economically attractive in the way of testing various economic Europe-Russia integration techniques, in implementing concrete investment programmes and in improving mechanisms of international interaction in financial matters. On the other hand, the region is unique in its nature: its vulnerable Arctic environment, sub-Arctic and northern flora and fauna and its concentration of indigenous people with their original culture, customs and traditional trade. The main branches of the economy are mining, forestry and fishing. In the next 5 to 10 years, oil and gas industry development is expected to be greatly accelerated.

The Republic of Karelia, as a part of the region, has unique opportunities for international co-operation and development because some programmes are already being carried out on its territory. These are:

- EU projects, where some of them, for example, Interreg III, Cross-Border Cooperation, have an effect only in Northern Europe;
- Northern European co-operation programmes, both joint projects conducted by the Nordic Council of Ministers and individual projects of the member countries;
- the following international organizations, of which Russia and its territories are members, are active in the region: (a) the Baltic States Council, (b) the Barents Euro-Arctic Region, (c) the Arctic Council, and (d) the Northern Forum;

- three specialized programmes aimed at international co-operation development in the European North of Russia: (a) the EU “Northern Dimension” programme, (b) the US “North American Initiative” programme, and (c) the Canadian ‘Northern Dimension’ programme.

It is not accidental that the interest in the region originated in these countries of Northern Europe, USA and Canada. The countries of Northern Europe have a similar variety of mineral resources. At the same time, they have up-to-date environmentally friendly and advanced technologies for mineral resources extraction and processing so that these countries are interested in transferring these technologies into the region; for them it is both economically and ecologically important. Their other interests lie in the social sphere and in the field of culture, that is, aid to civil society development in the region, support of the indigenous people and the like. The significant USA and EU interest in the region is caused both by the presence of energy resources and also for reasons of military strategic planning as the region has a common border with the installation zone of the North Atlantic Treaty Organization’s (NATO’s) naval forces and its nuclear fleet. Canadian interests are motivated by their significantly similar opportunities and problems of social economic development such as the development and processing of natural resources, problems of relations between local and federal authorities, the ‘Northern’ technologies and engineering, assistance for indigenous people and many others are among them.

The main problems of the region are characteristic of many other Russian regions:

- a lack of highly skilled personnel in management and in the social and economic sectors;

- the excessive physical wear of industrial equipment and the use of outdated technologies;
- the undeveloped infrastructure for small- and medium-sized business development, and a lack of consulting firms, technoparks, etc.

In addition there are unique problems, characteristic of the Russian European North:

- an absence of knowledge and experience in mining and the use of technologies which are consonant with the standards of sustainable development;
- the complicated demographic situation, the population density hardly reaching 4.1 persons per square kilometre; a decreasing population due to a fall in birth rate in the period 1990 to 2000; a decrease in the population of the region by 6 per cent with a significant migration from the north into the central territories of Russia;
- the failure of the younger generation to return to the region after completing a course of studies in one of the major Russian cities.

### **The main tasks of the higher education system and the research institutions of the region**

The higher education system and the research institutions of the region were established to play concrete tasks in the region's social and economic development. In particular, the higher education system was designed to provide the industrial and social sectors of the region with well-trained personnel, therefore, in the early 1990s Archangel and Murmansk territories did not have universities, only pedagogical, medical, polytechnic schools (*institutes* in Russian terminology). The spectrum of scientific research was essentially confined to Northern and Polar studies.

The main tasks of the higher education system and the research institutions are:

- to provide the citizens of the region with higher education, local training and professional retraining courses in various fields;
- to give human and research support to the development of a democratic society in the period of transition to a market economy;
- research, adapt and introduce advanced and energy-saving technologies into the economy of the region and to promote innovation;
- to create a scientific and education network which is uniform with the countries of Northern Europe;
- to create an infrastructure for international co-operation and development;
- to give training, know-how and technical support for a uniform information network;
- to give assistance towards the development of civil society;
- to assist the preservation of the culture, traditions and traditional trade of the indigenous people of the North.

At present the region has a unique situation in that it contains substantial mineral resources, the major development of which is expected to begin in three to five years. International and foreign organizations and companies, in particular, from the countries of Northern Europe, USA and Canada, are interested in investing in the development of the mineral deposits in the region. They also see opening markets for their engineering equipment and technologies. At the same time, the region has not so far created the conditions for effective investment programmes; there is neither legislation for state guarantees of investments, nor the qualified personnel to make effective use of advanced engineering technologies.

It is the task of higher educational institutions of the region to undertake the solution of these urgent problems of training, research, technical support and lack of innovation activity and of informational and consulting support.

### **Approaches and mechanisms of international co-operation and development as at PetrSU**

International co-operation and development is one of the ways of raising funds for the university. The fund raising, however, is not the main purpose of the activity, but a means to reach the university's most important academic goal – high quality education. The interests of international organizations and foreign states in developing co-operation with the Republic of Karelia and the European North of Russia have predetermined the strategy and tactics of the PetrSU management in attracting financial and other aid to the university. The choice of the given strategic direction predetermined both the concrete mechanisms of interaction with international and foreign partners and the choice of partners.

First, we assumed that the system of higher education in the region could become one of the prime vehicles for international and foreign national programmes aimed at capacity building and developing co-operation for an infrastructure and development in the various sectors of the economy, the social sphere and culture. As a consequence of this decision a management reorganization was carried out at PetrSU so that it was more focused on working with international and foreign state organizations than with foreign research or educational institutions. As an example, the state organizations demonstrated their real interest in working with the university on a co-operation infrastructure when they established a network of information centres affiliated with PetrSU:



- in December 1995 the Karelian Barents Information Centre was established on the basis of a series of agreements between PetrSU and the Barents Secretariat in Kirkenes (Norway);
- in February 1998 Nordic Council of Ministers Information Office's in St. Petersburg, in co-operation with PetrSU, opened its contact centre in Petrozavodsk;
- in March 1998 the Delegation of the European Commission in Moscow, in association with PetrSU, established a European Relay office in Petrozavodsk;
- in September 2002 the Centre for Canadian Studies was created within the framework of the bilateral agreement between PetrSU and the Canadian Department of Foreign Affairs and International Trade.

The PetrSU example was subsequently repeated in the cities of Archangel, Murmansk and Naryan-Mar where other Barents Information Centres and Nordic Council of Ministers contact centres were established.

The main task of these centres was to inform organizations and individuals within the region about the purpose, goals and programmes of the founding international organizations as well as to provide project planning advice and technical assistance to Russian organizations and individuals applying for financial support. Their work is carried out with the direct informative, consulting and financial help of the PetrSU partners. As an example of their work the Karelian Barents Information Centre has supported more than 150 projects with a total sum of funding for more than US\$1 million during the last seven years. Their presence has allowed PetrSU:

- to organize information, consulting and technical help for staff of PetrSU and other institutions which fall within the framework of the respective programmes;

- to increase considerably the number of grants and the volume of project funding at PetrSU;
- to assist staff of PetrSU to create networks with foreign organizations.

A second aspect of the reorientation of PetrSU policies was a shift of PetrSU management from interaction with foreign research and educational institutions to co-operation with innovative and business establishments. This was caused, on the one hand, by the fact that the market for education, innovative and consulting services was aimed at the solutions of the problems in manufacturing and agriculture. On the other hand, it was caused by the lack of knowledge and experience in solving problems which foreign universities were already experienced in. The rainbow trout sea farming project carried out by PetrSU with Norwegian help, the introduction of Scandinavian technologies into cattle breeding, water treatment, energy saving, and work with public health services are examples of the work undertaken.

In order to develop further the growth of innovative activity and to increase its reputation the author, in co-operation with the rector of PetrSU, Professor V. N. Vasiliev, formulated a plan for making the Republic of Karelia an 'innovation testing ground' for research, testing, adaptation and the subsequent distribution of the world's best innovation development experience.

Examples of PetrSU's successful work with innovative and business establishments are the following projects:

- the creation by PetrSU and the Finnish firm, Metso-Automation, of a joint research and training centre on automation of paper production;

- a project on economically effective energy saving measures in the Russian educational sector.

The first project has already been followed by the creation of a gas and oil transportation centre at Tyumen State Oil and Gas University (Tyumen) in co-operation with Metso-Automation. The second project demonstrates the embodiment of the 'testing grounds for innovation' idea, where the foreign partners consider the region as a pilot territory for the project approval and subsequent duplication of model projects in the rest of Russia. The budget of the project includes US\$2.7 million, and is also financed from the Russian State Economic Fund and from the Ministry of Foreign Affairs of Norway. The Russian Ministry of Education has allocated about US\$700,000 for co-funding the programme 'Energy Saving 1999-2005'; the partners of the Russian universities in the project are Norwegian innovation firms.

Another example of an innovative project aimed at solving a business development problem is the Taiga - a Model Forest project where this time PetrSU's partner is the University of Joensuu in Finland. The project whose budget is US\$1.4 million is supported by UNEP, the Finnish government and the Finnish company, ENSO.

Secondly, the PetrSU managers have brought forward several initiatives, for example:

- the creation of the Northern European Open University consortium;
- the creation of a Rectors' Council of Barents Universities;
- the creation of a Barents Virtual University.

It is important to emphasize that all these initiatives have received support from foreign and Russian academic communities and from financial organizations. For example, the project of the NEOU

consortium is financed within the 'Innovative Project of Education Development' framework, financed by the International Bank of Reconstruction and Development.

Thirdly, the management of PetrSU has been confronted with a number of obvious problems which hamper the active participation of staff in international co-operation such as a lack of experience and skills in project management, a lack of information about funds and programmes and insufficient contacts with foreign partners.

A training programme for the faculty and the administration has been started where the faculty and the officials learn how to design a project and their work is now co-ordinated by the special information and consulting system. The essence of the project managers training programme consists in finding three to six motivated representatives from the faculties. The PetrSU professional managers and the representatives from the above mentioned information centres act as teachers in the programme and the programme funding is provided from the faculty retraining programme funds, which were established and financed by the Russian Ministry of Russia. The funds for beginning this were provided within the framework of two projects in the Ministry of Education programme 'Scientific, methodological, technical and information support of education'.

Fourthly, the international activity accelerated by PetrSU has substantially stimulated and attracted considerable financial support from the Russian Ministry of Education of Russia. A number of the Ministry's programmes are aimed at attracting financial aid from international and foreign funding sources into the Russian educational sector. Where a Russian university demonstrates the presence of co-financing a project from a foreign source (even if it only covers the participation expenses of a foreign partner) the

university has a good chance of receiving financial support from the Russian Ministry of Education. Good examples of this are the joint projects of PetrSU, the Norwegian Nature Protection Department and the Norwegian Centre for Energy Saving in energy saving which received funding from the Russian Ministry of Education to the figure of US\$100,000 annually during 2001-2002.

Fifth, attracting finances from international and foreign sources into the social and cultural problem sectors has become a special objective of PetrSU's international activity where teachers and the administration are taking an active part. In particular, within the framework of co-operation between the lawyer's unions of Vermont (USA) and the Republic of Karelia, PetrSU has participated in a number of projects. As a result the Faculty of Law in PetrSU has created a legal clinic which now provides free-of-charge legal services to low income social groups. In this case, the financial support from American and Russian co-operation helps student instruction and provides legal services to the population. Similar fund raising will be carried out in co-operation with the State Committee on Nationalities of Karelia in order to solve problems of the Veps national minority.

Sixth, a special direction of the PetrSU managers' work is to provide information and consulting services to establishments and firms on international co-operation and development and raising finance. The university signs a contract with an organization and the payment includes payroll facilities and PetrSU overhead expenses. As an example of this we have a joint project in the field of medical rehabilitation conducted by the Summaas Rehabilitation Hospital (Oslo, Norway) and Polyclinic No. 2 (Petrozavodsk); general management of which is carried out by a consortium consisting of the Karelian Barents Information Centre, representing the interests of Polyclinic No. 2 and the Medical Centre of Oslo University, representing the interests of the Norwegian hospital.

### **3. The development of the university under market conditions**

*Boris Ljvovich Agranovich, Tomsk Polytechnic University*

#### **Preamble**

Tomsk was founded on the Great Siberian Tract by Russian Cossacks. The tract joins Europe with the Orient. The town has existed for over 400 years. Tomsk is known for its 'lacy' wooden buildings, Siberian taiga, furs, gold, the wide spectrum of natural resources, as well as its unique research-teaching, scientific-technological and cultural-historical complex formed over a long historical period. The complex is considered as the intellectual centre of Siberia, the 'Siberian Athens'. The complex includes about 100 research and teaching institutions: six universities (one classical and three technical universities, a medical and a pedagogical university), the research institutes of Tomsk research centre of the Russian Academy of Science, the Siberian branch of the Medical Science Academy of the Russian Educational Academy, the research and project institutes for different economic organizations as well as scores of high technological scientific-production associations in defence, nuclear energy, petroleum, chemical industries, mechanical engineering and other industrial branches.

The Tomsk Technological Institute was established in 1896 as the institute of practical engineering among the Tomsk research-teaching institutions. The Tomsk Technological Institute was the first trans-Ural technical institute and it remained for a long time the only technical institution in the wide area of the Asian-Pacific region of Russia. The Tomsk Technological Institute became the Tomsk Industrial Institute and later the Tomsk Polytechnic Institute and finally the Tomsk Polytechnic University (Tomsk PU or TPU), a centre for research and teaching and the first technical university of the Asian-Pacific region of Russia.

Nowadays Tomsk PU consists of:

- eight institutes: the institute of language and communication, the institute of geology and the oil and gas industry, the electro-technical institute, the Cybernetic Centre, the institute of distance education, the inter-industrial institute for raising professional skills, the institute of engineering education, and the institute of international education;
- eight faculties: physics and technology, electro-physical, mechanical engineering, chemistry and technology, heat-and-power engineering, engineering management, humanities, the natural sciences and mathematics;
- three research institutes: nuclear physics, high voltages and introscopy;
- the Siberian Research Centre of prospective and non-traditional technologies ('Specter');
- a scientific-technological centre for sustainable resources;
- a Department of International Research Relations;
- a scientific-technical library.

The university has numerous specialist centres, museums and language laboratories and has branches in Yurga, Mezhdurechensk, Belovo, Novokuznetsk, (Kemerovo region), Kolpashevo (Tomsk region), Mirny (Yakutiya) and Prague (Czech Republic) and 13 representative offices.

The university has 19 laboratory and study buildings (total area 256,000 square metres), 2,500 computerized work places and a library of 2.7 million books. There are university residential places for 7,850 students. The university has an academic staff of 1,849 with 1,449 teachers including 141 doctors of science and 780 candidates of science (three of them are members of the Russian Academy of Science, 120 are members of Russian social-professional academies

and international academies, three are National Prize laureates, seven are Government Prize laureates, and two are President of the Russian Federation Prize laureates). The university has 12,000 internal students and 10,100 other students with 531 postgraduates in 70 specialties, 50 doctoral students studying in 24 specialties. The university has developed links with a large number of universities and research institutions overseas.

### **The polymodality of the university**

The university is polymodal in its activities. It can be the subject of many different influences: academic, the market, socio-economic, educational and pedagogical.

The development of the university in relation to the market is closely connected with the demands of the environment but universities keep their academic traditions and customs and also develop a business structure. Such a process is not achieved in a single step but represents a long, multi-faceted and system-organized series of stages that demand considerable modification in every aspect of the university's activity from a change in the socio-economic and professional (pedagogical) relations between the university and its staff to forming new mutual relations between the university and authorities. Such terms as co-operation, partnership and interaction between the university and the authorities, industry, society and other educational institutions and success in the competitive educational services and intellectual labour markets are necessary for the university to be successful in research and teaching in a market economy but at the same time, the university must keep its academic orientation, and its 'moral and intellectual independence from any political authority and economical force' (from *The great charter of the European universities*, 1988).



In the period when the new social and economic structure was being established in the country the activities and the development of the university and its relationship to the market also changed, beginning in the commercialization in the research and teaching area and continuing into others. It introduces new social and economic as well as moral and ethical considerations into the university, promotes its corporative interests and competitive position and exercises a profound influence on the academic community, the students and on university management.

### **Development of the university under the pressures of the market**

A number of quite serious problems, some of which are caused by the simultaneous reform of the Russian economy and the education system, make the adaptation of the university to market conditions more difficult:

- the rigid linear-functional structure of university management and lack of freedom for decision-making within the university to respond to market pressures;
- the absence of reliable forecasts of the regional, national and transnational intellectual labour market appropriate to the new economic conditions and future expected demands;
- the creation of a competitive structure for the award of government, regional and branch contracts as well as short-term contracts with enterprises and institutions for specialist training, re-training and raising qualification levels, which has not been fully achieved;
- lack of information about the nomenclature, quality and costs of providing educational services to the public and to state, branch and regional labour organizations, management services, enterprises and institutions;

- lack of maturity in what higher education offers in the variety of lengths of periods of study, of multivariance of higher education subjects, qualifications, volume of knowledge, of student academic mobility and of paid educational service levels for foreign students;
- an active policy in state and regional institutions in relation to forming a high level labour and educational service market is absent;
- lack of a mechanism for ensuring higher education quality at the federal or regional level;
- lack of stimulation for high level training and education at enterprises and institutions, industrial and economic branches by means of tax privileges;
- lack of financial services and support, adequate bank and credit facilities, and personal educational credit arrangements;
- no provision of a transition from universities being financed directly by the state to being financed through meeting people's education needs;
- no way of measuring the quality of the outcomes a university achieves meaning that quality and effectiveness cannot be used as criteria for the award of grants from the state budget in competitive situations;
- the principles and technology of rating professional educational programmes is only just beginning to be introduced and could allow students greater freedom to choose their educational programme on a more competitive basis;
- insufficient professional preparation for higher education management under market economy conditions;
- lack of state, regional and institute management structures to provide communication to higher education in general and to individual universities on educational service and intellectual labour markets.

The aim of the reconstruction of Tomsk PU and its financial and economic foundation and management system in the new market conditions is adaptation to the new social and economic system in the country, a rationalization of the high educational system and matching it to the market, achieving a balance of demand and supply, raising education service quality and taking into consideration the consumer's needs.

### **The structure of university finance under market conditions**

Finance and its effective use is an important part of university management and development. University activities are funded in the market is provided from two sources: the federal budget and from 'off-budget' funds.

Federal budget funding is aimed at support for the educational process, research and students' social support. The funding has about 40 subject expense lines and federal authorities exercise control over expenditure on a line by line basis. The process of redistribution to balance changes in demand and savings on particular budget lines is difficult and time consuming and expenditure analysis is of great importance and best estimates for projects for the Ministry of Education's approval must be prepared on this basis.

In addition to federal budget funding, a university supports its activities and development through 'off-budget' funds attracted through paid educational and other services, research contracts, the lease of buildings, charitable gifts and different types of commercial activity. The paid educational service expansion is through teaching foreign students and creating university branches in conjunction with large production companies and the industrial regions of the country. Specialist re-training arising from the structural industrial

transformation and increasing unemployment should become one of the main sources of 'off-budget' funding.

The increase in the funding for research should help the university to participate actively in federal and branch research programmes, in programmes led by the academies, regions, joint-stock companies and state enterprises as well as in national and foreign grant competitions. The promotional materials on scientific projects and technologies must be renewed systematically.

The main aim is to achieve a situation where every scientific project could be put into production or be passed to an external institution only if this accords with the university's financial interests. Thus, it is necessary to work out the intellectual property defence structure in accordance with the legislation and marketing centres for university educational services and intellectual property have to be established. The joint possession of patents and the selling on of patents and licenses should be widely adopted. Preference should be given to a transfer. Also analytical and certification centres and bodies that promote paid experimental and consulting work should be created. University and research institute workshops' experimental production facilities should be used for short-run production purposes.

The university should:

- find potential partners on the basis of suggestions put forward by faculties, chairs and other departments to realize joint projects with external institutions on the basis of university special fields of interest;
- undertake commercialization projects funded by banks or with safe partner-firms;

- participate actively in the creation of joint-stock companies, insurance companies, joint manufactures and enterprises with Russian and foreign firms. Charitable (sponsors') funds should be used mainly for field days, social welfare, etc. Trustee council members of the university should take part in establishing such funds;
- increase overseas economic activity by extending the search for opportunities to train students, attract postgraduates, organize study tours, give language training on an unpaid base, increase the university's attraction for overseas students by improving the university's facilities and creating comfortable living conditions;
- keep up with international exhibitions, fairs, symposiums, etc, so as to have opportunities to participate; create data bases about foreign firms and research centres working in fields where there might be interest in co-operation; use foreign scientists and businessmen's visits to advertise university services.

The main ways of making financial savings and in materials expenditure is by optimizing the organizational structure, analyzing the existing university structure, reorganizing it or establishing new departments. These new structures should not, however, result in an increase in management manpower. In the case of cutting running costs the main attention should be paid to energy supply savings. To achieve this engineering communications must be improved, devices for accounting for energy resources be installed. Competitive tendering for goods and services must be introduced; a blitz should be implemented on routine expenses; rents for residential accommodation should be charged on a market basis.

Generating 'off-budget' funds must be planned, as well as involving the motivation of university managers, chairs and faculty staff. Currently achieved figures plus departmental potential can be used

as the basis of forecasting income. An important issue that needs to be settled is the proportion of such income that goes to cover central university expenditure as compared to chair or faculty expenditure. The personal financial interests of departmental managers and university staff should be provided for in agreed bonus schemes or through staff remuneration contracts.

Financial resources attracted by departments go to their own accounts and payment of departments' expenses should be made from these accounts. If there is a shortfall or deficit the university can provide pecuniary aid on the basis of a grant of credit. The final summation of financial resource management should be the annual ratification by the university's scientific council, where state budget revenues are consolidated with 'off-budget' income. Future expenditure should be allocated according to institutional priorities. The scientific council should be informed periodically about expenditure against budget during the year and the control of institutional running costs.

**Table 3.1 Tomsk Polytechnic University: federal budget funding 1995-2001 (Million roubles)**

Items of budget classification	1995	1996	1997	1998	1999	2000	2001
Running expenses (direct, other, overhead)	32.3	62.9	74.4	103	156.6	258.2	342
Capital expenses (direct, overhead)	0.8	0.5	1.0	1.9	9.7	19.9	40.8
Research expenses	6.0	6.5	9.2	7.9	14.8	20.6	26.0
Total	39.1	69.9	84.6	112.8	197.1	298.7	408.8

**Table 3.2 Tomsk Polytechnic University: ‘off-budgetary’ funding 1995-2001 (Million roubles)**

Areas of off-budgetary funding	1995	1996	1997	1998	1999	2000	2001
Services	3,053	11,779	20,730	22,792	56,902	98,315	98,227
(Including educational services)	(2,746)	(6,841)	(14,086)	(20,457)	(41,993)	(57,505)	(77,896)
Research, economic agreements and contracts	15,941	16,673	22,948	29,382	63,819	82,865	165,346
Sponsorship	1,596	22,812	7,581	10,042	18,325	43,840	60,073
Rental income	1,175	2,008	3,469	4,300	5,490	5,575	4,937
Total	21,765	53,272	54,728	67,070	144,536	230,595	328,583

#### **4. Orel State Technical University: a Russian university model of the new formation**

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##### **Introduction**

The Orel area occupies one-twentieth of central Russia and as part of the Russian Federation it plays an integral role in Russia's economic complex. The territory is 24,700 square kilometres. In early 2000 the population of the region reached 989,900 people. The density of the population is 36 people per square kilometre. The main city is Orel (with a population of 346,500 people). The other large cities are Livny and Mtsenk; the urban population is 62.5 per cent. The area has large stocks of iron ore, brown limonite or brown (iron) ore, brown coal, phosphates, etc., which at the moment are not being developed industrially. There are stocks of lime, sand, clay, dolomites and chalk. The favourable geographical position on the crossroads on railway routes and highways between Moscow and

Ukraine, the Baltic States and the Volga region makes the city a large transportation centre and in turn has promoted the diversified development of the region.

There is a considerable industrial potential concentrated in the region with a wide range of engineering machinery companies, metal works, electronics, food and consumer manufacturing industry, building materials industry, etc. For example, the Orel steel factory is one of the leading quality hardware manufacturers in Russia and produces 12 per cent of Russian hardware goods. In 2002 the total output of the Orel Steel Factory was about 170,000 tons of end user products: wire, steel ropes, metal cord, electrodes, metal grid, fixture; ZAO 'Orleks' is one of the largest instrument-making enterprises of the Orel region, which specializes in manufacturing monitors and automatics for temperature, pressure and liquid level control, rotational speed metres for industrial and household refrigerating equipment, air conditioning, heating and ventilation systems, diesel and others. The revenues of the factory reach 350 million roubles a year and up to 15 per cent of its products are exported. AOOT 'Gamma' produces about 8 per cent of Russian made socks and stockings. One third of Russian-made motor graders are produced in the Orel region.

In addition, the Orel region is a territory of intensive agriculture, a testing ground for modern agrarian science: In the late 1980s the region surpassed many European countries and Canada in agricultural output per capita.

The Orel region has a large programme for reforming and supporting manufacturing. The guidelines for this are formed around Governor Stroev's decisions on industrial stabilization and taxation policy. The latter, on taxation, grants a range of exemptions for enterprises that increase industrial output. New laws on investment policy, innovation and state innovation policy, on science and state



policy in science and research and a number of others have been accepted; the Orel region has the most favourable investment climate in Russia.

During the last few years the city of Orel has become an important educational centre. Statistically the number of students per capita in Orel exceeds the average for other Russian territories with the exception of Moscow and Ivanovo. In Orel there are 10 higher educational institutions, 19 technical schools and other specialized education institutions, 34 vocational schools and 625 schools. The Orel State Technical University, founded in 1954 has been developing dynamically during the last few years in all aspects: its infrastructure has improved, the educational, research and commercial activities have expanded and technically and socially it has progressed considerably. It has more than 14,000 students and 2,500 staff and faculty. The university trains students in many fields: mechanical engineering and metal production, machinery, medicine, radio electronics, food and textile industry, building construction, urban and automotive facilities and also other spheres of business, economy, banking, social and legal activities. It has 50 major fields at four branches in the cities of Karachev, Bratsk, Livny, Mtensk and three research institutions and representation offices in other Russian cities and abroad. There are dissertation committees for doctor and candidate degrees in 18 research fields. The postgraduate school has 500 students in 50 research fields.

The transition from socialism to capitalism, the socio-economic crisis in the country and the sharp reduction of state support for education made higher education in Russia search for new ideas, principles and directions of development. Due to the change in legislation, the availability of highly qualified and feasible staff and its historically strong ties with industry, the university was able to integrate with the industrial establishment, to obtain shares in the

enterprises, to establish direct connections with the enterprises on mutually advantageous conditions and to establish new divisions providing the university with steady market ties. In the new conditions the university has taken the opportunity to develop a centralized mode of management, a new financial and economic structure of educational, research and industrial establishments involving a closer interaction with the regional authorities and the management of various branches of economy, thus ensuring it has influence on scientific and technical policy in certain industrial fields and in the region.

There was therefore a need to create such university complexes, which would remove the known contradictions and problems and would ensure a dynamic development of all aspects of university life. In a number of regions and, first of all, in the Orel area, the regional authority has recognized the university's potential in the social and economic development of the region and the need for a closer co-operation between institutions in education, science, innovation and the authorities. Therefore GOSKOMVUZ and later on, the Russian Ministry of Education, the administration of the Orel region and the administration of the Orel State Technical University started a project to create a deeply integrated educational, research and innovation complex (ERIC), which would be capable of solving important scientific, innovational, economic, industrial and educational problems for industry and the region.

### **The model for an educational, research and industrial complex**

The concept involves a conceptual transition to a deeper integration of education, research and manufacturing. It develops a new economic, financial and legal model for creating an ERIC based on a university. In this model all research institutes, industrial

establishments, financial institutions and other organizations vital for the region and the region's economy are integrated into the university and the university owns a share of the whole institution. The teaching process is directly connected to research, design and technological development, financial and economic activity on the basis of an integration of fundamental and applied scientific research, innovation, the teaching process and industrial production.

The overall objectives of such an integrated educational complex are:

- training specialists to an up-to-date international level integrating fundamental and applied scientific research, education and industry so as to ensure a transfer of technological innovation into all areas of professional activity;
- developing and disseminating advanced educational technologies, ensuring the education of a progressive and harmoniously developed individual whose interests are adequate to modern lines of public development;
- creating an educational environment where everyday classes are connected to fundamental knowledge and industrial production while the student is obtaining hands-on experience in technical design and the development of a product, following the development to the stage of serial production;
- creating production lines based on advanced research data, transfer of advanced technology into manufacturing and education focusing on the region's present needs;
- cost efficiency and the reduction of product development time;
- transforming a university into the centre of the economic, spiritual and cultural development of the region and uniting all creative forces for the revival of Central Russia and Russia as a whole;
- increasing the efficiency in personnel training and retraining on the basis of the newest educational technologies.

The practical importance of the emerging ERIC model at Orel State Technical University is that it offers a model which is applicable in other regions of the country. The creation of the ERIC has allowed the implementation of a qualitatively new level of education, faculty and research staff development. On average the product development period has been reduced by five to 10 times; instruction costs and know-how transfer expenses have been reduced; institutions and enterprises have an opportunity to share advanced equipment for educational and scientific purposes; it has become possible to use efficiently the fixed assets of universities, research institutes and industrial enterprises for educational, scientific and industrial purposes; it has attracted to education new, earlier unavailable, financial resources: bank loans, corporate investments, etc. Thanks to the new model universities are now able to start an associated enterprise as well as to be active players in the equity market. The new model enables universities to establish a uniform creative environment for graduate students and postgraduate students, faculty and industrial designers, technology and manufacturing experts.

### **Practical results of the ERIC project**

The concept of moving to a new integration level of education, research and industry is defined by property rights, by a uniform organization and management of all integrated administrative, financial, commercial divisions of the institution on one hand, and associated research institutes, industrial design and development bureaus, financial and industrial companies and enterprises on the other.

The university has successfully begun various training centres: such as the Regional Anti-crisis Training Centre, the Regional Tax Policy Training Centre, the training centre for professional accountants, the regional labour safety and environmental protection

centre, the regional energy efficiency centre, the regional quality control centre, the representative centre of the Russian Academy of Architecture and Building Construction Sciences, the Internet education centre and 12 regional branches of the national academic institutions. The university has scientific research divisions associated with its departments and faculties. On a different (terms of ownership) basis, more than 30 associated research institutes, industrial design and development bureaus, industrial companies and enterprises have been integrated into the university creating a uniform educational, research and industrial complex. Some examples of the most important enterprises integrated into the ERIC are:

- The stock company with limited legal responsibility (AOZT) 'Nauchpribor'. The university is the main shareholder of the company, owning 25 per cent of the company shares and one of the company's buildings. AO is the main training and internship place for the departments of electronics and appliances, new technologies and industrial automation. In co-operation with the university the factory develops and produces complex analytical devices based on methods of chemical and liquid chromatography and x-ray spectrometry. During the last few years the enterprise has begun to produce medical equipment, ecological research equipment, satellite television equipment, etc. The joint work of the university research team and the factory engineers has increased the quality and competitiveness of many products. For example, a portable digital x-ray device now is from 30 to 100 times less harmful to the patient in comparison with the similar equipment of other manufacturers. The joint educational, research and industrial centres and the laboratories are financed jointly by the university and the enterprise according to their contribution to the intellectual property and offer the opportunity to attract a competent research team to solve the technical and scientific

problems of the enterprise at lower cost but also to create a synergetic effect. The employees of the involved enterprise are working for their degrees at the university, actively participating in the educational process, and the university graduate and postgraduate students are on the payroll of the company developing and improving a product using authentic equipment, tools and service facilities.

- The Orel Research Institute of Consumer Goods Manufacturing Machinery is integrated in the ERIC as an administrative division; it is a leading industrial development institution of machinery for textile, footwear and leather manufacturing, devices for environmental protection, equipment for polymeric coating, devices for ecological activities conducted by the Russian Ministry for Emergency Situations, and educational and laboratory equipment. The Institute develops the intellectual property objects into product samples and later serial products for promotion. The Institute is also involved in educational, research and innovation activities; it is the main work place for the department of textile and food industry.
- Science-industrial company (NPO) Avtograph, once known as a producer of computer peripherals, is transformed into the Training and Production Centre of Orel State, a self-financed university division. It develops teaching aids and educational equipment and also produces custom-tailored demonstration machinery and mechanisms for researchers and postgraduate students. It is the partner of the department of new technologies and industrial automation.
- AO 'Metalloizdelii' has been transformed into the Training and Production Centre of the university. The university holds 78 per cent of the company's stock. It produced steel truss of medium tonnage, school furniture, and equipment for the food industry. The centre develops new products and provides technological support. It is the partner of the department of new technologies

and industrial automation as well as of some divisions of the department of textile and food industry.

- UNPP 'Nauka' produces high quality planed wood of the highest quality European standards. It was founded by the German company 'Weinig'. It supplies not only regional consumers but others outside the Orel area including first and foremost Moscow. It has a specialized store, 'Dom parketa' (House of wood floors); the cost of the special production line equipment is more than US\$1 million. The wood processing technologies are being developed by the ERIC experts in co-operation with German technologists. The company is the main partner for all building construction and economics majors.
- UPP 'Industria Obrazobaniya' has been successfully restored. It specializes in production of various educational, schools and laboratory equipment for specialized school and university laboratories and installs and provides a service to schools, vocational schools and universities in Central Russia.
- 'Orel-Technopark' brings together small and medium-sized companies. It specializes in information and telecommunication networks and the development and design of drills for hard rock, hard surfaces, frozen soil and construction materials. It develops remote monitoring methods and diagnostics machinery and mechanisms; it produces parts for Russian and foreign cars, buses and trucks made with its original patented technology; it undertakes development, research and experimental manufacturing of machines and devices for food manufacturers for bread products with special additives with therapeutic effects for food with medical additives for the population living in areas of radioactive pollution; it undertakes the improvement of new technologies in the stock market consulting in the equity market, business and financial analysis, legal analysis and support of business restructuring in agriculture the development of legal mechanisms,

financial and economic models, design and technology solutions and marketing research in education in Central Russia.

- 'TECHAVTOTRANS-OREL GTU' assembles tractors with parts produced in other regions of Russia and Ukraine and it also provides a further service for the vehicles. It is the main training ground for the university transportation majors.
- 'Slyvianskie okna' specializes in the manufacture and installation of high quality windows in schools, universities, colleges and others.
- 'SKB of Textile Machines' develops machinery for the textile industry and agriculture.
- The investment centre of Orel State Technical University functions as the basis for the Institute of Business Law. It provides a wide range of services to customers of the Russian stock market. The investment centre is a member of the independent organization of stock market dealers NAUFOR and is accredited at the main stock exchange floors of the Moscow Stock Exchange and the Moscow Interbank Currency Exchange. The main business areas of the investment centre are: (a) broker services in the corporate and government bonds market (the technology of hedging trade operations developed by the centre allows it to receive a fixed profit under conditions of an unstable market); (b) bill (of exchange) market and barter deals; (c) information and analytical client support; and (d) the marketing of scientific and technical products and services.

## **Conclusion**

The results and overall performance of the ERIC are as follows:

- The integration of educational, research and industrial activities by now has allowed the university to carry out a wide range of training programmes for professionals at graduate level and higher in different areas and fields on an essentially new qualitative level. It



has created conditions for professional adaptation of the graduates to the conditions of the modern market economy; it also helped the institution to create three times more university training programmes than before and to increase student enrolment.

- The ERIC has become the centre of scientific and technological policy-making of the region, the foundation of its realization, from legislation proposals to new production lines of new technologies developed at the complex.
- As a result of ERIC's appearance the fixed assets of the university have increased more than 170 times; the laboratory and classroom space has extended by more than 8.5 times.
- Thanks to the growth of technical, research and professional resources, the improvement of personnel potential, the development of scientific schools and research teams, a flexible system of bonuses and moral stimulation during the last seven years the volume of research and development has increased more than eight times.
- The number of registered patents has increased five times in comparison to the similar indicator in 1993. Annually the ERIC at Orel State Technical University registers about 100 inventions under patent law; the number of publications in national publishing houses has increased 10 times in the last three years reaching the number of about 800-900 articles on the research subjects of ERIC.
- Thanks to the research and development carried out, the companies associated with the university were able to update the lines of products coming out on the market with more than 50 new competitive products including devices for ecological research, educational equipment, instrument complexes, medical equipment and laboratory equipment, building materials, tractors, floor wood, etc.
- With the financial resources generated by the ERIC it is possible to restructure existing production lines and to build new ones. New

educational laboratories are being created and the old ones are being modernized. The housing programme is being completed with 33 two-level houses; the university has purchased new apartments for the faculty and staff; new sports facilities and a new hostel are under construction.

- The university has become the social and cultural centre of the region. The ERIC has a radio studio and a radio station, a television studio, a television station and an around-the-clock television channel, a paging company, an amateur theatre, a fashion theatre, a model agency, an institute of aesthetic education, various sports teams and art groups. There is a computer network and a distance education centre connecting all the branches of the university, all managed and financed by the ERIC.

*The main objective for the future* is the further development of the ERIC and its transformation into a regional educational centre of a new type. This is being worked out by the university in co-operation with the Russian Fund for Fundamental Research and a number of foreign educational centres.

## **5. Links between the Tyumen State Oil and Gas University with large business enterprises to generate financial support**

*Nikolai Nikolaevich Karnaukov*, Tyumen State Oil and Gas University

In the early 1960s, active development of natural resources was initiated in the huge and harsh territory beyond the Ural Mountains. The development of oil and gas deposits, construction of oil and gas pipelines, compressor stations, electricity transmission facilities, railways, new cities and settlements had begun. It was obvious that Western Siberia, with its unique deposits of oil and gas, would ensure that Russia would become self sufficient in energy resources and

the area become world famous. Workers, engineers and technicians were arriving in Siberia from different parts of the country. The state and large industrial companies were expending major resources to develop this rich area as quickly as possible. This required that training should be given to specialists in the region so that they could adapt to its severe climatic conditions. Progress was rapid. In 1963 an industrial institute was established in Tyumen. Municipal authorities and heads of oil corporations provided the institute with a new building with a full set of educational and training facilities, as well as apartments for instructors coming to Tyumen from other cities. They also provided finance to construct buildings for institutes and off-campus branches, student dormitories and sports centres. Through its long-term co-operation with oil and gas companies and large industrial enterprises, the institute became one of the largest technical educational institutions in Russia.

In December 2003 Tyumen State Oil and Gas University celebrated its 40-year anniversary. It now includes nine institutes: Oil and Gas Institutes (in Tyumen, Surgut and New Urengoy), a Transport Institute, a Geology and Geo-computer Science Institute, a Technological Institute (in Tyumen), an Industrial Institute (in Tobolsk), and Institutes for Professional Development and Personnel Retraining. It also includes 14 branches, centres for high school education and distance learning, information technologies, 16 scientific research institutes, a machine-building technical school and a technical lyceum. The university (together with its branches) has 34,000 students. Bachelor's, Specialist's and Master's of Science diplomas are awarded in 62 special fields and every year 3 to 5 new specializations are added to satisfy the requirements of oil companies and the region as a whole.

The co-operation of the university with leading companies starts at the high school stage. Companies provide various forms of support for the additional training of high school students and young workers

planning to enter the university. For example, the Tyumen Oil Company organizes preparation courses with full compensation of training expenses and the Surgutneftegas Oil Company has opened a centre for high school training at the Surgut Oil and Gas Institute. Co-operation with leading companies is most effective when it comes to training specialists at the university itself. The university has signed contracts with large companies, which partly or completely pay for the education of students and future specialists who will work in these companies after graduation. Such a system of specialist training has become the basic source of financing for the university. Many companies – Yukos, Lukoil, Transneft and others – provide special scholarships to gifted students. These scholarships exceed by a considerable margin the standard federal scholarships. Students mostly get practical work training at such large companies as Kogalymneftegaz, Sibneft, Noyabrskneftegaz, Yukos, Yamburgneftegaz. A great deal of the improvement of teaching and laboratory facilities was accomplished with the direct participation of industrial companies, and the use of information technologies in teaching has greatly increased. For example, Nadyngazprom, Yukos, Lukoil, Western Siberia, Surgutneftegaz, Tobolsk Petrochemical Plant and the V.I. Muravlenko Foundation have established new multimedia laboratories at the university, providing modern computer equipment with licensed software and equipped computer labs named after well known oil industry workers (V.I. Muravlenko, A.M. Kuzmin, V.N. Chepursky), and modern audio and video equipment to support lectures. Surgutneftegaz and Nadyngazprom have freely given their own buildings for university branches in Surgut and Nadym. The Tobolsk Petrochemical Plant has provided considerable financing for the construction of buildings for the Industrial Institute, and equipped 20 laboratories.

The university is also actively co-operating with foreign companies: Metso Automation, Computer Simulation Inc., Schlumberger CeoQuest, National Instruments, etc. Within the framework of this

co-operation the British company 'Drilling systems' has provided a drilling simulator to the drilling department. This simulator enables practically any situation to be modelled, from the absorption of drilling fluid to water and gas flows occurring during drilling of oil and gas boreholes. CAD/CAM system software (Cimatron, T-Flex, etc) has been provided to the departments of graphics, machine tools, mechanical engineering with a significant discount (at about 20 per cent of the market cost). Contracts between the university and companies for the individual training of specialists are signed increasingly often. The university, its institutes and branches are sponsored by the Administration of the Tyumen area and the Yamalo-Nenetsky and Khanty-Mansijsky autonomous regions. They provide assistance, including financial assistance, to organize conferences, seminars and sports events.

An analysis of the university income since 1998 shows that the share of 'off-budget' income to normal income is growing steadily: from 75 per cent in 1998 to 85 per cent in 2002. The major source of off-budget finance is paid to educational services, undertaken on a contract basis. Business relations with large financial interests (commercial banks, financial companies) are developing rapidly. As a result of this co-operation, the university not only protects its income from inflation, but also earns additional income through financial operations with securities. This co-operation gives rise to new projects deriving from the services market. A contract on co-operation between the university and an investment and finance company has been signed under which the company issues educational bills, which are used as payment and account documents for educational services. This project has attracted additional finance to the university, including the income from the sales of these bills in a secondary equity market. We are planning to establish, together with a joint-stock association Tyumenenergobank, an additional office for the

effective management of budget finance, as well as to establish a non-governmental pension foundation, whose major purpose would be the social protection of university employees.

During the 40 years of its existence, the university has gathered together a highly skilled scientific and pedagogical team. Today there are about 1,000 instructors; more than 100 doctors of science who are professors; 300 candidates of sciences who are associate professors; 33 members and corresponding members of branch academies of sciences. Qualified experts from different companies are also invited to give lectures. Twenty heads of branches and companies, who have contributed significantly to the development of the university, became its honorary professors. Agreements are made with large companies and industrial associations about the professional development of research and teaching staff at the university. An international computer centre for professional development and personnel retraining in the oil and gas sector has been established within the framework of an international Tacis project at the Institute of Geology and Geo-computer Science. The centre has been equipped by IBM with RISC-42T workstation, and modern software for the processing and analysis of geological and physical data and the modelling of deposits (software package by the Tigress company). This software has been used for the training of the institute's instructors as well as about 600 specialists in geology. Within the framework of the project, professors of the institute received training at the educational centre of the Agip company. Many of the university instructors have been trained in companies and universities in Germany, Canada, the USA and other countries.

The university also co-operates with leading companies in student activities. Student professional groups are organized, working mainly in the summer time. Companies are willing to use the services of

these groups. For employers it is important not only to have their work but also to take a closer look at them, to see their abilities, and possibly offer them a job after they graduate from the university. Corporate student clubs have become a common practice and 'Company days' are organized by such companies as Lukoil, Yukos, TNK, etc. This allows companies to inform students about their work and social policy. Within the framework of such events companies provide financing for student activities like discos, concerts, sports events and so on.

One aspect of co-operation with business enterprises is the establishment of a Board of Trustees, which has now been reorganized into a Development Foundation. It consists of 53 organizations, including large oil and gas enterprises: Sibnefteprovod, Surgutneftegaz, Surgutgazprom, Noyabrskneftegaz, Urajneftegaz, etc. Finance provided by large companies and enterprises contributes to financing university development programmes. Several heads of companies such as V.L. Bogdanov, K.K. Lysjanyj, T.R. Gilmanov, V.F. Kramskoy, J.I. Vazhenin, R.S. Suleimanov, V.I. Kononov, M.I. Galkovich, V.I. Nekrasov, G.M. Kiradiev and others must be specially mentioned. They believe that their enterprises cannot work effectively without the university being their major supplier of personnel. Besides the University Development Foundation, an Alumni Association has been established which gathers together the most active graduates working in companies both in Russia and abroad. The association co-operates with the university, its institutes and companies in various fields: It has a databank of specialists in fuel, energy and machine-building branches of industry, provides financial and moral support to the most gifted students and develops international relations. An association of support for oil and gas education has also been established at the university, including the higher and secondary specialized educational institutions of the oil

industry of the Tyumen region, company representatives and municipal authorities.

Over the last 40 years the university has provided education to about 50 thousand young specialists. Now it is hard to find an enterprise, a drilling brigade, a geological survey expedition of an administrative establishment, where our graduates are not working. Many of them have become highly skilled experts, managers, businessmen, and political figures occupying high positions.

Scientific research, especially applied research, also provides opportunities for attracting additional finance. The research potential of the university is high; departments and laboratories have the necessary devices and equipment, data banks and modern communication facilities. Sixteen scientific research institutes and science centres play the main role in implementing scientific research, working with the Russian Academy of Science Institutes and scientific and design branch organizations. The largest projects are being carried out by the research institutes of hydrogeology and geothermy, waste-free technologies in the oil and gas industry, reliability and safety of materials and structures, and by the science centre of geotechnics in oil and gas construction. The Western-Siberian Geological Oil Institute – one of the largest in its field – is now a part of the university. The university's scientific divisions have strong connections with oil, gas, transportation and other enterprises in Russia and abroad and the university assigns a high priority to activities carried out under contracts with companies such as Lukoil, the Tyumen oil company, Sibnefteprovod and a number of other corporations.

One method, effectively and widely used by the university, of studying scientific and technical problems at the regional and branch level, is to hold joint meetings of the Scientific-Technical Council of the university with industrial enterprises, as well as scientific-practical



conferences and seminars with the participation of industrial enterprises. While monitoring the activities and perspectives of key economic parts of the region the university collects a databank of requirements from potential customers. During the last three years such meetings have been organized with experts of some of the largest Russian companies such as Transneft, the Tyumen oil company, Lukoil-Western Siberia, Lukoil-Drilling, Urengoigazprom, etc. During the discussions, important problems are identified and changes made to topics of scientific research being undertaken at the university. As a result, technical equipment and expert services worth tens of million roubles have been provided. Close interaction between the university and the regional authorities of the government of the Tyumen area, Khanty-Mansiysky and Yamalo-Nenetsky autonomous regions, plays an essential role in the search for partners.

Attracting external finance allows the university to develop not only traditional oil and gas research, but also social and humanities-based research in such directions as ecological and industrial safety, the cultural-historical problems of the region, university management, applied ethics, and museum activity. Research institutes of science and engineering of other regions, applied ethics and a laboratory of cultural-historical research on Western Siberia have been established at the university.

The all-Russia scientific and technical journal *University news. Oil and Gas*, which has been issued by the university since 1996, plays a leading role in publicizing and providing information on scientific research. This journal is now widely recognized by experts, and industrial corporations are interested in publishing a large number of articles in it; as a result, this initially loss-making project is now profitable. Another actively developing area of 'off-budget' financing is training in specialist qualifications. More than 30 postgraduate and

doctoral level specializations and nine dissertation councils cover practically all the scientific and technical needs of the Western-Siberian oil and gas industry. These include geology, search and investigation of combustible fossils, hydrogeology, geophysics, geo-computer science, geoecology, drilling technology and borehole development, development and operation of oil and gas deposits, construction and operation of oil and gas pipelines, bases and storehouses, technological process automation and control, financial management and sociology, etc. Postgraduate and doctoral studies are important for large industrial enterprises and the number of postgraduate students from industry has been growing over the last five years. In 2001-2002 staff from industrial companies, from both the production and management areas, have prepared more than half of the dissertations defended at the university; companies such as Gazprom, the Tyumen oil company, Lukoil, etc., provide finance for the postgraduate training of their employees.

Continuing education is also one of the priorities for attracting off-budget financing through the Institute of Professional Development and Personnel Retraining. This Institute, together with divisions of the university, organizes seminars, courses on important problems and staff retraining; it participates in international co-operation projects, provides language training and short-term professional development courses amounting to more than 200 programmes. Integrated companies, particularly those working in the fields of extraction, processing and transportation of hydrocarbon materials, are interested in constantly improving the professional skills of their staff, which is necessary to obtain licenses as well as for effective and safe operations, and the university is the largest educational institution of the region with a wide network of branches. The university gives training to more than 3,500 specialists from industry annually, the most fruitful co-operation being with such

enterprises as Sibnefteprovod, Surgutgazprom, Transsibneft, Main oil pipelines of Central Siberia, Surgutneftegaz, Yamburggazdobycha, Uraineftegaz, Tyumentransgaz, Northern main oil pipelines, etc.

In 2002 the university became the base centre for the certification and preparation of experts from Gosgortehnazdor, a federal body. Certificates for satisfying the requirements of the National Certification Committee on Welding Engineering have been received. The university has thus been authorized to provide training to welders and experts in welding engineering at the first, second and third levels. Work on training specialists and establishing a centre on audit and enterprise certification is being completed. Managers will be trained according to standards ISO 9000 and ISO 14000. At the moment the university is also the only institution in the region which is authorized for training in crisis management and real estate valuations.

In order to attract additional funding, the university participates in numerous competitions for grants. For instance, the university won the competition for the right to implement the Presidential Programme on training managers of the Tyumen area administration. In 2002 the university won the competition to examine and train heads and experts of enterprises, establishments and organizations of Tyumen area on their knowledge of safety rules in industry.

Without a close co-operation with the municipal authorities and companies, the development of the university, as described above, would not have been possible. All sides recognize that they need one another in developing the potentialities of a sub-continent as vast as Western Siberia.

## **6. Generating non-state income in European universities**

*Michael Shattock*, Institute of Education, University of London

### **The changed financial climate for higher education**

It is self evident, even to the most optimistic of us working in European universities, that the translation from elite to mass higher education and the likely progress on to near universal higher education (Trow, 1974) is not affordable by the modern state. The competition for state resources between pre- and post-compulsory education alone would be enough to diminish the chances of higher education receiving the resources that it believes it needs but when we add the demands of health, social security and criminal justice to the list then it becomes clear that, in political as well as financial terms, higher education, as it expands, is likely to suffer a severe diminution in the unit of resource, or the funding per student. The position in the UK where the unit of resource (that is, the state funding per student) has fallen by about 50 per cent over the last decade can be paralleled in almost all European countries. This may not represent the dramatic fall in state revenues that was experienced in Russia during the 1990s – indeed there was only a marginal reduction in actual resources, just a substantial increase in student numbers without compensating income – but it has brought about a very sharp change in the way that universities have seen themselves and in the way that some universities have tried to manage their way out of the funding crisis.

We should not assume that the position is so different in the US, which has led the move towards mass and then universal higher education. There, the competition between the state universities and the rest of the state-funded public sector of the economy has become acute. In Europe we always make a distinction in our minds between private US universities charging high fees and state universities

charging fees only to out-of-state students but in fact the last decade has seen state legislatures conniving with state universities to solve the latter's financial needs by allowing them to charge increasingly high fees to in-state students. Most flagship state university campuses already have well organized and successful alumni fund-raising programmes but the real change in the last decade has been the extent to which private fee income has transformed state (that is, public) universities' financial relationship with their states. Most major state universities have increased their non-state funding to around 70 per cent of their total income and in Colorado it has risen to 84 per cent. Fees rose by an average of 10 per cent in 2001-2002 for in-state students across the US.

In Europe there has been a traditional reluctance to charge home students fees although the developments in the UK, as announced in the recent White Paper *The future of higher education* (Her Majesty's Stationery Office (HMSO), 2003) may influence the thinking of some other countries. The leading authority on higher education funding systems, Bruce Johnston wrote recently:

“This diminished priority for higher education [amongst the various demands of public expenditure] may also be due (somewhat ironically) to the demonstrated ability of universities and other HEIs to help themselves. Most competing claimants simply do not have higher education's ability to raise tuition fees or to generate revenue from the sale of staff time and expertise or the lease of university assets. This ability is not lost on politicians straining to meet more public needs than available public revenues can support. So, while it may seem like the proverbial 'punishment for good deeds' higher education's seeming ability somehow to withstand the loss of public revenues makes it all the more likely that these losses will continue.” (Johnston, 2002)

No doubt the logic of this statement, however unwelcome to most people in Europe, will strike governments in Europe as it has state legislatures in the US. The UK is now firmly launched on a path of charging fees to UK students but this contribution to generating non-state income is not included in this chapter because the UK remains out of step with the rest of Europe and the chapter concentrates on describing alternative ways of generating non-state income. But in the long run, Europe, like Russia, cannot ignore this source of funds, however much it involves a revolution in its thinking. In Russia, the depth of the financial crisis, together with the pressure of student numbers, has forced the change. The danger in Europe is that without the stimulus of an immediate crisis the political process will resist change and the universities will continue to suffer underfunding as a consequence.

### **Traditional sources of non-state income**

Historically universities, particularly in the US, but also in the UK, have relied on soliciting capital grants from wealthy donors. Capital grants given on a charitable basis are, however, no longer a route that can be relied upon for the following reasons:

- there has been a decline in private fortunes;
- companies, who used to be significant benefactors, are now much more accountable to shareholders for charitable giving;
- company headquarters have been globalized so that the close relations that used to exist between senior company figures and their local universities are much less likely to exist;
- university costs have increased substantially: an endowment for any of the areas – salaries, equipment, libraries and buildings – has become a much more substantial item than it ever was in the early 1980s;

- with low interest rates endowments are themselves much less useful to a university than recurrent income streams.

This view must be qualified, however, because although most European universities will not succeed in rescuing a financial downturn in state funding in this way, some have made notable attempts to do so. Thus, Oxford raised around £300 million in its major appeal a few years ago, and although there was a belief that the figure was somewhat inflated with research monies from various sources that were not strictly responses to an appeal, one must recognize the size of the achievement. Oxford, like Cambridge, might be regarded as a special case but Chalmers University in Sweden has, uniquely, for Northern Europe at least, raised over £20 million in an appeal. Most UK universities have begun to follow Oxbridge in trying to raise money through their alumni but, unsurprisingly, with much less favourable results so far, and it could easily take a generation to change the mind set of a typical UK graduate to regard his or her university as a proper outlet for charitable giving. This of course argues for beginning the process as soon as possible so as to bring forward the date when it may begin to offer real returns. What we did at Warwick was to woo the alumni for 10 years before beginning to ask them for money and then when funds began to come in they were channelled into a separate foundation which might build up over time an endowment fund on which from time to time the university might wish to draw. But by far the most successful approach at Warwick to the alumni was for funds to create bursaries for students from impoverished backgrounds – an approach that has generated over £1 million in three years – which will not benefit the university financially (except indirectly) but will enable it to retain a socially inclusive student entry. It is possible, therefore, that while particular universities, especially the older institutions or the most ‘go-ahead’, may tap into the capital-giving market, it is difficult to see European universities as a whole being successful.

## **Earned income**

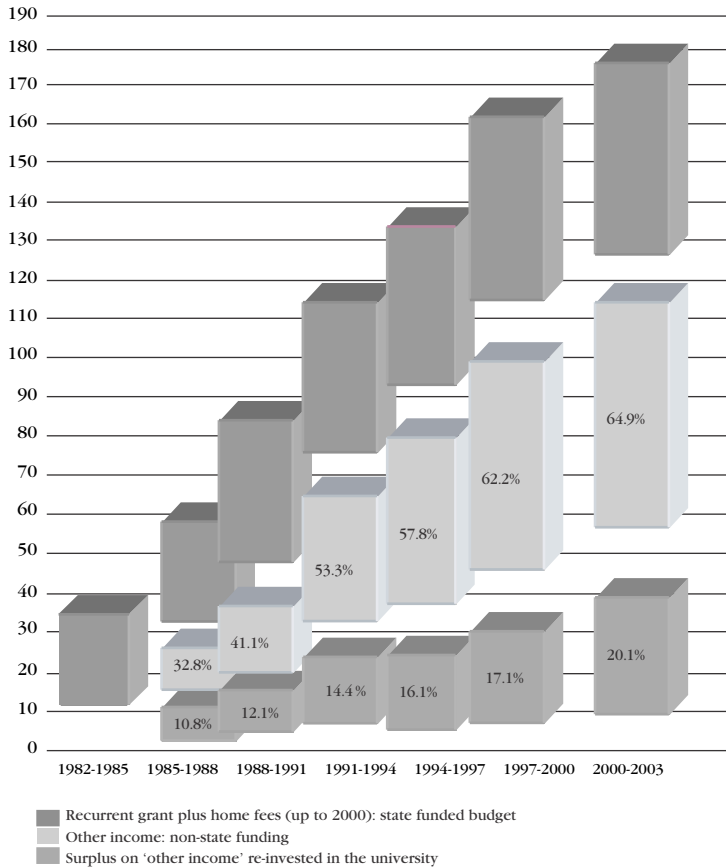
So while the donation route is not to be ruled out (and certainly many UK universities have invested considerable resources in Appeals Offices), it is not credible to believe that the current or any foreseeable financial or commercial climate in Europe is generally going to transform university finances by this means. We have, therefore, to look to alternatives. The most obvious, and the most secure and the most academically beneficial is to generate resources through an earned income process. *Figure 3.1* provides a summary of the process of income generation over two decades at one university, Warwick, and identifies separately income from the state, income from non-state sources (including Research Council grants which are made competitively and non-recurrently) and the surplus deriving from non-state income which was reinvested back into the university. *Figure 3.3* identifies broadly the activities from which this income was generated. It should be noted that, even without charging fees to UK undergraduate students, tuition fees charged to overseas students and to postgraduates, whether from the UK or elsewhere, make up quite a significant element.

### **What are a university's key assets for income generation?**

There is plenty of evidence, at least in the UK, that the most successful universities academically are also the most successful at generating external income. Oxford and Cambridge own two of the world's most successful academic publishing houses, both of which covenant their substantial surpluses to their universities. But where universities have sacrificed academic principles for finance, such as occasionally in making unfortunate alliances with lower quality overseas bodies to attract poorly qualified overseas students, their reputation has always suffered. The purpose of income generation must always be to create a better university, not to generate funds for their own sake.



**Figure 3.1 Growth in non-recurrent grant income in one university since 1982 as a proportion of total university income**



It is important at the outset to understand the legal and other powers of the university. In the UK the university is a corporate body which normally owns its land and buildings, employs its staff and has the power to utilize its facilities in any way it wishes to generate resources, subject to two important caveats, the first being that if it makes demonstrable profits it becomes liable to income tax,

and the second, if it was to substitute generating income for its teaching and research role it would place in jeopardy its charitable status. In many European countries, universities do not hold the freehold for the property they use – Sweden, as Lars Ekholm makes clear in *Chapter 5.3* is one of these. In some countries there are still inhibitions about state-funded universities retaining income generated from non-state sources, although the deregulation of higher education finance is proceeding apace now within Europe.

However, it is worth asking, irrespective of the legal or fiduciary structure the university operates in, what are the key assets that the institution has which might be utilized to generate income? They seem to me now, as they did some 25 years ago when we began the earned income process at Warwick, to be as follows:

- management capability;
- academic reputation;
- location;
- staff;
- buildings.

Many of these assets are interdependent – one can have managerial capability which may provide the capacity to market the university well, but unless the institution has a strong academic reputation your flow of overseas students may be short-lived or may be of a quality that imposes costs, because of heavy teaching or supervisory requirements, rather than providing income. Similarly you may have architecturally attractive and flexible academic and residential buildings, but if they are located in an inaccessible part of the country they may be much less of an asset than if they are located in or near main centres of population. And, of course, you may have the most distinguished staff but if they are all philosophers, rather than engineers or members of business schools, their external earning capacity may be limited to attracting overseas students. Nevertheless,

these assets are the key to developing an institutional earning capacity and it is how they are utilized that determines whether a university is able to break out of the cycle of under-funding that is imposed by government parsimony.

**Figure 3.2 The modern approach to generating non-government funding**

- Student fees
  - Home students
  - Overseas students
  - Specialist Master's programmes
- Research
  - Overheads
  - Patents, licences, royalties
- Continuing education
  - Short courses for industry and the professions
- Internal privatization
  - Charging for services
- Retailing
  - Shops
- External use of facilities (hiring out)
  - Conferences and holiday letting
  - Sports facilities
  - Equipment
- Use of campus
  - Science parks
  - Other lettings

**Key principles of income generation**

If we have identified our key assets we need to turn to what should be a university's key 'business' principles:

- Remember what your core business is – a university's business is to be academically successful, not to run a successful business.

- Observe the well tried commercial mantra: 'sales are vanity; profits are sanity' – any university can generate non-state income but the test is whether the university can generate a surplus or 'profit' on the income, either a monetary profit or some real and tangible academic gain.
- If the main purpose of income generation is to build a better university the non-state income must contain a surplus element for re-investment in reinforcing existing academic activities or pump priming new ones. It is all too easy to slip into a situation either where a university can find itself propping up a falling income stream from some other source because it has allowed itself to become over dependent on it or where considerable efforts are made to generate income from an activity which also involves the institution in substantial hidden costs.
- Income streams must be clearly identified and managed as if they are independent 'businesses'. A key element in generating income is to monitor activities as separate and individual 'businesses' on a regular basis. Every activity will be different, every income stream will be subject to different pressures and different fluctuations, and understanding these and managing them are of the utmost importance. Treating non-state income as a single income stream like state income is a recipe for not generating much of it.
- Income and surpluses, or 'profits', need to be shared between the centre and the departments – there need to be incentives and the benefits should be shared. If the department generating the income sees it all flowing to the centre of the university, it will have little incentive to increase its contribution. On the other hand, if the department retains all the income generated, not only are the activity's indirect costs to the university ignored, but the university is denied its surplus element to reinvest. In such a situation departments that can generate external funds flourish, and departments that cannot, do not. These inequities make for unhappy universities.

- Should income-generating activities be vertically integrated into the overall management of the institution or outsourced? Conventional business management approaches will suggest the latter but an entrepreneurial approach will demand the former, although perhaps not for every income stream. This is a controversial philosophy and has its risks, but if the university outsources its 'profitable' activities it will lose a large element of the surpluses. A good example in the UK is renting out space for an external book-selling chain to establish a university bookshop or for running the bookshop itself. The rental income stream is secure but not very high whereas if the university owns and runs the bookshop it receives the whole profit (or, of course, covers the loss).
- Resources need to be invested to achieve a financial return; simply trying to exploit an activity without investing any resources to adapt to the market place will yield minimal financial returns. Such a maxim is a commonplace in business activities but is often ignored in universities. In other words, to use the bookshop example again, if you invest in the shop, in its décor, its staff and in the book stock, you will make a better surplus than if you run it on minimal resources. An attractive bookshop is an asset to a university (as well as being potentially profitable) but a poorly staffed, poorly supplied outlet is merely a source of complaint and will be loss-making.
- Charging policies should be an important element of the 'business' strategy; (universities have a strong tendency to undercharge and, as a consequence, minimize the 'profit' element). Universities, especially universities emerging from an era of 100 per cent state funding often lack the 'business' confidence to charge a market rate for their offerings, whether it is fees for an MBA or a charge for use of its conference activities. This undervalues the offering, lowers the expectation of the customer and in the end reduces the quality of what can be offered. There is plenty of evidence that high MBA

fees (providing the fees are appropriately re-invested in the product) generate increased numbers of applicants and higher fees still, while high conference charging ensures better facilities, more business and a more ambitious offering. Universities that are apologetic about their charging levels do not impress their customers.

- Internal privatization, that is, turning heavily subsidized services into ‘profit’ centres. University resource allocation regimes are often very tolerant of second-rate services. Services that are exposed to market forces are immediately jolted into levels of activity and managerial initiative and ingenuity that can transform them not only into activities that can generate surpluses instead of costs but also into activities which provide a better service to the university community.
- Recognizing the importance of process over unstructured entrepreneurialism in managing identified income streams; this involves:
  - detailed forecasting and monitoring of income and expenditure on a two-monthly basis;
  - annual challenge meetings with the income stream managers;
  - an annual reporting mechanism;
  - five-year planning and forecasting;
  - accountability.
- Generating income is 90 per cent ‘perspiration’ and 10 per cent inspiration; individual academic entrepreneurs are high risk and are more likely to overreach themselves than to generate continuous resources for the university. Creating a process and maintaining it rigorously gives the university’s non-state income consistency and sustainability.
- Integrating non-state and state-derived income for institutional planning and forecasting purposes and in resource allocation. There are two important points here. The first is that the university

must have the confidence in its monitoring and forecasting abilities to consolidate its non-state with its state income for planning purposes. If it does not and if it views its non-state income as 'icing on the cake' it will not use it to the best advantage. But secondly, as demonstrated in *Figure 3.3*, the earned income, if effectively managed, can become the dominant source of funding and more secure than state funding because it is dependent on the university's own efforts and not on the vagaries of state budgeting.

### **Management**

In listing above a university's key assets for income generation, management capability was shown as the first that any university must identify. Universities may have in abundance all the other key assets but if they do not have management capability in the centre of the university then they will fail to exploit their assets effectively. Following the earned income route as a way of supplementing or even replacing reduced state income involves management skills not just in the centre but also in the academic departments and in those other areas of the institution where income can be generated. In strictly commercial areas like running conference facilities, retailing outlets or privatized services, universities may need to recruit staff with successful records in the private sector. Placing reliance on earned income to fund university development involves risk but good management will ensure that when things go wrong, as some activities are bound to do, the problems are identified quickly and dealt with effectively. At Warwick we always argued that our earned income was more secure than our state income because the state was inconsistent in its funding policies and always fiddling with and adjusting its funding formulae in unpredictable ways whereas the tightness of our forecasting and monitoring of earned income meant that there were very few surprises in our 'profits' levels at year end.

However our essential machinery for managing earned income was the establishment of a board, which mirrored a company board, which we called the Earned Income Group. (The somewhat downbeat title was to avoid giving it too high a profile in the university.) But in spite of its title it operated as far as possible like the managing board of a company, meeting every two months, monitoring the income streams, considering business plans for new ventures or claims for investment or re-investment in activities to increase earnings and launching enquiries into areas where a fall in income was apparent. The importance of this mechanism cannot be emphasized enough as a way of injecting a business-like structure and an evidence-based decision-making system into the process of generating non-state income. It provided:

- a mechanism for co-ordination;
- a management authority (especially important when income streams did not meet forecasts);
- a stimulus for new activities;
- a source of ideas for improved 'business' practice;
- a final 'decision' point for evaluating risk.

Such a board, in a university structure, should not, however, have final authority. Universities are not businesses and must always remember that generating income is not an end in itself but a means to enhance the core business of teaching and research. The board therefore needs two 'masters' - the first must be representative of the academic community, and the second must be the final financial authority of the university. To be effective the board needs to be single-minded about its financial objectives and not be swayed by academic sympathies for particular projects. It should also be careful not to stray into making academic judgements, leaving those to be properly taken by the senate or some other academic body. Similarly the board must fit into an overall financial planning structure for the



university – if it wishes to borrow money from an external financial authority to fund a new conference centre such borrowing needs to be considered within the institution's overall borrowing portfolio; if it wants to put up a new building which will generate new income streams, the planning of the building must be undertaken within an overall university building development plan. The board must not, therefore, be allowed to override established decision-making processes or it will too easily impose priorities on a university which may not sit easily with the university's overall academic objectives. By inserting a board into a university structure in this way, however, will provoke urgent and quite passionate arguments about priorities and ensure that the overall governing structures of the institution become committed to the development of an earned income approach.

### **The non-financial benefits**

This chapter has concentrated on the financial benefits of generating non-state income in a particular context. Let me conclude by emphasizing the non-financial benefits of a successful earned income programme:

- it provides support for academic development which would not be possible from reliance on state funding alone;
- it makes the university more outward-looking particularly towards its local and regional community;
- it increases its regional economic impact;
- it diversifies its activities;
- it improves its facilities;
- it creates external partners;
- it improves the university's public image;
- it renders it less subject to state control.

These benefits are considerable and amply justify the effort that is required to turn a university in this direction. Soliciting donations may remain necessary but earning financial support is a lot more satisfying than begging for it, and it brings fewer strings. Universities have entered a new age in Europe where, with mass higher education, state subsidies will provide for a subsistence university economy but not for excellence. If we want universities to survive as major centres of innovation they will have to find a resource base in addition to state funding or we shall no longer be able to attract outstanding young staff and we shall lose intellectual and research leadership to organizations that are entirely creatures of the market place.

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## 4. UNIVERSITIES AND REGIONAL DEVELOPMENT

### 1. Overview: Universities and regional development

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Education, science and technology in the modern world are considered by the public in most countries as main factors in guaranteeing economic growth and the raising of living standards. A new structure of economic, political and social relations has evolved in response to the advances in science and the resulting technological implications. Education and science are changing to become one of the major forces of national and regional achievement. This fact predetermines a steady growth in the potential of universities to have an impact upon regional development. At the same time universities create in a qualitative sense new conditions for their existence in a changing socio-economic environment. It is difficult, if at all possible, to consider the issues of effective interaction between universities and the world community while ignoring the regional socio-economic environment. In other words, along with the main characteristics of the universities' activity, one should consider aggregate regional peculiarities and a developed system of intra-relations and intra-connections, which include economic, geopolitical, socio-cultural and other factors.

Thus, the significance of the role and place of the universities in the socio-economic infrastructure of the regions is twofold:

- The evolution of universities in their environment has an inevitable impact on the terms and pace of regional environmental development as well as the regional universities' own development.

The level of the regional interconnections formed predetermines the development, in its turn.

- The development of international co-operation between universities harnesses the existing system of regional interconnections. The reliability of the latter is essential for the effectiveness of forming foreign relations.

So, universities, being among the key elements of the regional socio-economic infrastructure, generate changes in their environment in the following ways:

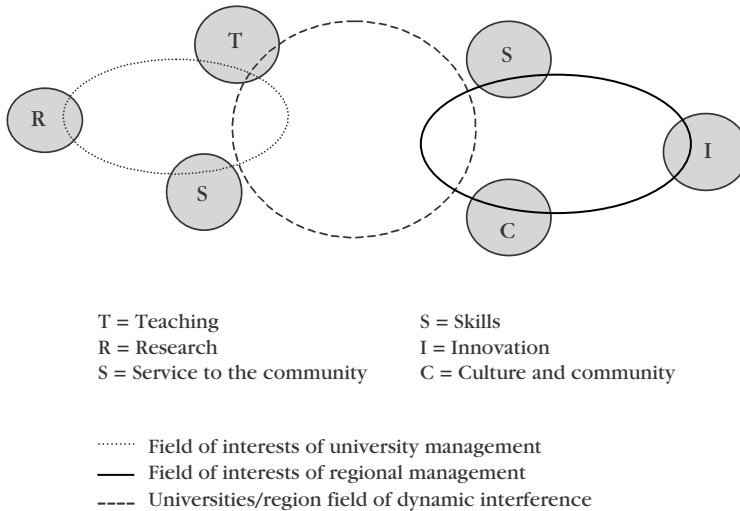
- increasing the intellectual potential of the region by accumulating and creating new knowledge and raising education standards among the population;
- producing innovation in goods and services, which provide the base for the innovative development of the region's economy and society;
- harnessing knowledge to shape policy, strategy, planning and also to raise the cost effectiveness of regional development;
- researching and promoting cultural and national traditions;
- developing information services.

In an advanced industrial society the concept of 'the knowledge society' has evolved. As far as universities are concerned, the demand for knowledge in all its forms requires some qualitative changes in the role of universities in regional development and in their responsibility for responding to regional needs. This phenomenon is clearly shown in the work of Goddard and Chatterton (University of Newcastle):

- In underdeveloped economic conditions university teaching and research should be sensitized to achieve specific social and economic goals.

- Universities located in the regions have faced persistent requests to produce new agents and agencies that could contribute practically to regional development.
- These requests are shaped by the new processes of globalization and localization in economic development.
- Under these conditions knowledge and professional skills prove to be as essential as physical infrastructure.

**Figure 4.1 Universities/region interdependent management process**



Source: Goddard and Chatterton, 1999.

It is the area where the interests of universities and regional authorities overlap that offers the major opportunity to establish new types of interconnections and interrelations to affect the development of social and economic changes in a knowledge-oriented region. But one needs to consider the universities' function in the context of globalization, the changing character of regional

development and the recognition of the regions as being significant arenas of political and economic activity.

A number of new questions arose out of the development of an agreed management system in the area where regional authorities' and universities' interests interfaced:

- Are universities able to have any practical effect on the policy and economy of regional development through the gradual establishment of conditions under which a knowledge society can be built?
- Are universities reasonable to expect additional resources to support their work as their regions and society develop?
- What is the reason why in underdeveloped economic conditions many universities have been changing from a traditional collegial structure to a more professional management style?

Of special interest is the question of what institutional structures can best provide the management with the activities that fall in the interfaces between the interests of universities and regional authorities. Are the traditional institutional structures such as the Council of Rectors sufficient to provide a favourable university-region interaction? Or do the times call for some additional institutional structures that can function faster and more effectively? This is one of the key questions dealt with in this section.

## **2. The role of the university in the development of regional innovation systems**

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It is nowadays recognized by most scientists and specialists that the role of knowledge in the modern economy has been radically changed. Knowledge is being transformed to be a key economic resource in production processes. Knowledge creation and diffusion processes take the form of an integrated system which is incorporated into the overall economic activity of firms, regions and nations.

Research into inter-country growth differences, structural changes and world trade shares have shown that innovation creation and diffusion dynamics “depends not so much on how specific formal institutions (firms, research institutes, universities, etc.) perform, but on how they interact with each other as elements of a collective system of knowledge creation and use, and on their interplay with social institutions (such as values, norms, legal frameworks, and so on” (Smith, 1995). The role of the university as a knowledge producer and distributor has, therefore, radically changed.

In this chapter the authors investigate this process through an analysis of the university as an element of a national and regional innovation system. We accept Lundvall’s definition that “... a system of innovation is constituted by elements and relationships which interact in the production, diffusion and use of new and economically useful, knowledge ... a national system encompasses elements and relationships, either located within or rooted inside the borders of a



national state” (Lundvall, 1992). Lundvall and other followers of this approach focus on the processes of learning and knowledge accumulation, especially their institutional aspects and on the interactions between innovators. The main idea is that economic activity and dynamics are determined by different innovation activities of which the learning processes are the most important.

The centralized organization of innovation activity, which was inherent in the planned Soviet economy, was discovered to be ineffective in real economic life. It was also not able to promote the achievement of necessary goals in an emerging market economy. Because of this, the most acceptable model in modern Russia is that innovation activity should be oriented towards regional needs above all because this lowers the costs of overcoming the technological crisis and increases the efficiency of investments (Atoyan *et al.*, 2001).

However, during the period of economic reforms the theoretical and methodological basis of innovation at a regional level was underdeveloped and this impeded reform. In Russia, research on innovation has been carried out since the 1960s in two ways, the first reflecting macroeconomic tendencies within the country and abroad and the second linked to the microeconomic level of enterprise development. The innovation element of regional policy was not analyzed because research on regional specifics was not considered as relevant to research on a centralized economy. The growth of regional economic power is as a result of social-economic reforms, and nowadays innovation performance is a key in regional economic competitiveness. However, the negative features of the modern Russian economy – an inadequate legal basis for innovation support and ineffective tax and credit policy systems – restrain this interest. As a result internal stimuli to innovate are very weak, and external stimuli generated by the knowledge-based economy in many

developed countries are not allowed to operate. In spite of the beginnings of economic growth in the last two years the situation has been changing too slowly. A similar situation occurs in many countries which have transition economies. Such a large-scale economic system can be defined as chaotic or as a non-organized system in which organizational and regulatory structures are very vulnerable. It has a low sensitivity to external influences, which are quickly eliminated leaving no impact. Because of this, attempts to change the situation from the outside, for example, by government efforts, will be unsuccessful.

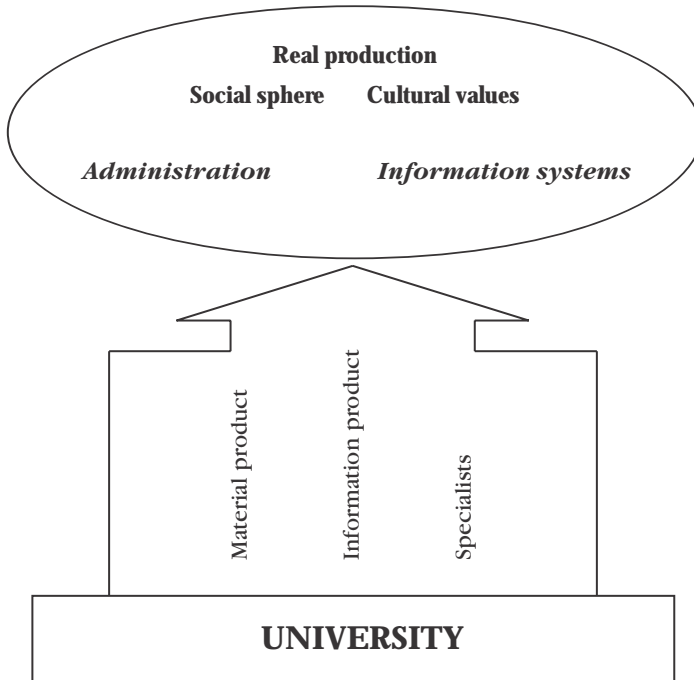
For social and artificial systems there are two ways to change non-organized space and increase its level of organization. The first is by strong intervention of some external factor like a revolution or industrialization which can create a new system, but such intervention requires large-scale resources which the country does not have. The second is to destabilize the equilibrium in local sectors of non-organized space and insert organization and regulation into them which will lead to a diminution of entropy. As a result chaos comes to be structured in a non-organized system and some organized stable elements arise whose behaviour can be predicted.

In the future, they will develop themselves, will increase the extent of their organization and, as a result, will diminish non-organized system entropy. Thus, the transformation of a non-organized into an organized system can be achieved incrementally and from the inside, through reinforcement of 'stability islands in an ocean of chaos'. This approach takes more time but less resources and the disturbance may be less. The university can be considered as such a 'stability island', an organized element in a non-organized space within a region. This is only made possible because among all the sectors of Russian science only the higher education sector is in a position to salvage to

a significant extent its research and innovation capability which can serve as a base for raising innovation activity within the region and within the country as a whole. This is supported by the Russian Ministry of Education's policy of reforming the higher education system. One element of this policy is the transformation of parts of Russian universities into Education-Research-Innovation Complexes (ERICs). In contrast to a traditional university orientated towards teaching and research only, ERICs are planned to integrate educational, research and innovation-production activities aimed at an output of three types of innovation products:

- new types of specialists who can adapt and generate new knowledge rapidly and effectively;
- information innovation products - R&D results, social and economic expertise and so on;
- material innovation products - high-tech knowledge-intensive goods created out of new R&D achievements.

The university can affect all aspects of regional life through innovation products - real production through new knowledge-intensive goods and technologies, information systems within the region, the management of production, lifestyle, culture and high quality specialists (*Figure 4.2*).

**Figure 4.2 University impact on the region**

As an ERIC concentrates all phases of the innovation process within its own organization, including its infrastructure and staff training, this allows it to become to some extent independent of the external world for the supply of resources of all kinds. As a result, the university can become the real agent of the regional economy which is able to create and achieve results. In a developed and stable economy (an organized system) the university's role is the output of various types of innovation products but in conditions of economic transformation and the formation of a regional innovation system the university also has the important additional function of inserting an organization into a non-organized system.

The case of the Saratov region is a confirmation of what has been described above. The Saratov region is a large industrial, cultural and research centre. There are many large industrial enterprises, universities, and research institutes in the region. Some elements of a regional innovation system – innovation firms and centres, technoparks, and others – exist. However, the creation of a management system of regional innovation development is necessary. The innovation management system is set up on the basis of the creation of an ERIC and its linkage with the regional innovation system of social and economic development (RISSED). The management system includes three aspects: structural, functional and informational. The structural aspect consists of creating an ERIC management organizational form and structure that is linked with RISSED. The functional involves examining the forms and types of scientific and industrial units from the point of view of associating and combining organizations, linking scientific and industrial organizations, ascertaining the property status of the new units, establishing management structures and forms of contract relations. These functions include organization, planning, accounting, control and regulation. The informational aspect includes how information is circulated and reflects the forms of input, intermediate and output information, technical means and ways of treatment, coding, processing of information, modelling of decision making, criteria, restricting the choice of decisions.

For designing an interactions system between ERIC and RISSED it is necessary to provide the following requirements:

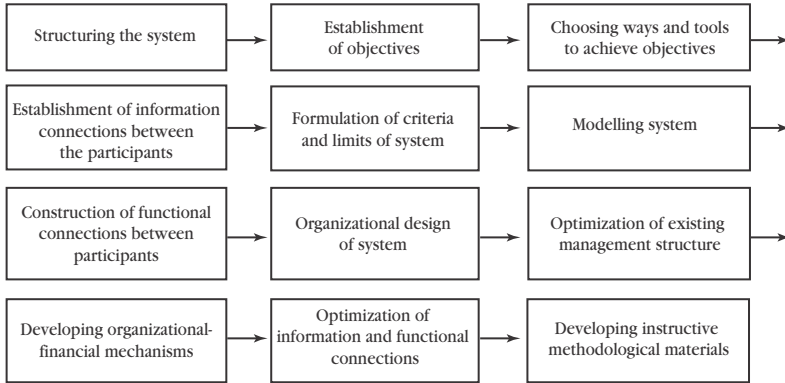
- the system should be oriented towards the innovative social and economic development of the region on the basis of scientific and technical innovation in technical, social, economic, ecological and other areas;

- the system should have a similar interaction system with the federal authorities;
- in choosing the priorities for scientific and technical development, decisions should be guided by export opportunities or import substitution and by the scientific and technical, industrial and human potential;
- the content of the system should be oriented to using the best foreign and domestic practices;
- an ERIC should provide the project management methodology;
- the logistic approach is recommended for the optimization of the process of exploitation and the realization of scientific and technical production and its material, financial and information support;
- the general criterion for innovative development should be the economic or complex efficiency of the projects and programmes both during their preparation and during their realization;
- the dynamic balance of the main technical, industrial and resource parameters of interaction should guarantee the efficiency of the interaction between the RISSED and the ERIC systems;
- the principle of relevance must be observed to concentrate efforts on the process of educating specialists and the output of scientific and technical production while the aims of the ERIC subdivisions should be subordinate to the aims of RISSED.

The formation and subsequent interaction of ERIC with other participants in a regional complex can be constructed on the basis of descriptive and prescriptive approaches. The descriptive approach is through research and a subsequent improvement of the existing management system. The prescriptive approach is the creation of a new system on the basis of a study of the interactions between the various potential contributors in ideal conditions. In the present paper the descriptive approach is recommended.

Figure 4.3 describes the sequence of steps to form the interactions between an ERIC and other regional actors.

**Figure 4.3 The sequence of forming the interactions between the ERIC and other regional actors**



Management must also include an analysis and forecasting system, strategic, tactical and operative planning, monitoring and regulation. Indicators of the growth of GDP at domestic and national levels and the actual economic efficiency of the innovation projects must be calculated; known innovation risks must be estimated and their rankings known.

Technology transfer is an important part of innovation activity and is fulfilled by the Saratov State Technical University (SSTU) which is one of the largest industrial, scientific and cultural centres within the Volga region. Most of the innovations are in mechanical engineering, chemistry and oil-chemistry, energy and the glass industry. Innovation activity is based on a well developed institutional basis. There are Acts of the Saratov region ‘*On innovations and innovation activity*’, ‘*On guarantees of private investments in the*

*Saratov region*', and *'On stimulating investment activity in the Saratov region'*. Until 2002, an Expert committee on innovation activity operated within the Supreme Economic Council under the Governor. The main tasks of this committee were the implementation of legal acts for promoting innovation activity in the region, for maintaining the innovation infrastructure and for the support of training for personnel for innovation companies and other important activities. In 2002, the Supreme Economic Council was reorganized and, additionally, a Council of Science and High Technologies was established. The transfer of innovation technologies and products out of SSTU is promoted through a science and technological park called 'Volga-technics', affiliated to SSTU. According to a rating in 2000 by the International Association of 'Technoparks' and the Federal Ministry of Education, the SSTU technopark ranks third among 75 Russian technoparks.

The technopark includes the following: innovative enterprises – SSTU's and technopark's structural units; innovative-technological and innovative-productive centres and other associated innovative alliances, and operating as technology transfer centres and testing and certification firms, engineering centres, and a patent office and a centre for innovation managers. The production and sale of science-based products is undertaken through centres established by SSTU with large Saratov industrial companies, and through small innovative firms. One of the most effective is an integrated research and production complex, 'The Institute of Precise Mechanical Engineering', linked to the Saratov bearing plant. This centre works as a technology transfer centre and a centre of training high-qualified specialists. Within the centre the teaching process is integrated with R&D and the serial production of high-tech products and technologies.



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### 3. The role of universities in the formation of the region's innovation infrastructure

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## Introduction

The last decade of market reforms in agriculture in the Russian Federation revealed the inefficiency of the recognized model of a self-contained market. Nowadays it is acknowledged that various market models exist along with the traditional one; one of these is the innovation model.

The prolonged period of transition to a market system in the country has to a great extent paralyzed its industrial and innovation potential, and its development was postponed for many years, not ranking high enough in the priorities for government concern.

Sometimes it was carried to the point of absurdity, when long-term programmes for the socio-economic development of whole regions (for instance, of the Rostov Region) included neither education nor scientific development issues in the territories, nor issues about how their activities could contribute to the process of regional economic development.

The Rostov Region (RR) as an administrative unit of Russia was formed on September 13, 1937. The population of 4.4 million people, two thirds of it being city residents, inhabit a territory of 100.9 thousand square kilometres. The region comprises 55 major political territorial units, that is, 12 cities and 43 rural regions. As compared to other structural units of the Russian Federation, the region is known for its scientific resources, industrial and financial capacity.

The economic development of the region is based on the following factors:

- its good economic-geographical position: the gateway to the North Caucasus and Trans-Caucasian territories;
- availability of natural resources;
- historically favoured conditions for development;
- extensive labour market;
- well-developed transport infrastructure.

The leading role in the structure of the economy belongs to the fuel-energy industry, engineering industry and the building and food industries, which provide 80 per cent overall output. The region also possesses such well developed areas as ferrous and non-ferrous metallurgy, woodworking, pulp and paper industries and civil engineering. A key role in Russia is taken by heavy helicopter engineering, manufacturing of navigation equipment systems, oil

production machinery and tractor cultivators. Many enterprises of the region are of all-Russian importance, being the only or the largest producers of certain kinds of products in the country. The region's plants and factories produce 100 per cent of all mainline electric locomotives and steam boilers and three quarters of all combine harvesters produced in the country.

Soil resources are the main treasure of the region. In the whole structure black earth comprises nearly 65 per cent, the thickness of the fertile earth being up to 1.5 metres. Sixty-five per cent of agricultural gross output is in the sphere of plant cultivation. The region ranks fourth in growing grain crops. The Rostov Region is the largest producer of sunflowers. It ranks fifth in growing vegetables and seventh in producing meat. It has 24 regional banks with 51 branches, 67 commercial banks of other regions, more than 40 insurance companies and branches in insurance companies of other regions, and 16 investment companies comprise the financial infrastructure.

Among the structural units of the Russian Federation, Rostov Region's educational complex is the third largest after Moscow and St. Petersburg. It consists of 68 state vocational colleges (with 36 branches), 21 state institutions of tertiary education (with 34 branches), and 38 non-state tertiary and vocational institutions.

The key problem in finding a way of moving from an economic position of quasi-equilibrium to another system is to be able to adapt to radically new characteristics. It is not possible to release the creative functions of universities without reforming the inner logic and regularities of the current socio-economic processes. Such an activity demands that universities change the way they are run, not something which can be achieved quickly. Nevertheless it can cause a qualitative change in the position of universities in their environment as well as in the environment itself.

The objectives of this research are as follows:

- to clarify the role of universities in the formation of a region's new infrastructure;
- to define the fundamental principles and methods that are able to ensure that the formation of a regional innovation and development environment fits with market demands.

### **The historical overview of the problem on the regional level**

The problem of the formation of an innovation structure in the Rostov Region lies in the university's environment. The first stage dates back to the late 1980s. On the basis of a study of the experience of the formation of the Dortmund technopark and the innovation environment of Northern Rhine-Westphalia (FRG), the Academic Council of Rostov State University (RSU) defined its policy as aiming to find ways to develop innovation. The distinguishing characteristics of this period were the development of co-operative inter-university links, an extremely low level of professional knowledge and a total lack of the necessary innovation tools which could stimulate an innovation environment.

During the period 1991 to 1995, research on innovation principles began at the Don State Technical University (DSTU) and with the support of the Russian Ministry of Education. With the support of the DSTU the Northern Caucasus Innovation Centre of the Higher School (NCIC HS) was formed. Higher education institutions (HEIs) were gaining experience in practical innovation activity. The NCIC HS formation has revived innovation processes among the universities of the region and led to the practical realization of a series of university innovation projects, including the formation of the 'Taganrog' technopark, a business-incubator in Shakhty and a

number of other ventures. However, this period was also characterized by such negative effects as a substantial decrease in the co-ordination of the universities' activities, an almost total lack of concern from the regional government in innovation processes development, industrial stagnation in the region, and an almost zero interest from financial institutions in innovation activity. From 1996 until 2000 the concern of HEIs, industries, the financial community and the regional government in innovation was so diverse that any kind of innovation activity was unprofitable, as none of them was accompanied by a full-scale integrated development of the necessary infrastructure or a favourable regional environment. Many HEIs planned to create internal autonomous innovation structures only.

During the period of market reforms the everyday links between HEIs with the regional government were not established. And the heaviest tax penalties, which weighed down on enterprises of the Rostov Region in 1997 (innovation enterprises being amongst their number) turned many people away from business activity. By the end of the period the Ministry of Education had launched a reorganization of its innovation structures support system. The NCIC HS gradually concentrated its efforts on information system development and on the formation of telecommunication networks for hi-tech business in the university, as well as on the development of new educational technologies for small-scale enterprises in the sphere of HEI's science and scientific facilities. Finally, in 2000 NCIC HS changed its name and structural status into the Northern Caucasus branch of the Russian State University of Innovative Technologies and Business.

The crisis in innovation activity has shown that the only way to ensure stability of development is by providing special legislation. Such legislation must concentrate the efforts of the key units of the innovation infrastructure of the Rostov Region and shape regional

innovation policy in such a way that both the institutional and co-operative ambitions of universities can be fully realized.

At the beginning of the year 2000 the process of integrating key units of the information infrastructure at regional level began as a result of the complementary activities of inter-university and industrial associations. A High Technology association involving the government of the Rostov Region, the cities of Rostov, Novocherkassk and Taganrog brought HEIs and industry into partnership. In February 2000, the Board of the Ministry of Economics, International and External Economic Links of the Rostov Region supported the South Russian Centre of Academic Mobility as an integrated project to implement new approaches to the development of innovation activity in the Rostov Region.

### **The balance of HEI policies in the region**

During the last decade the main proposals for the development of a scientific-technological service were argued for by the HEIs. But the results turned out to be rather modest despite active support from the Russian Ministry of Education. The main reason for that was the inappropriateness of the ways of approaching the problem, or the universities' overestimation of their role in taking on such a challenging regional task. It is only in some regions of the country that HEIs have charged themselves with these roles and in those very regions a very great advance in innovation development is being made.

During the last decade three lines of innovation policy implementation became apparent in the higher education system:

- the independent policies of single universities;
- the Russian Ministry of Education guideline for forming regional support centres for the development of scientific-technical enterprise in universities;

- a universities' co-operation policy implemented by regional associations of universities.

At the beginning of the 1990s (1990-1993) the co-operative inter-university linkages for undertaking regional development were at quite a high level. In May 1990 the Rostov-on-Don HEIs formed the 'Internauka' Centre for International Cooperation in the field of education, science and technology. In 1992 the HEIs of the Rostov Region joined them. At that time there was very little deep knowledge and experience of forming policies for the development of innovation processes in the new socio-economic conditions. The formation of such a centre reflected simply a subconscious awareness of the need to combine efforts to create new tools for the development of an innovation environment at the regional level. The financing of RSU and the 'Internauka' Centre was in the context of the 'Universities of Russia' project and provided substantial support for the development of an understanding of the mechanisms to set up innovation processes and to enable them to function in a new environment. The following features were characteristic over this period: a balance between the institutional concern of the Rostov Region HEIs and the concern to set up an organization for co-operation as well as concern at the federal level. The latter was concentrated mainly on creating mechanisms for technology transfer within or between HEIs. The main weakest point of this period was bringing together the potential of the universities without including the potential of industry and of the key structural units of the regional innovation infrastructure.

By the end of the period the prestige of the inter-university association was high but it was obviously not sufficient to develop a full-scale co-operation process and, most important, HEIs did not possess a suitable methodology and mainly gambled on subjective models. During this period the regional government did not respond to innovation initiatives and had no innovation policy of its own; this

was mainly because the university environment failed to provide it with the necessary reliable methodological base.

In 1993-1994 the governmental policy of the Russian Federation State Committee for Higher Education changed significantly and funds were concentrated on creating a network of regional educational and scientific centres for business innovation (the so-called 'flower petals' model). During this period the rectors of the majority of the Rostov Region HEIs signed a proposal addressed to the Russian Federation State Committee of Higher Education. In terms of the co-operative interests of the region's HEIs they proposed to unite the basic elements of the State Committee's new policy with the operation of the Rostov Region's inter-university co-operation organization. However the Russian Federation State Committee of Higher Education preferred the proposal from Don State Technical University which had created the Northern Caucasus branch of the Centre aimed at assisting the Innovation Centre of the Higher School (NCIC HS). As a result the strategies of the inter-university association were at variance with those of the regional representatives of the Russia Federation State Committee for Higher Education, and the inter-university co-operation policy, developed in Rostov, was not granted federal financial aid to develop the infrastructure for innovation activity support.

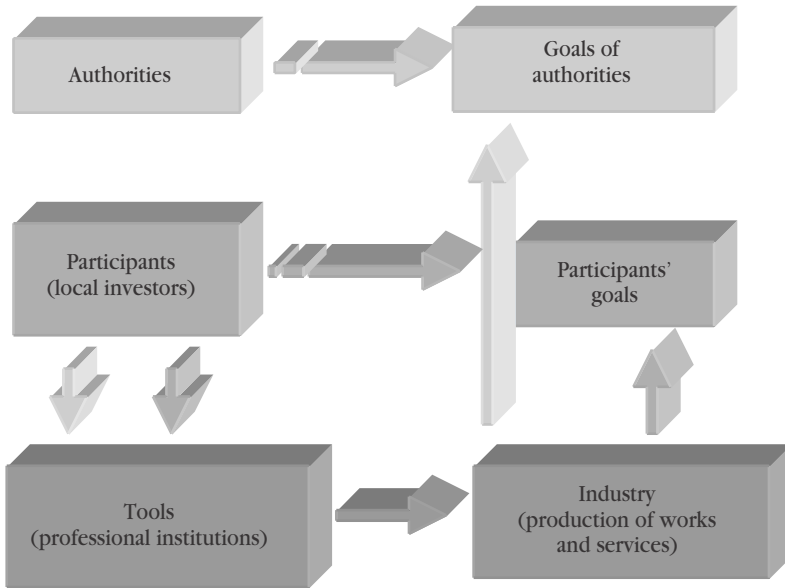
By 1996 NCIC HS had started its infrastructure formation, using the complementary interest of the HEIs. The Taganrog technopark, the business-incubator in Shakhty and a number of other structures were established. The Taganrog technopark possibly suited the methodology of the territorial innovation structure best because it reflected the interests of the HEIs, industrial enterprises and the city government. However the NCIC HS, which developed infrastructure support for innovation activity and received a regular income from



the federal budget, and the Taganrog technopark, which took practical steps to stimulate innovation activity, were restricted in their development because of the lack of an innovation environment in the region. By 1996 the positions of NCIC HS and the inter-university 'Internauka' Centre became closer to each other, though NCIC HS was more attractive because of the funds it had available and because it was therefore more stable. But the 'Internauka' Centre was gaining authority in the Rostov regional government. For instance, the 'Internauka' Centre was charged with devising a regional innovation programme for the Rostov Region. A separate innovation proposal which it had developed was included in the socio-economic development programme for the Rostov Region for the period up to 2001. But the innovation environment of the region seemed unstable and unable to make progress and none of the organizational elements received funding. As a result local government was not linked to the powerful scientific and technical potential of its local institutions. A mismatch of policies amongst HEIs resulted in overlaps, sometimes causing paralysis in the development of innovation processes. The capacity of an individual institution to affect economic development, even when its mechanisms of technology transfer had been stabilized, was extremely limited. Weak links with the local government could not provide the required support for the proposed innovation projects and programmes.

### **Convergent socio-economic patterns**

Patterns of social and economic administration must be developed to ensure interactions between regional governmental systems and the environment. These interactions should form convergent patterns as set out in *Figure 4.4*.

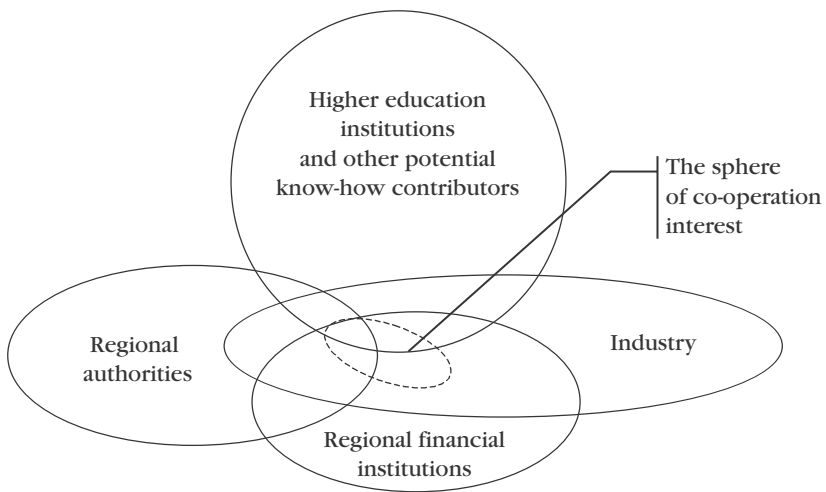
**Figure 4.4 Convergent patterns of socio-economic decisions**

These patterns possess a high degree of invariance for devising and analyzing any project irrespective of its spatial and temporal scale and the degree of its generalization. This is why it is possible to use these patterns, appropriately adapted, as a methodological basis for addressing different projects. But they are even more appropriate as a mechanism for creating a strategy for the social and economic development of large regions. Defining interests as goals and working out the best direction for regional development also triggers mechanisms of support from local investors for the processes that are involved, including practical, legal and financial assistance.

The establishment of priorities to be taken into account when implementing a complex project creates closer co-operation between

the collaborating partners. Each of them pursues its own aims, which sometimes prove to be essentially different from those of the other key units of the regional innovation infrastructure. The field of interest lies at the point of intersection of the interests of the partners (see *Figure 4.5*).

**Figure 4.5** Intersection of interests of the key structural units of the regional innovation infrastructure



The development of innovation processes was previously based on the individual interests of the partners. This approach turned out to be methodologically erroneous, as with such an approach the whole burden of the activity fell on a single partner instead of on a larger co-operational unit. A single partner does not have the capacity to obtain the necessary organizational, legal and financial support which is why organizations set up to stimulate innovation activity have become socially and financially unstable, and develop very slowly. All over the country we can observe situations where

innovation structures (such as technoparks, business-incubators, etc.) were formed within the structures of HEIs or as separate enterprises with no regional interaction and interconnection established. The convergent pattern is well-balanced and any element removed can make it unstable or ineffective. For example:

- defining goals and approaches to innovation activity without balanced organizational and financial support makes the activity ineffective because they will not lead to practical implementation;
- working out organizational and economic conditions without a clear-cut determination of strategic goals, directions and initial parameters, makes it impossible to attain major goals in the region's innovation development;
- the independent development of innovation activity within separate structural units with no regard to collaboration for all-round projects of development means a waste of time, money and resources;
- a lack of professional tools makes it impossible to provide the necessary linkages for a fully-fledged development of the innovation infrastructure and to direct it towards desired priorities.

The innovation doctrine must be co-ordinated with the economically-based legislature, as well as with the normative parameters of the corresponding social and economic environment.

### **The Northern Rhine Westfalen (NRW) experience in the Federal Republic of Germany (FRG)**

We have based our research on the experience obtained by the Northern Rhine Westfalen (NRW) for a number of reasons:

- the long-term partnership with the Rostov Region;
- the large number of innovation centres in Germany;

- the authors studied the experience of NRW working in technocentres and technoparks in Shwert, Hamm, Dujsburg, Munster, Iserlon, Bohum, Dortmund, etc. The authors took part in a joint project between the Rostov Region and NRW including a TEMPUS project on the modernization of the administrative system of Rostov State University. These activities enabled the authors to gather and process information on practically every technocentre and technopark and to analyze the establishment of the innovation environment in NRW.

The technological centres in NRW were founded on the basis of regional initiative; each of them has its own history and structure. The variety of centres is an extra prop for the area's technological infrastructure. Taking this into account the draft law: '*On the innovation activity in the Rostov Region*', deals with regional policy based on the integration of regional interests rather than on a subdivision amongst separate structural units. This approach is essentially different from that of the Ministry of Education and of the individual universities in the region. The law envisages a 'flower' pattern being developed, that is a many-sided infrastructure for support. This is quite a different approach from the widely spread notion that regional innovation policy originated in the activities of separate universities of the region. Regional innovation policy and the innovation policy of HEIs have an essentially different, incompatible basis and this was the main reason for many methodological mistakes in the way universities undertook innovation projects. Technological centres in NRW were first founded within HEIs in 1984, to increase the existing potential for scientific and technological innovation (15 centres by the end of 1996). The region's investment in infrastructure policy gave rise to centres both in industrial (1996, 19 centres) and rural regions (1996, eight centres) with no HEIs in their locality. Thus a widely spread system of technological centres was formed in NRW,

occupying the area from the Ruhr region to Unn/Hamm and Aachen, regions which are in great need of modernization.

Thus, the realization of regional innovation, while it is based on the scientific and technological contribution of HEIs, can go far beyond these boundaries. It is very important to form a regional innovation environment on the basis of universities, but it is not the only possible variant. Besides, the innovation policy in NRW has gradually become involved with the reconstruction of the socio-economic infrastructure as a whole and has proceeded far beyond the universities' field of interest acting on their own.

The mechanism for transmitting support from the technological centres in NRW is a part of one of the stable convergent decisions. Balanced convergent decisions are preferable because they make setting up an integrated system involving all the participating partners possible.

The results of the innovations in North Rhine Westphalia speak for themselves. Since the beginning of the 1980s until 1996 (which is the approximate problematic period in the Rostov Region) the innovation programme of NRW has resulted in the creation of 50 higher education technology transfer centres for tertiary institutions, commercial and trade banks' consultancy centres; 31 research and development centres for enterprises; 26 technological agencies, 62 technological centres and parks; a centre of innovation and technology ZENIT in Mulchain. The above-mentioned comprises the total innovation infrastructure supported by the Government of the NRW, and created the basis for the further dynamic development of the regional innovation environment.

By June 1996, 1658 new enterprises had been registered, with 740 companies being described as fully independent. According to

the 1996 survey, out of 100,000 new job places in Germany, 30,000 were created in North Rhine Westphalia. There were 336 technologically oriented companies in 1996, compared to 555 in all the other *länder* in Germany.

### **Creating the regional innovation environment**

The formation of new forms of business undertakings in the field of high-tech production requires a careful study of the following:

- setting up the innovation mechanism together with marketing the scientific and technical output;
- the market for intellectual property;
- the availability of investment from within the community to support the innovation activity of scientific and technical groups;
- the general innovation environment and the structure of the regional economy surrounding technological units;
- the industrial and market receptivity to scientific and technological output within the country's economy;
- the security of intellectual property both in home and foreign markets.

### **The most common obstacles to the development of the regional innovation environment**

In most cases, attempts to create a complete and functional innovation structure at the local level faced certain serious problems. One of them was the absence of a methodological basis to form a stable social and economic platform for the innovation process to proceed effectively. Different social and economic units and structures frequently tried to find a radical solution to this problem, but the situation was not appropriate to attract innovation so all attempts were fruitless and patterns of behaviour did not change. If

we try to analyze the innovation environment, we can see the following obstacles to its development:

- unco-ordinated activity by local authorities, industries, banks and HEIs;
- lack of a general strategy, devised and accepted by all institutions and structures located within one administrative unit;
- the absence of an infrastructure for building a service market in the area of science and engineering;
- the absence of financial guarantees and copyright safety as far as innovation projects, programmes and companies were concerned;
- the pressure of taxation, which destroyed several innovation companies at the very beginning of their active development;
- the lack of regular administrative support for any kind of innovation activity because the latter failed to evoke any strategic interest and was not included in the list of the basic budget items for the region;
- the natural high risk involved in innovation activity which prevents systematic investment;
- the absence of special mechanisms to insure against risk;
- the absence of a properly functioning mechanism to turn know-how produced from innovation activity into the property of producers and to attract further investments from customers;
- the lack of access for new products even to the local market of the city and the region.

### **Co-operation between HEIs, industry and the regional administration**

The participants in regional co-operation projects must define targets which are of great importance for the region's social and economic life as well as for the participants themselves. The innovation infrastructure of any region must include HEIs, industry,



the regional administration and sources of financial support. So the first step in building such an infrastructure must be to find ways for their fruitful practical interaction. In 1999, having analyzed the social and economic nature of the innovation process locally and internationally, the 'Internauka' Centre changed the direction of its innovation policy. It gave up devising new market mechanisms to support innovation and switched to a policy of creating a clear and open local innovation environment, aiming at achieving a stable legal status on the same level as federal units. This approach was accepted in industry. A new 'High Technology' association was created to put this into practice. Co-operation between these two structures gave considerable practical results. The next step was to balance the methods of interaction with the local administration. In 2000, at a meeting of the Ministry of Economics International and Economic Cooperation of the Rostov Region, members of a new committee were appointed with the terms of reference to develop: an innovation infrastructure for the Rostov Region and the legal documents to support the infrastructure. The local administration retained the right to co-ordinate the development of the innovation programme for the region. The Rostov State University for Economy, in co-operation with the 'Internauka' Centre, began working out a bill on *'Innovation activity in the Rostov Region'*. This work was carried out with the help of Rostov State University, Don State Technical University, Rostov State University of Railway Engineering, the 'High-Tech' Association, the Rostov Regional Administration and the Rostov-on-Don Administration. By the end of 2001, the bill had been introduced into the Duma of the Rostov Region. Subsequently the pace of activity has slowed: One of the most important problems yet to be overcome is the universities' failure to co-ordinate their activities.

## **Basic approaches to the description of innovation models**

As research has shown, a region of the Russian Federation is the unit best suited socially and economically to complete all the integrated tasks required for innovation development. It is also clear that we need to model the innovation infrastructure itself as well as the possible economic patterns of its operation to estimate the effectiveness of the models being developed and to find ways to optimize them.

Working on a regional basis has many advantages. A particular region has high scientific and technological potentialities and a well developed industry; it can also generate loan capital accumulated in the region. The local administration is able to exercise its powers of legislation and regulation (taking into account its financial and economic resources) in order to let the local innovation infrastructure be built and developed, taking it as one of the social and economic mechanisms of the region.

There are three stages in the development of a regional innovation process:

- devising a strategy: investigating the region's innovation potentialities; elaborating policy, strategy and principles for the region's innovation development; defining the major trends of the region's social and economic development; building a model of innovation infrastructure; defining its fixed and other assets; and introducing the proper legal documents. As a rule, it takes one to two years to go through this stage, depending on the extent to which the local administration is ready to accept the change;
- structural and economic stabilization: organizing the local infrastructure; assembling the floating assets; attracting external investments; developing marketing, consulting and information

services systems to optimize the mechanisms through which innovation companies decide on priorities for investments; developing a set of products and expertise which have a high marketing potential to introduce into mass production; restoring the copyright guarantee system; expanding external links and interactions including international links. It usually takes three to five years to take these steps;

- returns on investment: the stage of integrated stabilization of all the economic and structural mechanisms built into the innovation process during the previous stages.

This process can be expected to take about 10 to 15 years to reach fruition when the social and economic effectiveness of the whole programme brings high-tech products to mass production.

An innovation infrastructure model should not be just a mechanism for regular local support for the innovation process, but a new item in the region's structure and budget. It should be seen as an absolutely new mechanism capable of providing the region with economic stability through the creation of a substantial layer of medium and small innovation companies with their own social influence and their own impact on the region's life.

As the criteria for the model's effectiveness we may take the following:

- the time taken to go through all the stages of a local innovation infrastructure's development and of the return on initial investment;
- the time required to devise a budget when projects are to be introduced;
- the increase in investments in production based on new knowledge;

- the increase in the number of innovation products in local and external markets;
- a reduction in the region's imports as a result of an increase in local production based on locally generated know-how;
- the increase in turnover of the local financial market;
- the number of new jobs created;
- the improvement in the local environment.

The HEIs can add to this list by showing the increase in funds they have invested in new research programmes.

### **Economic patterns of an innovation sphere**

In the section above we have made an attempt to describe the general approach to the task of modelling the process of building up an innovation sphere in a region. When applied to practice, the system of criteria becomes less effective, since many of these characteristics are difficult to estimate properly and accurately and the processes mentioned have not been studied to the full extent. However, this fact cannot prevent us from identifying certain patterns of behaviour in order to find the inner regularities of the process and model definite elements of the local innovation sphere. We analyzed one such pattern, while modelling the basic elements and units of Rostov regional innovation infrastructure and building up an integrated economic picture of the region's innovation development, and informing our approach with reference to the appropriate legal support in Rostov Region's legislation.

The basic concept of this pattern may be formulated in the following way: The innovation sphere is to become one of the key items of the local budget. The funding for the growing innovation infrastructure which is to be provided by the local budget, is repaid

through the outcomes of the research projects, i.e. the innovations and new production which arise out of that research.

An independent innovation fund is supposed to be created to support the proper functioning of all innovation mechanisms. This fund's activity is to be co-ordinated with all the legal and functional interrelations within the infrastructure. The major point here is to create a definite source of funding dedicated to the region's infrastructure which is to be differentiated from the other units, and which will create a stable organization and well-balanced assignments. It is also crucial to make different units and authorities share the right to assess projects and make the decisions on funding them in order to protect the innovation mechanisms from abuse. All the legal documents, regulating the terms of innovation producers' interaction, and outlining the requirements a company must satisfy to enter the innovation infrastructure and receive the support it provides, must be applied and a criterion in the decision must be the degree to which the company's plan fits with the major policies for the region's development.

The innovation fund is intended to be one of the basic features of the innovation infrastructure and its mechanisms are of great importance for stabilizing and optimizing the whole innovation programme. The competition we are going to face in the innovation market will be severe so it is essential to create conditions in which the promotion of local innovation will receive funding in sufficient time and quantity to carry out the project. None of the normal funding mechanisms can be adjusted to meet these requirements properly, as they work to different targets and do not give top priority to innovation questions.

## **Legal support**

The above regulatory bill is intended to point up all the legal, economic and structural terms of innovation activity in the Rostov Region, to regulate all the relations between the participants of innovation process and local administration and to outline the ways and means of carrying out innovation policy in the region. The bill has been devised and approved by the local administration of Rostov-on-Don, Taganrog, Novochercassk, by the 'High-Tech' Association, by the Rostov Region Rectors' Council, by HEIs in the region and by the 'Internauka' Centre.

The bill has five clauses, dealing with:

- the principal provisions (providing basic definitions; the general legal basis of innovation activity in the Rostov Region; and characteristics of the principal objects, participants and products of the innovation sphere);
- the legal and economic basis of innovation activity (determining rights and duties of all the participants of the innovation process: rights and duties of the investors; the relationship between the participants in innovation activity; the principles of intellectual property protection in the course of innovation activity; legal guarantees on regional legislation given to the participants in innovation activity; capital investment protection; the order of actions to stop or hold up innovation activity);
- innovation policy in the Rostov Region: defined as "to turn the Rostov Region into a powerful industrial and agricultural centre, with its own intellectual and investment capital, with a well-balanced and effective mechanism of turning innovation into industrial, agricultural and small business improvements, in order to produce local competitive products, to attract further investment in the region, to increase employment, and to solve social problems

- of wide range". In this clause one can also find the targets and the key spheres to carry out this innovation policy as well as the exact Innovation Programme for the Rostov Region;
- the mechanism for carrying out innovation activity in the Rostov Region: forms and methods of regional regulation; innovation activity management; the administration's functions; the mechanism of testing projects; methods of funding innovation activity from the regional and the federal budgets as well as non-government funding, including private investments; the interaction between federal, regional and local administrative bodies; the interaction with HEIs; the regulation of foreign innovation companies' and foreign investors' activity in the Rostov Region; and the basis and mechanisms of state support for innovation activity in the Rostov Region;
  - final issues (covering participants' liability; how the law is to come into effect and the adjustment of other legal documents to it).

### **Conclusion**

In the Russian national economy, universities have the task of creating new knowledge, information and models to keep industry effective and competitive. The universities' role is to carry out research. Researchers have tried to devise and test not only models typical of a traditional economy, but also some other market models, such as the innovation model of economic development. This article describes the basic principles of building up an innovation model. It also explains that Russia has to go through a long evolution to establish effective modern markets. This process can be carried out only if there is integration and co-operation between regional authorities, the world of science and research, industry and the financial system. Primitive market models must be replaced with new integrated structures which bring together all the sectors of the national economy. The practical application of all the above-mentioned

principles and methods combined with regular monitoring of their adequacy to present conditions can guarantee the development of the local innovation sphere as one of the key items of the local budget. By devising and introducing know-how into social and economic fields, universities can not only change but change radically the way they operate within the social and economic environment of the region, making them much more economically effective.

#### **4. The role of education in regional policy in the Ivanovo region**

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*Oskar Iosifovich Koifman*, Ivanovo State University of Chemistry and Technology (ISUCT)

*Vladimir Nikolaevich Nyzhdin*, Ivanovo State Power University (ISPU)

*Sergey Viktorovich Fedosov*, Ivanovo State Architectural-Building Academy (ISABA)

The territory of the Ivanovo, Vladimir, Kostroma and Yaroslavl regions traditionally belong to the Verkhne-Volzhsy region. The industrial potential of the area is represented by textiles, machine building, chemical firms, energy and power.

The region has 18 state higher education institutions (HEIs) which not only prepare people for employment in industry, agriculture, medicine, education and the service industries, but at the same time are the scientific research centres with their schools and traditions. The main educational centre is Ivanovo where there are two institutes of the Russian Academy of Science, seven institutes in HEIs which pursue postgraduate and post-doctoral study and research, the Russian Centre for History and Criticism of Intelligentsia and the Verkhne-Volzhsy Regional Centre for Academic Mobility.



The importance of HEIs and particularly the universities in small subsidized regions is their role in the educational politics of the region and in science and economic development. The Ivanovo Region in this connection is no exception and is unique because the main potential of higher education is represented by a group of universities and academies which are controlled by the Ministry of Education of the Russian Federation. There are among them a classical university, a chemistry and technology university, a power university and an architecture/building academy. Such different scientific interests and educational services offer wide possibilities for using the scientific potential of higher education to solve the important problems of the region's development. It must be remembered that graduates from these same HEIs hold high posts in the region. On the one hand, this can make the task of the universities easier but on the other it can make the task more complicated because it is not always possible for them to reach a common agreement as to priorities, especially strategic priorities, with their own graduates. But looking strategically at the priorities for regional development must be of the utmost importance for administrators and scientists. The unique feature of the Ivanovo Region is that it has a higher number of staff in HEIs than in other regions with the same population.

Having such a 'strategic store' of scientific potential the most important task was the creation of a *management structure* to use it. Such structures have to provide links between HEIs, local government enterprises, and the regional government when the implementation of regional scientific-technical policies and the organization and financing of joint projects are actually planned. Strategic management, supported by human resources as a base for the organization, guides industrial activity to consumers' requests and creates a flexible regulation of the organization reflecting environmental needs. HEIs recognize the needs of the environment very clearly because they

are part of a complex of processes of co-operation. The experience of HEIs in surviving as independent and individual institutions is very important for the process and serves as an example. For example, the Ivanovo State University of Chemistry and Technology (ISUCT) earned 11.5 million roubles in 2001-2002 from non-government sources and ISABA earned 30 per cent of its funds from external sources in that year. In 2002 the consolidated budget of the Ivanovo State Power University (ISPU) will be more than 140 million roubles. At the same time we can point to the increase in HEI co-operative programmes in 2001-2002 which brought them more than 10 million roubles which is twice as much as in 2000.

### **Organization**

An association of HEI, and scientific, technical and business intelligentsia was created for the Ivanovo Region and commissioned to devise a strategy for the stable development of the Ivanovo Region with scientists from practically all the HEIs taking part as well as the Centre of Innovation of the Russian Ministry of Education and the special scientific-manufacturing organizations and laboratories in the region. The association monitors the research of HEIs and research institutes and connects them with potential customers in the region and abroad. The permanent staff of the association is six, but the real work is carried out by HEI staff in the areas which manufacture is interested in. For example, during 2001-2002 they inspected five undertakings where bankruptcy procedures were threatened or which were actually going bankrupt. The organizations concerned paid for the work and in three cases a way out of the crisis was found. It is necessary to underline that senior students from economics departments also took an active part in this work.

Many technical innovations have been achieved in the region. For example, the scientists at Ivanovo State University of Chemistry and

Technology have created new effective textile-auxiliary substances for chemical and natural fibres. The enterprise 'Ivchimprom' earned 172,000 roubles from a single customer, part of which went to the association's funds.

The economic structure in the region is flexible and varied. Co-operation between HEIs and the region consists of implementing concrete programmes and tasks through the contributions of scientists from the four universities and from the academies. Thus HEIs were awarded about 300,000 roubles in 2001 for research into environmental protection issues and about 200,000 roubles for researching issues surrounding the protection of the Volga river. Research has been carried out jointly by teams from different HEIs for great manufacturing enterprises like Ivautodor, in the field of road building and for Ivchimprom and Zavolzhsky in the fields of textile-auxiliary substances and dyes/textile factory-processing and finishing. In ISUCT, together with the Russian Academy of Science, Institute of Solutions Chemistry, research in the field of new methods of clothes' finishing which have bactericide qualities, is being carried out. This work was awarded 300,000 roubles in 2001-2002. Overall research based on regional needs originating in HEIs was awarded 2 million roubles in 2002. Some universities and academies have founded scientific-manufacturing organizations and laboratories to address particular industrial problems. The Centre for Innovation of the Ministry of Education of the Russian Federation also operates in this area and finances work on a repayment basis including joint research conducted by HEIs.

This policy, together with taking contracts from industrial plants and firms, has permitted the establishment of small experimental groups with staffs of 10 to 15 persons which undertake their own production in areas like the processing of car tires, allowing chemical modification and with the possibility of vulcanization, oligomer processing, the production of lubrications without any types of oil,

the finishing of grey flax, the production of heat isolation for heat routes and the building of industrial plants.

In 2001, in co-operation with city authorities, building industry organizations and scientists from HEIs, ISABA did research on high quality building materials and products and ecological protective technologies in building industry and the development of a typology of technical decisions in building reconstruction. The chair of atomic electrical stations together with the All-Russian research institute AES (atomic power stations) are working on computer teaching systems and equipment for AES and TES (thermo-electric power stations). Many problems in the power industry have been solved by the joint efforts of scientists, the projects being paid for from the budget of the region and the regional power system. The Institute for Improving Qualifications at ISPU together with TSENTOENERGO are providing additional professional education for the power industry. From 2002 to 2006, ISPU, the Institute of Solutions Chemistry Academy of Science of the Russian Federation (AS RF) and Special Development Design Bureau (SDB) 'Pole' are carrying out educational and science work within the federal programme; 'Integration of higher education and fundamental science' financed up to 9 million roubles.

The result of these practical partnerships is the establishment of a structure of management decision-making over a range of tasks. Strategy for the economic development of the region is starting to develop. Among the problem questions which have to be solved, however, are:

- establishing the relationships between institutional budgets and the normative base for the co-financing structure of projects;
- changing and regulating the structure of regional budgets;
- devising a structure for joint participation in regional research programmes;

- developing co-operation between regional associations and co-operative research between regional and federal levels;
- increasing co-operation with the Ministry of Education and the Russian Academy of Science in the joint development of federal-regional science-technical policy;
- developing the state's management role in competitions for projects;
- linking regional science-technical programmes with federal priorities for experimental research.

One of the most important principles of drawing up regional science-technical policies is working out normative documentation on problems such as the implementation of priorities for the scientific-technical development of the region and regional-federal, basic, innovational and applied-technical programmes. In finance, multilateral financing for the partnership basis of scientific research should be not only for fundamental but also for innovational and applied research. But most importantly the scientist-regional administration partnership must be a permanent structure which helps HEI co-operation not just in respect to regional development but in all aspects of economic development. The scientific potential of HEIs and research institutes is considerable both in strategic planning and in short-term projects. The potential for using it in this way is very much in the government's hands.

## **5. Universities' regional policy: priorities and mechanisms**

*Jury Semenovitch Kolesnikov, Alexandr Mihailovich Yurkov, Rostov State University*

At the beginning of the 21st century Russian universities are facing a situation where the parallel processes of globalization and

regionalization require university management policies which are often contradictory.

On the one hand, the processes of globalization demand measures of unification, standardization and an integration of educational programmes in response to 'signals' from the competition that is arising from a growing 'intrusion' of foreign universities into the Russian educational market. On the other, the traditions of the Russian educational system, where the national-regional and ethno-cultural component has always been the strongest influence on the educational process, dictate the need not only for the preservation, but also for a more marked and distinct positioning of the regional component of the educational system. This has created a new situation in the Russian educational environment where the imperatives of globalization and regionalization have become strangely entangled in the life of every university and where the European perception of evolutionary changes in Russian universities is even more uncertain.

In the system of regional associations, universities play a variety of roles:

- they are an important factor in population movement, attracting people to the cities;
- they are a source of intellectual and academic activity in the region;
- they are a source for the reproduction of highly qualified specialists and scientists for universities themselves, for the educational system as a whole, including schools, and for developing intellectual leaders;
- they are producers of social-educational and socio-cultural services for the region's population;
- they are producers of scientific products and expert and consultative services;

- they are keepers of ethno-cultural consciousness, values, traditions and of the spiritual culture of the nations living in the region.

The strategic development of contemporary universities is based on the enrichment of their social functions as scientific-educational establishments having a high level of integration with the needs and socio-economic interests of the regional society, of businesses and of local administration. Universities are an intellectual resource of regional development, and any decline in their scientific schools is irrevocable. In regions of Russia where local authorities actively utilize the scientific and educational potential of the universities to solve social and economic problems and to address the strategy and tactics of economic reforms, regional investment and innovation policy, and where universities receive organizational, economic and legal support from the local state authorities, universities keep their high educational standards and rank well in the world, thus creating intellectual potential for the economic and cultural development of Russia. This is confirmed, in particular, by the experience of co-operation in creating a competitive regional economy between the Economics Department of Rostov State University, the North Caucasian Scientific-Research Institute of Economic and Social Studies and the Rostov regional administration for economic and social strategy development.

Between 1996 and 2002 the administration, together with scientists of the department and the institute, held annual scientific-practical conferences on economic policy problems in which representatives of authorities, business and the public participated and where joint decisions concerning priorities in investment, structural and financial policy were made. On the instructions of the Ministry of Economy, Trade, International and External Economic Links, the institute has developed concepts and mechanisms of economic policy realization in the Rostov Region, methods of

strategic planning for municipal establishments and a number of business projects of economic stabilization in problem regions (East Donbass coal extraction regions, Millerovsky region, etc.). Between 2000 and 2002, by orders of the Rostov regional Ministries of Education and of Labour, the university carried out a number of significant regional projects in the area of forecasting the development of an educational services market. In fact, the university has become the methodological centre of the region in market research for educational services, the study of young people's behaviour in the labour and educational services market, and the demand for specialist manpower for public and private enterprises. Five staff of the region's HEIs have defended their theses from this research, two monographs have been published and a project for introducing a university marketing service has been established. The co-operation of scientists and regional government bodies have raised the quality standards of regional management in general and of municipalities in particular. At the same time, this work has doubled the amount of research in the department and at the university, renewed equipment and raised the qualifications of staff.

Thus, in the context of reform processes, the university's regional policy aims to:

- broaden the university's clientele and positioning of economic services in the regional goods and services markets;
- achieve a leading position in the implementation of the economic, scientific and technological regional development strategy;
- achieve competitiveness in national and international scientific products, technological innovations, social programmes, educational markets and a high graduate mobility level in the labour market.



That is why one of the state strategy's basic principles of university education management is support for both the global and the regional functions of universities, for the provision of relative university autonomy, their academic freedoms, the broadening of their economic activity and for them to attract private investments and financial resources from industry, business, regional bodies, foreign investment companies and other external sources. As the experience of the universities of the South of Russia shows, the university strategy towards regionalization includes:

- considering the ethno-cultural specificity of the region's population and the level of its socio-economic development;
- considering risk factors in regions with special socio-economic conditions of development, regions with an excess of labour power, regions with an over-commitment to the defence industry, and economically depressed regions;
- the transition of some branches of higher educational modernization to the regional level (admission, graduation, marketing innovations in the specialist training sphere, course structure, etc.);
- the creation of special development programmes for HEIs, including universities, in regions with significantly different conditions (conversion processes, ethno-oriented processes, frontier regions, etc.);
- the implementation of special measures directed towards the integration of university education into the educational, economic and legal environment of the region, including the creation of co-operative mechanisms between universities, other higher educational establishments and the civil authorities; assistance in the development of the division of labour between HEIs; and the creation of an integrated educational system in the region.

Thus, the main purpose of a university's regionalization strategy is the creation of organizational, legal, economic, scientific and methodological conditions for university development as regional educational, scientific and cultural centres and the creation of scientific, educational and socio-cultural units, such as university associations, university corporations, educational-scientific-technical units, and so on.

Contemporary views have significantly broadened universities as educational, scientific and socio-cultural establishments maintaining the diversity and unity of national educational systems and constantly reproducing educational traditions and innovations. The Rostov State University specialists have examined 28 universities and analyzed their experience of service function development in market conditions. They have devised a programme to develop the work of universities as regional educational, scientific and cultural centres, including methods and strategies of co-operation with regional educational systems, industry, local authorities, and ways of obtaining financial support for universities from local budget and non-budget sources, competitions and grants, governor's premiums, student allowances, etc. They have also made recommendations for the optimization of a regional educational services market, and made forecasts of the demand for universities' educational services. Every university in the region has addressed and adopted new organizational, structural and poly-functional university management models oriented to forms of contemporary autonomy and self-government and to market mechanisms. However, this development and improvement in the mechanisms of university regional policy realization is linked to the need for a further broadening of universities' economic rights and freedoms, in particular:

- giving HEIs the status of full-right participants in the educational and innovation products and services market;

- the use of property and the legal confirmation of its diverse structure and methods of use;
- a transition to a compensatory financial strategy at federal, regional and municipal level;
- a search for new mechanisms of interaction with federal, regional and municipal budgets;
- the creation of marketing strategies in competitive regional markets.

In every significant economic region, in every Russian city where there is a university, an infrastructure has been created which integrates the educational, scientific, cultural, and pedagogical work of scientific, industrial and educational organizations such as environmental protection centres, informatics and new technology centres, innovation funds, information systems and databases in the educational field, historic-cultural and natural-scientific museums and reservations and teaching complexes. In the process of carrying out Russian higher education's modernization many effective forms of vertical and horizontal management integration of different types of educational establishments – universities, schools, gymnasiums, colleges, lyceums – have been established and introduced. Thus a radically changed social environment and the adjustment of university management to derive benefit from the potential of these integration processes has created a new university management model.

This model is increasingly acquiring not a 'headquarters' management model (which is the standard management model in the contemporary university), but a 'matrix' management system where there is no strict functional division, but the structures are oriented towards achieving a final prioritized outcome, whether an educational and programme module, a financial programme for a higher educational establishment, or a marketing programme.

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## **5. INTERNATIONALIZATION AND ACADEMIC MOBILITY IN RUSSIAN UNIVERSITIES**

### **1. International co-operation at a modern university: the challenges of the new century**

*Igor Zornikov, Voronezh State University*

The fundamental changes in the economy and social life that have taken place in the past 10 years and the rapid development of science, information and communication technologies have set new goals for the world community. In these conditions, higher education and research have become factors of social change, and important national and world priorities. Solving various problems on national, regional and global levels demands serious changes in the system of higher education, perhaps to its very paradigm. As was noted in the Declaration of the First World Conference: 'Higher education in the twenty-first century: vision and action' held by the United Nations Educational, Scientific, and Cultural Organization (UNESCO), higher education faces grand tasks demanding its radical reorganization and improvement, which have yet to take place (UNESCO, 1998).

It is obvious that national systems of higher education cannot be developed without global processes and tendencies and compliance with the needs of the world's labour market. Many scholars and politicians believe that in the twenty-first century it will be impossible for the higher education system of any country to develop independently and still provide education that meets the requirements of the post-industrial informational society. Therefore, the sustainable development of the country would also be impossible without international co-operation.

### **Internationalization of higher education is today's reality**

Intense integration processes occupying all spheres of social life demand a strengthening of the international component in modern specialist training. In the documents of the First World Conference on Higher Education it is emphasized that “*higher education should be regarded as a public good, and that international co-operation and exchange are the major goals for higher education development in the entire world*”. (UNESCO, 1998)

Challenges of time and the peculiarities of the international environment lead to new trends in higher education. One of the most important trends is the growth in the number of people with higher education due to the ever more important role of research in industry and society. Higher education is becoming more popular, and the number of students is steadily increasing. In 1960, according to UNESCO, the number of students in the world was 13 million. Today it is 100 million. There are more than 14 thousand institutions of higher education in the world. Another important trend in higher education is *diversification*; a third is the *internationalization* of higher education.

There are new requirements for specialists, specifically for graduate mobility, the quality of their professional knowledge, language skills, and knowledge of new information technologies. Statistics show that the number of students studying abroad has grown from 920,000 in 1980 to 1,550,000 in 1996, and according to some sources this number has now reached 2 million.

The most important reasons for higher education internationalization (Yelland, 2000) are the following:

- political: democratization of the world community and the development of integration processes in the political and social spheres;

- economic: globalization of the economy, technologies and the needs of the labour-market;
- cultural and ideological: growth of international openness and developing dialogue between national cultures;
- academic: the international nature of scientific knowledge, the universal basis of education and research and the development of international quality standards;
- informational: new information technologies, and global networks.

On the supranational level the process of internationalization is revealed in the similarities of general strategies and principles of higher education development around the world. This can be seen in the education policies of UNESCO, the OECD (Organisation for Economic Co-operation and Development) and the European Union. In the Declaration of the First World Conference 'Higher education in the twenty-first century' held by UNESCO it was emphasized that, to improve in quality, *"higher education should acquire an international dimension"*.

Having studied the international trends, analyzed findings from the best educational knowledge and experience of different countries, and defined new functions and requirements for higher education, UNESCO initiated the development of recommendations on internationalization, and the creation of a legal basis for international co-operation in the sphere of higher education. The universal notions of academic freedom and democracy, UNESCO's and the Council of Europe's declarations, constitute the basis for these processes. Gradually the 'common rules of the game' are being developed. Although UNESCO-ratified recommendations and regulations are not obligatory, more and more countries and universities follow these rules. Many of the UNESCO recommendations were used in developing the 'National Doctrine of Education in the Russian Federation'.

Internationalization is an objective process of regular interaction and co-ordination of national systems of higher education. It is based on common goals and principles. It responds to the needs of the world community and represents the progressive tendencies of the new century. Universities can respond to the global challenges of the twenty first century only with co-ordinated joint activities.

### **The European area of higher education**

The most striking examples of internationalization are the processes taking place in higher education in EU countries. In the European Union a complex policy in higher education is being developed and implemented, supranational institutions are being established and a unified European system of higher education is under development. An important feature of EU education policy is the interaction of supranational institutions, primarily the EU General Directorate on Education and Culture, with national organizations, while at the same time creating unified European information and co-ordination structures and developing and financing common European educational programmes.

The programmes involved in financing academic mobility are: Tempus, Socrates/ERASMUS, Copernicus, Lingua, Socrates and Leonardo da Vinci. Russia is eligible for some of these, for example Tempus/Tacis which supports co-operation between Russian and European universities, academic mobility, joint research projects and the institutional development of universities. In 1993-1999 Tempus financed more than 300 projects, including 70 projects on university management, the budget totalling more than €70,000,000. Grants were awarded to 120 universities from 60 Russian cities (Ditter, 2001).

The distinctive feature of the most recent years is the joint projects between European countries within the framework of the Bologna

process. This activity is aimed at creating *a European area of higher education*, where “national identities and common interests can interact and strengthen each other for the benefit of Europe, of its students, and more generally of its citizens” (*Joint Declaration*, 1999). In the Sorbonne Declaration (May, 1998), the Bologna Joint Declaration of the European Ministers of Education (June, 1999), in an official statement ‘Shaping the Future’ adopted at the Salamanca Conference (March, 2001), and in a communiqué from the meeting of European ministers of higher education (Prague, May, 2001), common goals, basic principles, and the main directions of national higher education systems development and European higher education area creation were formulated.

To create a European area of higher education and to increase the international competitive ability of the European system of higher education it is proposed:

- to adopt a system of compatible degrees, facilitating academic and professional acknowledgement of courses and degrees, and providing opportunities to work in any European country;
- to adopt a system based essentially on two main cycles (undergraduate and graduate studies);
- to establish in all national education systems a common system of credits such as the European Credit Transfer System (ECTS) or one that is ECTS-compatible, providing both transferability and accumulation functions and guaranteeing academic acknowledgement of foreign diplomas;
- to promote European co-operation in quality assurance, to develop criteria for mutual acceptance of evaluation and accreditation/certification mechanisms;
- to promote the academic mobility of students, teachers, researchers and administrative staff;



- to promote the European dimensions in higher education in the development of modules, courses, curricula, joint programmes and research projects;
- to promote the attractiveness and competitiveness of European higher education and research.

Quality is the main underlying condition for creating a European higher education area. Quality assurance systems and mutual acceptance are to be created on national and European levels. In some EU countries national quality assurance systems have been designed and are in use now, and in the others such systems are being developed. National administrative bodies are being formed and a European Network of Quality Assurance in Higher Education (ENQA) has been created. According to the Bologna Declaration it is supposed “to develop criteria and methodology of education quality estimation”, to establish accreditation agencies independent from national governments and international organizations. The need to develop *international* criteria of higher education quality assessment is widely acknowledged, although when developing these criteria national peculiarities should be taken into account.

By 2003, the Bologna Declaration had been signed by 34 European countries. Thus for the first time a European area of higher education has been created. National higher education systems will be united by a common strategy, policy, goals, principles, similar models of education and research activities, mutually recognized systems of quality assurance, and free academic mobility. National universities will be gradually turned into European education and research institutions providing specialists for the European labour market.

## **Russian higher education in the international academic sphere**

Russian higher education joined international and European processes later than other countries. Russia ratified Fundamental Conventions in the sphere of education only at the end of the 1990s. In Europe such ratifications occurred much earlier, in the 1950s and 1960s under the aegis of UNESCO and the Council of Europe. In May 2000 the Lisbon Convention (on acknowledgement of graduate qualifications in the European area) was ratified. In recent years Russia has expressly spoken in favour of joining the Bologna Declaration although with reservations regarding a few issues.

In the Soviet period higher education institutions did not actively participate in international co-operation activities for ideological and political reasons. Activities in the sphere of academic mobility and joint research projects were directed to the socialist countries. The 1990s were a difficult period for international co-operation for Russia's universities, for the following reasons: Co-operation activities were pursued in difficult social and economic conditions, during constant and not always necessary reforms in higher education; government financing was sharply reduced; Russia lost its place in the world market of education (in 1994 only 23,000 foreign students were trained in Russia, whereas in 1990 in the Soviet Union there were 126,500 foreign students).

In the 1990s international co-operation activities in higher education ceased to fall under the jurisdiction of the Ministry of Education and some other government agencies. In April 1989 universities were given the right to pursue foreign-economic activities and recruit foreign students on a commercial basis. Direct contacts with foreign partners became more commonplace. Many foreign, and especially European, foundations and programmes in

the sphere of education and research extended their activity to Russian universities.

That is when the process of integrating Russian higher education into the world educational system really started. In 1999 the Regional Centre for International Academic and Business Cooperation at the Voronezh State University held a survey among rectors and vice-rectors of Russian universities. Forty-one per cent of respondents defined the process of integration of Russian higher education into the world educational system as “dim and unstable”; 37 per cent as getting stronger and more developed; 62 per cent of respondents noted that higher education in Russia should be developed on the basis of equal attitudes towards the achievements of western and Russian universities. From the respondents’ point of view the most important directions for international co-operation were faculty exchange (professors and researchers) (60 per cent), training specialists from foreign countries (57 per cent) and exchange of students (50 per cent). According to experts’ opinions the factors hampering international co-operation development were the absence of a real integrated policy, scarce financing, lack of data, lack of regular co-operation with international education organizations, foundations and programmes, and the poor international co-operation experience of some universities.

Developing a new strategy, model and mechanism of international co-operation in each Russian university assumes great importance in the new century. Co-operation with international and regional organizations (primarily UNESCO and the EU), foreign foundations and programmes (Tempus/Tacis, the British Council, the German Academic Exchange Service (DAAD), the independent association formed by the European Commission for promoting East-West scientific co-operation (INTAS), the Open Society Institute (Soros Foundation), the International Research and Exchange Board (IREX),

the American Councils for international education, the Carnegie Corporation, and so on) plays an important part in the system of widening international contacts and applying international, and especially European, experience to modernizing higher education in Russia. At present, the Russian educational system attracts additional financial resources from over 300 international organizations, foundations and programmes. Lately joint projects have been co-financed by the Russian side from federal and regional budgets. The experience of the last 10 years showed that the Russian universities which have been actively co-operating with foreign universities, organizations, foundations and programmes have also been reforming their internal activities successfully.

According to university rectors' views, the following factors all promote university modernization and internationalization: direct co-operation with foreign universities (according to the opinion of 85 per cent of experts); the creation of common information networks (70 per cent); and the study and usage of foreign experience in university management (65 per cent). On the whole the experts appreciated the progress made by international organizations, foundations and programmes. They also thought that the projects concerned with solving key problems of the Russian system of higher education were the most effective because the results of such projects can be used to improve activities in universities in other regions and the whole country. EU-funded projects – Tempus/Tacis projects on university management, the Open Society Institute (Soros Foundation) project on creating Internet centres, centres for advanced study and education – all comply with these criteria.

The further co-operation of Russian universities and international organizations, foundations and programmes should tackle the following tasks: promoting the participation of Russian universities

in large international education and research projects; creating systems of education quality management and assurance in universities taking into account international experience; adopting new information and educational technologies; creating regional data networks which provide information about universities and their work with foreign students and scholars and hot-line services for universities giving information about foreign partners and their potential. Foreign organizations, foundations and programmes should perform their activities in Russian regions, taking into account the new realities of regional educational districts, regional centres for international co-operation and academic mobility. At the moment there are 25 such centres registered at the Ministry of Education of the Russian Federation.

One of the most important features that defines quality and efficiency in education and establishes university prestige at national and international levels is training foreign students. Training foreign students has become one of the priorities of government policy for the US, UK, Germany, Canada, Japan, and Australia. There are several reasons for this. First of all, training specialists for foreign countries is one of the most profitable activities for a university. The world market of educational services is valued at US\$40-50 billion: Annually the US gets more than US\$14 billion (30 per cent) for training foreign students, Australia 3,600 million, and Russia 100 million (0.3 per cent). The need to find extra funding becomes more urgent due to the decline in government spending. In 2002, the Russian government provided the equivalent of US\$12.6 million for education (3.5 per cent of the GDP); while the US government spent US\$745.2 million (7.4 per cent of GDP); Great Britain, £44.1 million (4.6 per cent of GDP); France €100.7 million (7 per cent of GDP); and Germany, €7 million (3.3 per cent of GDP). Secondly, in order to attract foreign students, universities try to improve their curriculum, taking into

account demands of the world labour market, and also enhance the quality of training, so as to prepare students for work in a globalized economy. Thirdly, training specialists from foreign countries promote the geopolitical and economical interests of a country.

Governments support and stimulate their universities to attract foreign students. Universities' activities and government support have lead to a significant increase in the number of foreign students in developed countries.

**Table 5.1 Number of foreign students by receiving country**

Country	Number of foreign students	
	1990	2002
USA	407,529	582,996
UK	147,790	229,500
Germany	146,000	206,141
France	121,600	195,000
Australia	29,398	157,296
USSR/Russia	126,500	95,957

*Table 5.1* shows that in 12 years the number of foreign students in the US has grown by 143 per cent; in Great Britain, 155 per cent; in France, 160 per cent; and in Australia 535 per cent. In 2002, 96,000 foreign students studied in Russian universities; and including those from CIS countries, another 34,500 (Sherengy, Dimitrev and Arefjev, 2002). The Russian share of the international educational market, though only 4 per cent, is the seventh largest in the world.

Russia has developed an internationally recognized system of higher education: 1,170 universities and 1,500 university branches; 5,000,000 students; and considerable experience in training

specialists for foreign countries. Some 560,000 foreign students have graduated from Russian universities. Russian universities provide deep general theoretical training and a natural combination of studying and research activities: a good basis for graduate professional mobility. Besides, Russian universities are trying to adopt the bachelor/master model of higher education. Studying management is very popular among foreign students; Russian universities are not competitive in this sphere. But for Russian universities it is important that the number of those who want to study mathematics, information science, computer science, and engineering specialities has recently grown by 18.4 per cent. According to some foreign experts, the optimal ratio of foreign students is 10 per cent, as in France and Germany. In the US the ratio is 3.9 per cent (but in many universities it is higher), in Australia 15.5 per cent, but in Russia only 1.22 per cent.

Attracting foreign students is very important strategically. To accomplish this goal it is necessary to improve the quality of teaching in Russian universities and to bring professional skills into compliance with the demands of other countries. On the university level the system of recruiting and training foreign students should be reformed. There is a need:

- to create a modern education system providing high quality training; and to optimize organizational forms and principles of work starting with foreign student recruitment and finishing with communicating with alumni;
- to broaden the range of educational services, especially training in new prioritized specialities;
- to develop different forms of postgraduate training for foreigners: doctorate and PhD levels, internship including training in European languages;

- to direct universities to find a particular niche in training professionals and scholars for certain countries or regions;
- to run information and advertising campaigns using the Internet and other modern information systems;
- to create a network of partners abroad, organizations that undertake recruitment services and, in some countries, preparatory training; to co-operate with other universities through establishing inter-university marketing services;
- to establish university branches abroad, and to organize joint training with universities-partners;
- to bring the legal status of foreign students into line with world standards;
- to improve the living conditions of foreign students, to develop cultural and sports activities (these spheres can be reformed partly out of the fees paid by foreign students);
- to establish strong professional and business relations with foreign alumni, to set up university and national associations of alumni, and to hold alumni meetings.

### **The university of the twenty-first century – international education and research institutions**

The arguments above prompt us to conclude that the international aspect of universities' activities will become more important in the future. The modern university will only be able to respond to current challenges when it becomes a truly 'internationalized' and international education and research institution (Ellingboe, 1997).

In our opinion this model includes the following:

- transforming the university into an international education and research institution (as part of a strategic programme);



- including international components in all areas of activity (teaching, research, management, etc.);
- establishing a system of teaching quality management according to international demands, standards and experience, the system of ECTS or other compatible systems;
- developing new professional skills in faculty members and students, taking into account global changes in the economic, political, social and cultural spheres;
- co-operating with foreign universities, research centres, and international organizations for academic mobility; and participating in international education and research projects and programmes;
- forming a specific culture which acquires and reproduces world and national values;
- providing professional skills with an international component, as well as skills of intercultural communication;
- recruiting considerable numbers of foreign students, postgraduates and trainees;
- establishing special structures within university to manage international co-operation activities.

Voronezh State University (VSU), like other major Russian universities, pursues these objectives. The university is one of the leading universities training foreign students and was one of the first in the USSR to admit foreign students, starting in 1961. About 15,000 foreign undergraduate and graduate students and interns from 89 countries have studied at VSU since then. In the 2002/2003 academic year 715 foreign students (5.93 per cent of all full-time students) were trained in the university. The curricula for economics, humanities and social sciences have been improved, taking into account international experience and standards. Several new departments have been established: international relations, computer science, pharmaceuticals, and the Centre for Advanced Study and Education. In

the Physics Department the working language for foreign students is English. A system of teaching quality management has been established.

VSU actively participates in academic mobility projects: in the 2001/2002 academic year 250 teachers, undergraduate and postgraduate students went abroad for teaching, studying, research and taking part in scientific conferences. On the basis of direct agreements VSU co-operates with 62 universities in Europe, America and Asia. It pays much attention to co-operation with international and foreign organizations, foundations and programmes in the sphere of education and research. In 2002 VSU became a member of the European University Association (EUA) and international accreditation of its academic programmes and its membership in the World Association of Universities is currently being negotiated.

The evidence of international recognition can be found in the number of grants received by the university from international foundations and programmes. The largest are grants from the Tacis/Tempus programme for the project 'University and International Cooperation Management of the Levels of Department, University and Region'. The Open Society Institute (Soros Foundaton) financed the creation of an Internet centre. In 2000, American and Russian foundations and programmes funded the establishment of the Centre for Advanced Education (US\$1 million) and in 2001 they funded an Education and Research Centre (US\$1 million).

The university has a system for accumulating information about grant competitions. A database on international organizations, foundations and programmes was created at the Regional Centre for International Academic and Business Cooperation. VSU also has a Centre for French Language and Culture, German, Spanish, American Cultural Centres and an Informational Centre of the Council of Europe.

VSU researchers investigate problems in international co-operation in the sphere of higher education.

The university's further development, and its transformation into an international education and research institution should be based on the following:

- developing new concepts and programmes for university international co-operation activities up to 2010;
- achieving international certification and accreditation of curricula;
- supplying educational services to foreigners (raising the percentage of foreign students to 10 per cent);
- increasing the number of foreign students enrolled in postgraduate programmes; admitting foreign students with bachelor's degrees into the graduate school; training foreign students in European languages; joint supervision of graduate students with foreign professors;
- improving professional training, taking into account the specifics of foreign specialists' future work;
- adopting ECTS and issuing European accredited diplomas;
- establishing university branches and preparatory centres abroad;
- marketing the products of research in the international market for scientific and technological projects;
- assisting the university's scholars to enter international and foreign national scientific societies;
- entering international educational and research programmes, developing mobility projects for faculty members;
- promoting scientific tourism (participating in ecological, archaeological and folklore and craft expeditions);
- creating a Federal Centre (Institute) within the VSU structure for training foreign specialists that graduated from universities of the former Soviet Union (USSR) and Russia.

A significant development and improvement in the efficiency and quality of international co-operation projects involving Russian universities is impossible without solving problems at the federal government level. The most important goal is to develop and adopt a programme of international co-operation for Russian higher education institutions for the next five to 10 years. This goal can be achieved by the Ministry of Education with the help of the academic community. A specialized research programme 'International Cooperation Projects of Russian Higher Education Institutions in the twenty-first century' can also be beneficial.

Other important goals include:

- making and renewing education co-operation agreements with foreign countries, concluding agreements on diploma recognition at the federal government level and stimulating academic mobility;
- developing the co-ordination functions of the Ministry of Education while at the same time leaving universities independent;
- developing a legal basis for international co-operation activities taking into account international experience, in order to provide competent participation by Russian universities in the world market of scientific and technical and educational services;
- developing and implementing a common state policy in the sphere of training specialists for foreign countries and co-ordinating the activities of the Ministry of Education, the Ministry of Foreign Affairs and other government agencies;
- developing and implementing a long-term government programme for educational services for foreign students;
- developing tools for marketing the products of research in the world market;
- developing a national system of training foreign specialists who graduated from universities of the former Soviet Union and Russia

and, if it is possible, to establish federal training courses (preparatory departments);

- developing a state system for training and retraining specialists in the sphere of international co-operation (at present only the Department of International Cooperation Management of the St. Petersburg State University carries out such training).

All the above-mentioned will assist the realization of the strategic objective set in the 'National Education Doctrine of the Russian Federation', taking into account national experience and traditions, to integrate the Russian system of education into the world education system. Responding to these challenges will contribute to the dynamic development of our country in the new century.

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## **2. Interuniversity co-operative institutions for academic mobility**

*Nikolay Pelikhov, Nikolay Zverev*

### **Introduction**

The international activities of the higher educational institutions (HEIs) in Russia have been greatly influenced by the processes of management decentralization, acquired autonomy and the shift from overall directed administration. The accelerated pace of these processes at the start of the 1990s highlighted a lack of administration and professionalism in this sphere. Our country's situation gave rise to a greater interest amongst education and research institutions as well as HEIs in co-operation, partnership and integration with corresponding partners abroad.

External factors such as the rigidity of time limits and objectives, poor approaches to the development of international relations and almost zero reinvestment of funds gained as a result of international activity, and made HEIs' international services seek better functioning mechanisms and allies. It was this search that led to a recognition of the need for resources, the consolidation of efforts and ideas, and the creation and restoration of the necessary vertical and horizontal connections with all the parties concerned with international educational co-operation. Arising out of an initiative 'from below', regional centres of academic mobility and international co-operation

(RCAMs) were to become links between federal, regional and tertiary levels in the system of international educational co-operation management.

### **The development of RCAMs**

Since 1990 regional centres of international co-operation and academic mobility have been created and developed at the initiative of HEIs and with the support of federal education authorities. The centres evolved as a result of attempts by the Ministry of Education and university partnerships to find effective means for international co-operation and academic mobility in the new political and socio-economic conditions (Zverev and Slepcov, 2000). In 1990, with the support of the Ministry of Education, the Rostov on Don HEIs founded a centre of international scientific, educational and technological co-operation, called 'Internauka'. The centre became one of the country's first regional co-operation associations. In June 1994 the universities of the South of Russia signed the first framework agreement for carrying out joint co-operative programmes.

Between 1994-1998 a number of RCAMs were created in different regions of Russia. Among those still operational at the present time are:

- The Regional Centre for International Cooperation of the West Siberian Universities;
- The Far East Interuniversity Centre for International Cooperation and Academic Mobility;
- The Tver Interuniversity Centre for International Cooperation;
- The Ulyanovsk Centre of International Collaboration in Higher Education;
- The Eastern Regional Interuniversity Centre of International Cooperation;

- The Association of Vice-Rectors for International Relations of Higher Education Institutions of Moscow and the Moscow Region;
- The St. Petersburg Association of Vice-Rectors for International Affairs;
- The Regional Centre for International Cooperation of Tatarstan Universities;
- The Black Earth Regional Centre of International Academic and Business Cooperation;
- The Regional Centre on International Cooperation in the European North of Russia;
- The Interuniversity Centre for International Cooperation and Academic Mobility based at the Belgorod State Technological University.

The performance of these centres during this period was complicated by the lack of experience of collective activities and each centre acted separately. Despite this, most centres managed to achieve noticeable outcomes, some of which are described below.

Due to efforts of the 'Internauka' Centre an agreement was made in 1997 for joint action amongst the HEIs in the South of Russia. It was called 'The South Russian Centre of Academic Mobility' (SRCAM). The agreement was signed by the leading universities and territorial scientific and educational governing bodies of the Rostov Region, Stavropol and Krasnodar Territories, the republics of Adygeya, Daghestan, Kabardino-Balkaria, Karachaevo-Cherkessia, and North Osetia-Alania. A similar agreement was signed in the Central Black Earth Zone consolidating the HEIs of six regions of the zone. Similar agreements are being prepared in other regions of Russia as well.

The Vice-Rectors Association on International Connections in St. Petersburg (founded in 1994) conducted a series of regional and international seminars, which aimed at improving the professional



skills of international services staff. There were also a number of activities concerned with the foreign students admission system in the HEIs of St. Petersburg. One should note that St. Petersburg ranks first in the number of foreign students. The interuniversity centres of Kazan and Petrozabodsk State Universities provided informational and consultative services as well as involving regional HEIs in international projects and programmes. During the implementation of a TEMPUS project the HEIs of Kazan found it necessary to establish a joint interuniversity non-commercial organization. In such a way the FORRA fund was founded. In the Central Black Earth Zone the centre formed at Voronezh State University in 1993 arranged a number of helpful activities for the non-citizen undergraduates, including the organization of international conferences and seminars and the issue of information materials. In the Far East and in Khabarovsk Territory the interuniversity centres at the Far East State University and Khabarovsk State Technical University were actively involved in the process of developing international co-operation with countries of the Pacific region and South-East Asia. The South-Russian Centre of Academic Mobility has prepared and presented a draft federal target programme for the economic socio-political development of the North Caucasus region for the period up to 2005.

The RCAM development was based primarily on the enthusiasm of its initiators and it attracted the leading specialists on international relations from the most advanced universities in Russia. Analyzing their separate operations they came to the conclusion that they needed to create an association integrating the RCAM for all Russia. This resulted in the association of regional centres. ROSAM (Russian Council for Academic Mobility) was formed in 1997. This led to a significant intensification of international co-operation development in the universities of Russia, providing efficient data exchange and raising the effectiveness of Russia's educational services in the world

market. It also served as an impulse for the creation of RCAMs in new regions, in the Ivanovo, Irkutsk, Novosibirsk, Omsk, Sratov, Sverdlovsk, Tambov, Tomsk, Chelyabinsk regions, the area of Upper Volga, and the republics of Udmurtiya, Kabardino-Balkaria, and Northern Osetia-Alania. Now the official registry of the Ministry of Education of Russia contains 27 RCAMs, the activities of which cover practically all of Russia. Gradually the network of ROSAM-RCAMs has been growing into a significant element of the federal-regional policy of the Ministry of Education in the sphere of international co-operation and academic mobility. By order of the Ministry of Education of Russia (No 254, dated 9 June 1999) the official register 'The Higher School Centres of International Cooperation and Academic Mobility' (network of centres) was introduced. The Board of the Ministry confirmed the importance of the regional centres in implementing international co-operation through academic mobility and education generally for the benefit of their regions.

This lengthy formation period resulted in a diversity of organization forms:

- interregional;
- regional, uniting HEIs of several regions of the Russian Federation;
- regional, uniting HEIs of the same region;
- interuniversity centres, uniting HEIs of a single city;
- interuniversity centres, functioning in a single HEI.

In accordance with their organization and legal status they were formed as follows:

- legally independent organizations (non-commercial associations and partnerships, joint-stock companies, etc.);
- associations of Vice-Rectors for International Affairs, functioning as a legal entity in the Rectors' Council of regional HEIs;

- structural subdivisions of HEIs, established by interuniversity agreements;
- structural subdivisions of HEIs, not guided by interuniversity agreements;
- combined forms.

The interuniversity centres were being formed at the same time as a transfer of state international activities to the provinces was taking place. In this process a number of difficulties emerged. The negative aspects of the autonomous and ill-coordinated activity of Russian HEIs are:

- a distortion of aims and tasks in the commercialized sphere of education for foreign citizens;
- excessive competitiveness among HEIs;
- the lack of any mechanism able to deter the activity of some dubious intermediary firms;
- the duplication of activities;
- extra expenditure because of the lack of co-operative structures for international work;
- the lack of skilled and qualified international service staff, experienced in creating and developing international connections between HEIs in modern conditions;
- the inability of some HEIs to become successful partners to foreign universities and their associations;
- the lack of a common strategy, balanced in terms of international interests, education and science, supported by the state both politically and financially.

The creation of the RCAMs was promoted by new opportunities, both internal and international, the implementation of which could most effectively be undertaken within the framework of their collective activity.

## **The demand for European experience**

The scope of professional knowledge and skills necessary for the specialists of international services to meet modern conditions and reach competent administrative decisions has increased enormously. They vary from awareness of the state of education and science development in the EU countries and current European policy on education (the Bologna process), science and engineering through an awareness of European legislation, to the study of conceptual issues forming European education, information, science and research space (including the need to know Russian-European academic exchange prospects and ways to develop them) and EU institutions (their development and political formation).

## **Regional prospects**

The development of interuniversity socio-economic co-operation between the structural units of the Russian Federation has gradually resulted in complex programmes of socio-economic co-operation among republics, territories, and regions. As a rule, however, the educational and scientific component in such programmes is either missing or negligible. The launch of large-scale corresponding state programmes for the socio-economic development of Russian regions with a significant educational, scientific and technological component, brings the possibilities of international academic mobility into practice for the sake of the socio-economic development of regions. In its turn it stimulates the growth of a number of new regional institutions - academic mobility centres.

It is necessary for both financial and structural reasons to correlate the activity of new local academic mobility organizations (assuming they are well enough developed and organized) with that of the socio-economic co-operation associations in Russian regions. The same is

true of the local administration of different administrative units of the Russian Federation. Co-operation among all of them is crucial – that will be the only way to guarantee a stable and consistent development of the local academic mobility organizations, if common interests of local educational and scientific structures are to coincide with the opportunities the local administration can provide. That is also the way to define the target of this process as contributing to the general socio-economic development of the region.

### **Federal issues**

From the beginning of the 1990s we faced a strong demand to create new national, local and professional organizations (associations, centres) to further the establishment of Russian universities' international contacts. The Russian territory is large and its geographical position is somewhat unique. So it is difficult to balance the interests of different universities and colleges and to work out a common professional approach to the expansion of international co-operation. The results of a special federal research programme – 'Russian Universities' – was truly helpful because it created the concept of a RCAM network to cover the whole country. This network is intended to provide a vehicle for further co-operation between universities through launching new international projects and programmes appropriate to the new state of affairs and perspectives of the university system in Russia and in the world.

### **The ROSAM-RCAM network**

The need to overcome accumulated difficulties and to exploit newly created capabilities has persuaded the ROSAM-RCAM network to adopt the following primary goals:

- improving the academic mobility and international co-operation management system at the federal, regional and local levels;
- pursuing co-operative interests of the university and its agents in different regions; and mitigating existing negative attitudes towards international co-operation development;
- setting up a balanced intercommunication and interrelation system between universities, science and education government bodies and other structural units of territorial-economic complexes while interacting with the world community;
- drawing up joint university programmes at the federal, local and international levels;
- establishing a system of co-ordination and mutual assistance to provide the developing international relations with adequate services;
- improving information exchange;
- developing a new system of training, retraining and further training of international service specialists for Russian universities as well as a system of consulting and expert advice;
- building policies and ways of working in the global education and science market, which would be optimal for Russian universities.

Gradually the scope, range and main directions of the ROSAM and regional centres network have been defined:

- rendering assistance to new academic mobility programmes;
- supporting conferences, meetings, schools, and exhibitions devoted to international co-operation in the educational sphere;
- organizing analytical work, assisting in the preparation of analytical data, international agreements' drafts, conceptual decisions, and legal acts;
- triggering and co-ordinating research and methodological work on ensuring international co-operation in education and science;

- rendering assistance for the acknowledgement and legalization of certificates;
- AM data ware;
- assisting in the elaboration and achievement of innovation programmes;
- broadening the field of HEIs and RCAM involvement in international programmes and projects;
- assisting the creation of regional centres' networks and their expansion;
- providing a service for AM participants;
- consulting on and providing an expert advice system;
- assisting professional skills development among members of international services in HEIs;
- providing opportunities for foreign students to enrol in Russian HEIs;
- providing interaction with foreign and international partners organizations;
- providing interaction with the education government bodies.

The following can be considered as indisputable advantages of the ROSAM-RCAM network:

- an extensive information network covering many regions;
- a concentration of professional knowledge and experience;
- top-level experts as members of advisory panels;
- an opportunity to accumulate experience gained in different regions of the country and transmit it through the network;
- intensive lobbying of HEIs interests at regional, federal and international levels;
- a possibility of launching co-operation projects and programmes;
- participation in the design of the programme of socio-economical development of regions;
- a network of allied organizations in many countries of the world.

At the same time the list of weak points of the network is hardly less important:

- the weakness of the organization and the finances of ROSAM and RCAM;
- state support is mainly moral not financial;
- the lack of a well-defined organizational and legal framework;
- the heavy judicial dependence on the HEI for the basis on which the centres develop;
- the lack of a clear vision of joint development prospects;
- no common principles of work for network members;
- the elementary support for the network in terms of research and methodological materials;
- weak interaction in practice with related organizations in foreign countries.

### **Analysis of the existing South of Russia system of regional administration and support of the development of international co-operation**

A survey has been carried out among the international services of universities in the South of Russia and local, regional and federal governmental institutions. Universities in the Republics of Adygeya, Dagestan, Kabardino-Balkaria, Kalmykia, North Ossetia, Krasnodar and Stavropol Territory, the Rostov Region as well as governmental bodies of the Rostov Region also had an opportunity to express their opinion. The survey was designed to define progress in the following areas:

- development of a regional system to support international scientific and technical co-operation;
- development of a regional system to support international co-operation in the sphere of education;

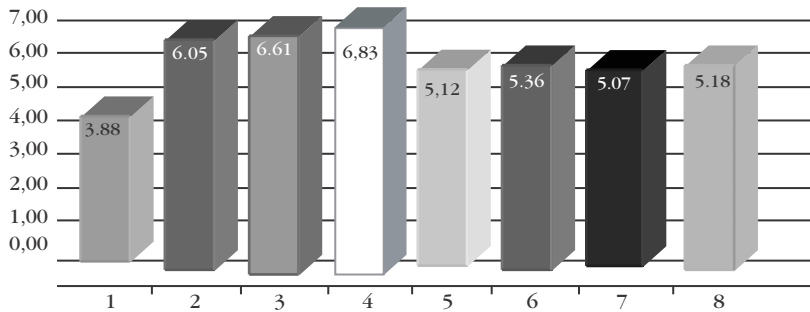


- forming a market infrastructure for scientific and technological output (here an international component was first and foremost discussed);
- providing the sphere of international co-operation with information;
- development of regional and interregional co-operation in the field of prospective international project implementation;
- working out a system of professional management in the sphere of international scientific and technical co-operation and in education.

The effectiveness in achieving these objectives by the following organizations was then compared between:

1. local councils for foreign students' affairs;
2. governing bodies of education and science within regions of the Russian Federation;
3. governing bodies of international and external economic activity within regions of the Russian Federation;
4. SRCAM;
5. the Plenipotentiary Representative of the President in the South Federal District;
6. the Russian Ministry of Education;
7. some other ministries and institutions concerned;
8. international organizations.

*Figure 5.1* below shows the respondents' view of the effectiveness of these organizations:

**Figure 5.1 Respondents' view of the effectiveness**

The respondents gave the highest rating to SRCAM. All these institutions, to greater or lesser degrees, influence the development of international co-operation between HEIs of the region and almost all of them except for SRCAM have permanent government financial support.

### **Projects being undertaken by SRCAM**

In the list of projects being developed or implemented at present by SRCAM there are some designed to use academic mobility in a system-forming function. Among these are:

- SRCAM's complex project 'The development of academic mobility in the South of Russia aimed at social and economic regional development', which has to be implemented by 2005;
- development of policy and strategy aimed at forming a complex co-operation between the intellectual potential of the South of Russia and the main structural units of the regional sphere of administration and economics and its further integration into the world educational and scientific sphere for the sake of regional social and economic development.

These projects have been developed and implemented by SRCAM in collaboration with the regional governing bodies of education and science, which are the contracting parties for financial support from the Ministry of Education. Carrying out a project of regional policy, SRCAM planned no co-ordinating participation on its own part. The chief task was seen as follows: promoting interaction between the views and opinions of the main structural units in the system of education in the South of Russia aimed at revealing regional interests and priorities and embodying their essence into regional policy. Therefore at the implementation stage the project was headed by the Plenipotentiary Representative of the President in the South Federal District (taking into account the newly-founded institutions like the Rectors' Council in the South of Russia) and the Scientific Centre in the North Caucasus. SRCAM's main task was to gather regional views so that it would be able to project its long-term activities.

The following project was developed to facilitate the planning of SRCAM's long-term activities: 'Developing the system of efficient federal and regional policy of the Ministry of Education in the sphere of international academic mobility, enforced by joint administration on the part of HEI's authorities, administration of education and science in the South of Russia.'

This project is carried out by Rostov State University together with SRCAM and the Department of International Relations of the Rectors' Council in the Rostov Region.

A number of SRCAM's projects are supported by the Ministry of Education and/or the Ministry of Economy, International and External Economic links of the Rostov Region. The projects are implemented by Rostov State University for the Ministry of Economy together with

SRCAM and leading universities in Rostov, Novocherkassk, Taganrog and the 'High Tech' Association. Among them are:

- drafting legislative documents dealing with the development of innovation activity in the Rostov Region;
- the development of an innovation infrastructure for the Rostov Region;
- bringing forward proposals on making use of existing scientific and technical potential in taking decisions on the social and economic development of the region.

In carrying out these projects, SRCAM's specialists used the experience gained in another training project for the Rostov Region's enterprises carried out by the Ministry of Economy with the small enterprise, power engineering and transport industry of the North Rhine Westphalia (FRG). The main feature of these projects is using convergent patterns of regional social and economic development to define proper modes of forming links between key institutions of the region's innovation sphere, to undertake accurate economic calculations which substantiate the efficiency of regional social and economic solutions and to analyze their stability. The final step is to convince the regional authorities of the effectiveness of the solutions offered. This is not going to be easy. Such decisions represent an essential qualitative change in the status of HEIs within the region's social and economic environment by exploiting their intellectual and economic potential.

Two projects are aimed at training the administration of international co-operation:

- devising a system of training, retraining and raising the skill level of specialists in the field of international education administration in the South of Russia;

- devising a system of training, retraining and raising the skill level of specialists in the field of the administration of international scientific and technical co-operation.

A new direction in SRCAM activity was initiated by its participation in the project 'TEMPUS IMG-2000-RF0025', which concerned the foundation of a job centre for graduating students. The recruitment of graduating students, giving them an opportunity to reveal their knowledge and treating them as our country's intellectual potential, is now a burning issue. Unfortunately, this social group is not treated as a separate category at present in the gathering, processing and analysis of statistical data for studying the labour market. Thus it is difficult to analyze the present situation and certain professions in terms of demand and supply.

Another project concerns the export of Russian educational services, and aims to map the priority trends in the Federal Programme of Education Development. This is a new area of importance and has been designated by the Ministry as being a priority. Devising such a programme emphasizes the need for the kind of communication system which is provided by the ROSAM infrastructure.

The European networking project Tempus NP No 21011-2000 (which has led to this volume) is of special interest, involving a European-Russian dissemination network whose task is to:

- devise a dynamic model of systematization and dissemination experience of European and Russian projects on the basis of the ROSAM-RCAM universities network;
- develop a system of Russian universities taking part in joint European projects of sharing the best experience taking account of the special factors of regional social and economic development;

- promote a system of prospective co-operation between Russian regions' inter-university associations and European centres of academic mobility, together with the European programme 'Socrates'.

The project has been implemented by a consortium including Russian universities, regional centres of academic mobility and international co-operation, the Ministry of Education, the Russian Council for Academic Mobility, the Rectors; the Council of St. Petersburg's universities, Stockholm University, the Centre for International Mobility (CIMO, Finland) and the Institute of Education, University of London. This project is aimed at one of ROSAM's strongest points - regional centres: the ability to accumulate international experience as well as the experience gained by the country's regions and disseminate the experience both between these regions and with other regions of our country. This offers a pattern for different regional centres to use a newly developed scheme as a source of spreading new knowledge at a higher speed in order to bring the development of academic mobility up to a new standard. In devising a system of training and retraining of specialists for university management, it is possible to renew HEI's expertise.

The direct dialogue between ROSAM, the regional centres and European academic mobility institutions was initiated at a meeting in Helsinki, organized by CIMO in October, 2002. This co-operation offers new opportunities to develop programmes of academic mobility as well as to work out new forms of co-operation between Russian and European academic mobility centres and to form definite routes to implementing the approaches developed by the Bologna Process.

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### 3. The Bologna process – dream or reality?

*Lars Ekholm*, Swedish Rectors Conference

Five years ago few people would have believed that European higher education systems would develop in some sort of co-ordinated direction. Nevertheless, it is a fact that something has happened that colours discussions on higher education in almost all European countries. This chapter discusses the nature of the Bologna process, with an emphasis on the political and academic forces behind it. It starts by presenting the events as they have manifested themselves in meetings and documents. It then raises the question of the nature of the process, and the degree of success, if any. A section on the contents of the reform work follows and what has been achieved. The chapter ends by discussing some controversial issues in relation to the process.

#### The Bologna chronology

It started in 1988 in Paris. When the Sorbonne University celebrated its 800<sup>th</sup> anniversary the ministers of education from France, Germany, Italy and Great Britain signed a joint declaration on 'Harmonization of the architecture of the European higher education system'. They talked about a 'Europe of knowledge' and – for the first time – a 'European area for higher learning'. Key words and terms were: *two main cycles, credits, life-long learning, student mobility and employability*.

The four ministers' declaration did not meet with entirely positive reactions. The fact that the four big countries in Europe expressed distinct ideas on general European developments received some negative although constructive responses, as it turned out. Many countries reacted negatively for the simple reason that they did not like a club of four major countries taking the lead. The argument was that Europe "should not go at two speeds". Nor was the initiative well prepared in the four countries: Academia was definitely not closely involved. In retrospect, however, one has to admit that these ministers showed great foresight. As will be seen, their declaration started an imposing reform movement in Europe.

The next stage was a French report (the Attali report), that introduced the formula 3+2+3, i.e. three years for a bachelor's degree, two years for a master's degree and three years for a doctor's degree. People that have no reason to know too much about the Bologna process think they know that 3+2+3 is the quintessence of Bologna – but it is not. The Attali report was a report on the French higher education system.

The real founding document in the process is the Bologna Declaration, which 29 European governments signed in 1999. It set out the direction in which European higher education should develop up to 2010. It states the reasons why higher education should converge and it sets out the means to reach this goal. The declaration also proposes a technical procedure for these measures. In a later section we will return to the contents of the Bologna Declaration. Let it be said here, that it is still the major document, to which the later ones refer.

The organization of the events in Bologna was such that the ministerial meeting was preceded by a meeting with representatives of the European rectors' conferences. The idea was that their findings



should influence the ministerial declaration. Of course it could not have this effect – much more time was necessary to do this. The Bologna Declaration stated that there should be a follow-up meeting in two years, in 2003. This was arranged in Prague. On the governmental side the summit was prepared by two working groups, consisting of ministerial representatives. Not to be side-stepped this time, academia, now in the shape of the European University Association (EUA), organized a so-called Academic Convention in Salamanca a few months before the Prague meeting; the EUA was a combination of the then two existing European rectors' conferences. The academic side made an effort to improve the possibility of influencing the outcome of the ensuing political summit meeting.

In Prague another declaration was signed, now by 32 governments. It took stock of what had been achieved so far and added some more action lines for the immediate future. The students finally entered the scene in Prague. The European student organization ESIB (The National Unions of Students in Europe) had worked hard to be involved in the process, and succeeded. The academic side was the third partner; besides EUA both the Czech and Swedish rectors' conferences were involved.

At the time when this chapter was being written the next summit meeting in Berlin, in September 2003, was in full preparation. A number of seminars have been organized in various countries on themes that the governments have agreed on. This is done in order to explore relevant questions before they are decided on in the declaration that will be the result of the Berlin ministerial meeting.

On the academic side the EUA has organized its own work very much in order to deal efficiently with the integration process in Europe. Its action plan contains five major themes, all of them, directly or indirectly, referring to the Bologna process. Again, academia will

meet before the political summit, this time in Graz in May; the intention is to agree on what message to deliver to the governments.

The students work within their own organization, gathering at major conferences, work groups, etc., and lobbying with other organizations. They are aiming for full participation in the Bologna process.

It should be noted that the elements of this triangle – governments, academia, students – do not work separately from each other. On the contrary, both academic and student representatives are invited as active partners at the preparatory meetings.

### **Driving forces behind the Bologna process**

After this chronological description – and before discussing the contents of the Bologna process – it is appropriate to raise the question as to what kind of political movement this is.

The first thing that strikes one is the fact that it is a *voluntary process*, driven by those countries whose governments choose to sign the documents. In this sense it is not decided from above, by a supra-national body that dictates what shall be done and what shall not be done. Seen from a general political perspective it must be said that the Bologna process at this stage is a success, even though it contains a number of unsolved problems. But if one takes into consideration what stakeholders thought at the outset – most probably they were rather modest – and the difficulties involved it is striking what momentum the Bologna process has achieved. One of the major reasons why this is so is precisely the voluntary character of this political process. It has given governments and universities and other higher education institutions room to navigate in difficult waters.

The Bologna process is also a *pan-European process*, and not just a European Union project. Many governments outside the Union signed the Bologna declaration; many of them will soon be full members. It is only natural that sometimes there has been a tension between the voluntary Bologna signatories and Brussels – who should take the lead? The importance of European Union involvement in the process is twofold. First, no one can neglect such a powerful actor in matters concerning Europe. The Union will always have a say in the Bologna process, even if it will not be the ultimate force. It deserves to be noted that the second follow-up summit was located in Prague, outside the European Union. In the first half of 2001, when it took place, Sweden had the presidency of the European Union. The chair in Prague was shared by the Czech and Swedish ministers of education. Second, one can argue that the prime importance of the European Union in the Bologna process is perhaps what the Union did and achieved *before* it was initiated. The idea of European co-operation and the techniques of such work come from the co-operation that has taken place within the framework of the European Union. The exchange of students developed a stable framework through the Erasmus/Socrates programme. Technically such a component as ECTS (see below) is a novelty established by the Union. The Tempus programme has opened possibilities for enlarged co-operation. One can add another factor, and this concerns the initiative by the European Union to create a European Research Area (ERA). With two processes going on in Europe in the field of higher education and research it would be astonishing if, in the long run, they will not influence each other. Such discussions are already in process, and much more of this will probably be seen in the future.

Is the Bologna process a *political* or an *academic* process? No doubt it started as a political process. It is governments that sign the communiqués of the follow-up summits. Many issues are of a nature

that must be dealt with on the political level. But this does not mean that governments are the only participants in the process. As has been pointed out above, both the higher education institutions and their representatives as well as students have step by step become more involved. We will return to this topic in the concluding section.

As indicated, students as partners are a fairly late phenomenon, namely since the preparatory work leading up to the Prague summit. Both the French and the Swedish ministers of education were eager to see them as active participants in the Bologna process. One can guess with some certainty that the Berlin summit will further promote student interests.

As to academic leaders, the national rectors' conferences and the European rectors' conference (EUA), one can say that from a more or less neglected platform they have succeeded in increasing their influence over what happens in the Bologna process. From a necessarily reactive position they now try to be a proactive force in building a Europe with converging higher education systems.

### **The Bologna achievements**

The Bologna Declaration states that, although the 'European process' is successful, there is a growing awareness about the "need to establish a more complete and far-reaching Europe, in particular building upon and strengthening its intellectual, cultural, social and scientific and technological dimensions." A 'Europe of Knowledge' is mentioned, as well as the importance of education and educational co-operation for "stable, peaceful and democratic societies." It goes on to refer to the Sorbonne declaration and the stress it put on mobility and employability. A central passage in the Bologna declaration is as follows:

“We must in particular look at the objective of increasing the international competitiveness of the European system of higher education. The vitality and efficiency of any civilization can be measured by the appeal that its culture has for other countries. We need to ensure that the European higher education system acquires a world-wide degree of attraction equal to our extraordinary cultural and scientific traditions.”

The declaration then goes on to set out a number of objectives. In the Bologna jargon, that has evolved since, they are usually called *action lines* or *means*:

- transparent and comparable degrees;
- a two-cycle structure (undergraduate and graduate), with students employable after the first cycle comprising at least three years;
- a credit point system;
- student and staff mobility;
- European co-operation in quality assurance;
- a European dimension.

Two issues can be added to this list after the Prague summit in 2001:

- lifelong learning;
- student participation.

As can be seen, these instruments differ very much in nature, complexity and duration. One of them, the *credit point system* (ECTS, European Credit Transfer System) is a more or less technical instrument, and either a country introduces it or it does not. Some countries prefer to have parallel systems, or to use ECTS if the students ask for it. However, more important might be the fact that ECTS goes together with the modularization of higher education programmes;

that is programmes and courses are broken down into smaller units. In this way the ECTS-issue has an impact on how a syllabus is constructed. A student can, step by step, accumulate modules that form his or her study programme. It also increases – which so far seems to be neglected – the possibilities for students in lifelong learning.

Items number one and two in the above list are interrelated, although the first bullet point is linked to the introduction of a technical document, the *Diploma supplement*. This document is to be attached to the diploma that the student receives, and it will give an employer or a higher education institution information about the contents of the studies as well as the position of the degree awarded in that country's higher education system.

The *degree structure* is a much more complex issue. One can study the impact of the Bologna process in various countries by assessing development work in this field. For those that have been sceptical about the prospects for the Bologna process it must be a surprise to find how ambitiously many countries have worked on the degree structure question. Some countries already had the basic pattern – two cycles where the first is not too long – or could adapt to it with minor changes. Other countries have made very substantial changes in their overall degree structures. Such countries are Italy, Norway and Germany. It has meant that long programmes have been abolished and somewhat shorter ones have been introduced, in the case of Germany as a parallel system. One can always discuss whether these changes would have come without Bologna, that is it is sometimes difficult to tell if Bologna is the prime force for reform or if this concept has been used as a politically effective instrument to carry out necessary reforms. Another question is whether these reforms are political or academic. Changes and reforms always meet with

resistance and criticism from those concerned. There has been academic opposition against some of these reforms. On the other hand there are definitely academic leaders that have backed the reforms, as well as politicians who have been against them.

As to *student and staff mobility* it is a well-known fact that student mobility has been more successful than staff mobility. If or when ECTS, the diploma supplement and more comparable degrees are in place, then increased student mobility will follow. So this is a long-term objective. Staff mobility is difficult because it is dependent not only on personnel policies at home but also on European agreements about taxation, social security, and so on. At the Prague summit the academic side pleaded with the ministers of education to put such questions on the agenda more forcefully than they had done so far.

The Bologna Declaration says that *quality assurance* should be promoted at European level “with a view to develop comparable criteria and methodologies”. In the Prague communiqué this is elaborated further. The ministers stressed the importance of quality in higher education and the need for links between recognition and quality assurance. The ministers urged three partners to co-operate in the necessary development work: the quality assurance agencies, academia and the students. In a crucial passage the ministers “emphasized the necessity of close European co-operation and mutual trust in and acceptance of national quality assurance systems.”

Quite obviously the ministers expect that this triangle – agencies, academia and students – will produce some results in this field in the near future. Between the lines one can possibly read that if results are not produced, there will be a political decision nevertheless; the risk is that it will be taken over the heads of those involved. At the same time it is obvious that it does take time to come to grips with this task. Most countries have quality assurance in one form or another.

Some countries stress accreditation, that is a minimum standard, whereas others put more emphasis on quality development, that is a more process oriented approach. Some countries – such as the UK and the Netherlands – were very early in testing various forms of quality assessments, whereas others started this work only late in the game. The agencies mostly have their mandate from the politicians, which can produce some suspicion among academics. The students have to choose if they are involved in the process as consumers (consumer protection) or as junior partners in the academic community and thus themselves partially responsible for quality issues. Amongst these difficulties one can say that there is at least one threat that all partners involved seem to agree on: A huge, all-European and co-ordinating quality assurance body in Brussels or elsewhere must be avoided.

A short comment on *the European dimension* is that in practical terms it has been linked to the idea of setting up joint programmes. These would be programmes jointly organized between two or more countries, with degrees from one or both of them. The fact that the student in such a programme spends part of his or her time in another European country contributes to promoting the European dimension.

## **Discussion**

The Bologna process contains so many components that it is natural that at the moment there are a great number of aspects under discussion. This chapter confines itself here to just a few of them, which concern basic principles in the development of higher education in Europe.

Does the Bologna process lead to a standardization of higher education across European borders? Is the ultimate goal *harmonization of all education, or is the process oriented 'only' towards*



*convergence?* A common credit pattern, a comparable degree structure, quality assurance mechanisms – don't they all go in the same direction, that is a streamlined or harmonized higher education system? The answer is no, both for ideological and practical reasons.

Very few people involved in higher education are prepared to give up the cultural richness that follows from different national contexts. European variety is a valuable asset, and it should be safeguarded. This is not in conflict with the idea of creating a framework for different national systems to develop along the same lines in a co-ordinated way. Another argument against harmonization is that it must be practically impossible to streamline all European higher education. This would mean, for instance, that a central European body should be given the authority to decide on an ocean of curricula – and this is not practical policy. It is exactly for this reason that accreditation and quality assurance must build on mutual trust for national systems, not a big control apparatus. What one can foresee, though, is probably an increased regionalization of European higher education – regions in the sense of national regions in different countries that are neighbours that start co-operating across borders (for example the Danube region), or neighbouring small countries doing the same (for example the Nordic countries).

*Is the Bologna process market driven, run by politicians or does it stem from genuine academic needs and wishes?* The answer from the author of this paper is that the Bologna process is driven by political aspirations but with academic wishes more and more in focus. As we have seen, it started among politicians. Academics have to admit that reforms on their domain sometimes have been initiated by the political power, even though such reforms could – or should – have been initiated by the academic side. Wise politicians realize that such a complicated sector as higher education cannot be changed unless the main actors – staff and students – are involved. Wise politicians

also realize that they should not go too far into the academic sphere. In the basic documents they solemnly state that universities' independence and autonomy must be respected. This kind of statement belongs to the ordinary jargon in such circumstances. It is important for the success of the Bologna process that politicians prove that this is more than lip service. On the other hand, they expect from the academic side that higher education institutions respond to societal demands. Who amongst academic leaders can argue that their institutions should be immune from changing needs?

What about the market? The political desire that a student graduating after three years of study should be 'employable' might lead to the question if, at the beginning of the process, industrialists had asked the politicians to produce a cheap labour force. This question will probably never receive an answer. What one can see is that industrialists have not been very visible in the ensuing operations. They are much more active in the field of European research, where the academic side seems to have every reason to complain about its lack of influence in comparison with the industrial side. However, the market and a commercial ideology come to the forefront when free trade is discussed within GATS, the General Agreement on Trade in Services. Should higher education be regarded as goods that can be traded as any other goods? Or does higher education belong to the common or public sector, where there are restrictions to trade? In the Prague communiqué it was clearly stated that higher education is a public good; this was a rapid answer and a first reaction to GATS. In this question, politicians, academics and students have so far joined forces, against the market.

Most European higher education systems are nowadays so vast and contain so many students of different orientations and aspirations that it is difficult to speak about them as one single entity. In most countries higher education consists of various sub-sectors. The

traditional one is constituted by the universities. Then there is a more vocationally-oriented sector (for instance the German *Fachlockschulen*, the Finnish *Yrkeshögskolor*). Recently a third sector has increasingly attracted attention: institutions that provide training for young people having finished school but not feeling at home in either of the two sectors. For the moment we will leave this third sector outside the discussion.

Most countries have a binary system, i.e. the first and the second sector are separated from each other. Finland is a good example. In some countries practically all post-secondary education is organized in one single system; Sweden is a good example of this comprehensive model. All these systems have in common a certain degree of conflict between the various sub-sectors. With some oversimplification one can say that the vocationally-oriented sector envies the universities their research money and the prestige that follows from it, and the universities envy the other higher education institutions their success with politicians. There has been a tendency for governments to prioritize this sector financially. The Bologna Declaration initially added some fuel to this conflict. Universities in some countries felt threatened. If a common degree structure was to be introduced, then a degree from a vocationally-oriented institution would be equal to a degree from a university – this was the argument. Could the Bologna declaration be used as a lever for the other sector to be raised to university status? It was important that developments during the first years showed that even in a Bologna system countries could choose to have a binary model. The result is that this potential tension has diminished considerably. Now one talks about a Bachelor's but also about a professional Bachelor's. The conflict may remain, but if so more for national than European reasons.

A general problem is definitely the lack of knowledge about the Bologna process among ordinary academic teachers. In a way the process has been pushed forward by a combination of political, academic and student leaders; it can be seen as a project for the establishment of an elite. If the process is successfully pushed forward, then more and more people on the academic workshop floor will be involved. The same is true of students. But they have little reason to listen until changes are introduced in their practical day-to-day work or studies. Changes in the degree structure or the introduction of a new credit point system will probably be an efficient way to start informing academic staff and students about the Bologna process, its background and its practical implications. All channels for dissemination of information must be used. It is positive that, at least in the Nordic countries, some of the trade unions are engaging in such campaigns.

### **Closing comments: a personal view**

The time schedule for the expected achievements described above is the first decade of the third millennium, as it was solemnly stated in the Bologna declaration. The following is an attempt to summarize possible or probable developments:

- some technical questions will be solved (some of them have already been dealt with);
- the degree structure is being reformed, where necessary. This takes time; there are still problems that must be tackled, but reasonable success will follow;
- the quality assurance issue is the great challenge. The period up to 2010 will be needed;
- student participation will increase; it is a field where the success rate is difficult to measure;

- bridges will be built between the two parallel processes – the European higher education area and the European research area. It is no wild guess that research training is a suitable theme to start such work with;
- new issues like lifelong learning will not be solved by 2010 – the topic has been discussed for at least 30 years without thundering success. Some progress will hopefully be made.

Ministers will go on primarily tackling problems in their own countries, which at times might seem disheartening from a more comprehensive European perspective. This has its parallels in other policy fields. Nevertheless, in the long run a distinct European pattern will emerge – on the basis of work at all levels aiming at co-ordinating national policies on a grander scale. The vision is already there, but much day-to-day work lies ahead. The basis for this is persistent and patient efforts, but also values and attitudes. Without a will to push Europe forward the Bologna process will not succeed, and not without mutual trust that can overcome suspicion and national pride. European integration started with and centres on the mobility of goods and services. People and knowledge must also move across the borders.

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