

**THE UNIVERSITIES PROJECT OF THE SALZBURG SEMINAR
VISITING ADVISORS PROGRAM**

**NOVOSIBIRSK STATE TECHNICAL UNIVERSITY
NOVOSIBIRSK, RUSSIAN FEDERATION**

April 21-25, 2002

Team Members

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Introduction

A VAP team first visited Novosibirsk State Technical University (NSTU) in October, 1999, under the auspices of the Visiting Advisors Program (VAP) of the Salzburg Seminar's Universities Project. The purpose of that visit was to assist the leadership NSTU and to discuss the issues of common concern, drawing on various national and international perspectives. The process was in no way evaluative. The goal, rather, was to bring an outside perspective to call attention to those aspects of NSTU that seemed strongest, as well as those practices or strategic directions that seemed least effective. The team leader, Dr. Harry Brinkman, participated in this first visit, and three new members were included in the follow-up team in April 2002.

The follow up visit consisted of four intense working days meeting with various professorial, student, and academic administrative groups from NSTU, preceded by an internal self-evaluation in which the University assessed its own progress in responding to the suggestions of the 1999 VAP team. The recommendations by the earlier visiting team were available at the re-visit. At the conclusion of the visit, the team met to give an oral report and have a discussion with Rector Anatoly Sergeevich Vostrikov, and we now submit this report. It consists of nine sections dealing with the major issues we were asked to examine: NSTU Governance and Strategic Development, Research and Innovation, and Quality Assurance.

1. University Strategy

NSTU, like other Russian State higher education institutions, has gone through a difficult period of survival and partial adjustment. It was successful in that it has not only managed to survive, but it has also started working toward its future as a modern Russian institution for higher education. It is to be congratulated and commended with regard to that performance.

Looking ahead, NSTU is now faced with a difficult choice between basically two strategic alternatives. Technical universities that play a national role, are usually tightly connected with strong, modern advanced technology industry, which connection is of a “chicken and egg” nature. Consequently they will have a rather specific profile. NSTU’s predecessor, as created under Soviet central planning, had a rather specific profile in its connection with the military aircraft industry. Since the collapse of that industry, NSTU has lost part of its identity. If it wants to play in the national technology league, it must be connected with a pattern of modern technology industry in its region. Such a pattern would have to be developed in cooperation with economic, political and scientific actors in the region. The strategy of NSTU in this context would have consequences for its scientific re-profiling, for the recruitment of new staff, and for re-investment in its physical infrastructure.

The alternative strategy would be that the University does not aim at a new national function in the interaction between industry, technology and universities, but commits to a strong regional function. Playing in the regional league would require that NSTU must be fairly comprehensive in its profile, including the interfaces between technology and social, economic and humanitarian sciences. This profile can be less selective than that according to the first strategy. Since the two profiles will differ, the purposes for quality will differ. A university can be an excellent player in the regional league, and the national league may have its weak players.

A national function would require participation in strong international scientific networks and in national coordination between technical universities. A predominantly regional function would involve a variety of networks on a regional and local basis, supporting the reconfiguration of available scientific knowledge for specific puzzles in the environment of the university. It must also play a big role in the coordination between higher education institutions in the region.

The Salzburg Seminar visiting team has no knowledge of the perspectives for industry and economy in Siberia. Consequently we cannot argue for a specific choice between the alternatives. The two strategies should be analyzed by NSTU, aiming at conclusions. Strategy for a technical university implies choice with regard to contexts and within contexts.

Choice for strategy is relevant for reinvestment in infrastructure and recruitment of new staff, both heavily neglected in the past period of Russian higher education. The team is convinced that NSTU should not postpone the recommended strategy analysis.

2. *The University as a Broker*

An interesting concept for understanding the identity of a university in contemporary society is that of a broker. A university is a broker between 1) internationally available scientific and professional knowledge, and 2) the need for knowledge in the environment of the university. This need will be met in education, research and consultancy. The broker must have expertise concerning both 1) and 2), and must have quality in its competence to broker between them.

This university concept makes sense, certainly for technical universities and so for NSTU, by providing “purposes for quality.” It can provide a complex of norms and parameters of “good practice,” for each university in the uniqueness of its own context. In this way a basis can be found for assessment and assurance of quality, taking into account the variety of perspectives and dimensions in the complex activities of a university. According to the broker concept, ranking of universities does not make much sense, since to a large extent their quality is in matching with their individual contexts.

The two worlds between which the university has to broker change from time to time: new knowledge emerges, and new needs and problems arise. To maintain quality, the broker must constantly innovate. Innovation and improvement are the core business of quality assurance in a university. At the level of the higher education system in the context of present day knowledge based society and economy, innovation is at stake in processes of modernization or reform. At the university level, the responsibility for innovation is an important part of university self-regulation by university and faculty management. It requires professionalism in education, research and management for the University to be an effective broker.

The broker concept highlights the interactivity between the university and its two worlds: in institutional strategy, in faculty profile, and in individual staff performance. The interaction between teaching staff and learning students is an example (cf. “discendo discimus” in the NSTU logo). So is participation of staff in national and international scientific networks. Auto-coordination with other institutions of higher education in the region, as well as participation of local stakeholders in the governance of the university are other examples of such interaction. The quality of those interactions, first of all with regard to education, belongs to the agenda for university quality assurance.

For the quality assurance of research, the broker concept provides two different, but nowadays equally important perspectives: contributing to new knowledge in the international business of scientific research, and contributing to the handling of local problems outside the university. But consultancy work and recurrent education, next to participation in mass higher education for degrees, are also dimensions of the function of universities in modern knowledge based societies.

3. *Research and Innovation*

The biggest problem of NSTU, as seen by Rector Vostrikov and his team, is to raise the quality of education and research. The VAP team shares the view that this is the most general problem of any university worth that name and strongly supports the commitment to that way of thinking. We also see progress in that direction at NSTU, in comparison to the situation during the previous VAP visit three years ago, as shown by the higher rate of academic degrees (claimed even to be the highest one among technical universities in Russia); the development of previously non-existing quality assessment of the staff and faculties, which covers also research; and the apparent growth of common understanding of the value of research, not only for the education process but also for keeping pace with industrial development, etcetera.

Nevertheless, it is a process and the quality for today is never good enough for tomorrow. Keeping in mind the constantly changing world, the cross-road situation of NSTU, and new challenges, the team has extensively discussed the problem of **research** within NSTU, particularly in connection with the proposed “broker concept,” and has some remarks and suggestions. So let us first list the observed challenges of the process and then proceed to proposals.

In spite of all the progress, research activity remains of secondary importance. Its main value is still seen to be in support of education, the level of courses and proper attitudes of the teaching staff. This agrees with the Russian tradition, where research has been concentrated principally in (sometimes even monopolized by) the Academy of Sciences, but disagrees with the policy of leading technical universities in the world, where research has become the decisive factor of their value and strong influence upon technological development. Without good research, the university is doomed to become of secondary importance itself.

At present, and with respect to research, all Faculties of NSTU are equal, which means that all kinds of research are equally supported. It seems to be a waste of rather modest financial means and probably results in the loss of some chances through the neglect of a concentrated effort.

NSTU has a passive character, rather than a proactive one, because of the view that research should hold a secondary role. Research projects are taken on at random, concluded or not. Meanwhile, the University researcher waits to receive an engagement in another project. In addition, all research projects and all publications remain equal in priority to the University, irrespective of their real meaning and influence outside of the institution.

The lack of an active interface between NSTU and local industries makes the influx of scientific research rather weak and random. Research projects come mostly through personal ties while NSTU does not play an active role in the process.

We give credit to the Rector and his team for introducing an obligatory quality assessment. However, having looked through two successive reports (for the years 2000 and 2001) we have the impression that research is still an insignificant chapter in them. The team preparing such reports apparently needs additional

encouragement (the best way to obtain reliable research assessments currently seems to be to turn to peers).

In short, there seems to be a commitment that did not exist in 1999, but the commitment should be strengthened and based upon a deeply imbedded strategy for NSTU as a whole.

Coming now to recommendations, let us note at the very beginning that the time of our stay was too short to gain a true knowledge of the discussed issues. Although all our recommendations can be viewed as elements of a proposed common research strategy, the puzzle should be completed and assembled by NSTU itself.

An essential part of the NSTU strategy should be to raise the internal value of research and promoting it to be an essential and the most dynamic factor of the further development of the University. In an agreement with the proposed overall strategy, this requires close contacts with the most advanced industry, and the research strategy should be selective. This does not mean putting a ban on some research projects, but rather the promotion and support of the most valuable ones. Promotion and support mean more fundamentally and closely connected with the selected directions, involving active and quickly growing groups, etc. It seems strongly advisable to select, with that end in mind, a system of incentives and awards for the most active and effective researchers.

Experience shows that an active interface between NSTU and industrial enterprises in the vicinity might be of great assistance in this process. This interface could take the form of an industrial park, for instance, co-owned by NSTU. Whatever form the interface would take, we recommend that NSTU form a board consisting of representatives of NSTU (Rector and Faculties), representatives of the municipality (the mayor of the city) and some more important industrial enterprises. Properly led, this body might become an active and effective link between NSTU and the technological environment. It may analyze local needs and the ways in which NSTU might be helpful, but it may also initiate a new development on its own. Working on a permanent basis, such a body could play a great role and become of invaluable importance not only to NSTU but also for the city and region.

The defense of intellectual property must become an essential part of the research strategy at NSTU. This problem is of great complexity and requires legal solutions from the state which are far beyond the range of NSTU. Nevertheless, some solutions can be achieved locally or, at least, discussed locally and then presented to the authorities and lobbied at the State level.

4. Academic Programs and Instructions

We did not have an opportunity to review the academic programs and instructional patterns closely at NSTU during our brief visit. However, we did gain a good bit of insight into both the changing nature of the program offerings and the attention being paid to improving the educational process.

Regarding programmatic changes, we particularly noted the program/Faculty additions in the humanities and some professional fields and the developments in distance education. These reflect attempts to broaden the base of NSTU's offerings as a more comprehensive university, where there is interest in serving a larger and more diverse clientele.

Specifically there are some good practices that we want to encourage and others that might be emphasized more than they are at present. A list of things for consideration could include:

- a) Have each Faculty develop a Strategic Plan/Set of Priorities for their own programs and offerings. Some units seem to be doing this already. Special attention should be paid to provisions for planning relationships, programs or offerings that cross Faculty groups and respond to demands for new areas.
- b) Develop a set of Desired General Education Outcomes/Competencies that are expected of all students (not just content or course offerings) and a means of assessing them. These should reflect what would prepare NSTU students for the next decade. (It might include things such as: level of computer literacy, quantitative reasoning skills, group/teamwork experience or skills, non-Russian language proficiency, verbal/written communications skills, etc.)
- c) Provide incentives for Interdisciplinary Offerings (cross Faculty)—programs, student-designed majors, etc. Efforts are being made but, given the difficulties of cooperative projects, special attention to promoting and supporting these efforts by the central academic administration needs to continue.
- d) Continue to improve Computer Access—especially for students. This is a significant demand for academic administration in institutions around the world.
- e) Emphasize Electronic Developments in the efforts to expand the library and the publishing activities of the University. The availability of electronic resources is expanding world wide and needs to be a high priority to assure access and to extend NSTU's reach to others in the larger academic community.
- f) Continue efforts to develop Distance Education. Designing curricular and instructional alternatives, an effort that is gaining momentum, should continue with an emphasis on serving the part-time student. These efforts also provide significant opportunity to assist professors in redesigning their courses and expanding their expertise in using newer technologies for content-delivery—both for distance students and for those on campus. An important area to emphasize is expanding professors' capability to author web based courses on their own.

g) Begin designing courses and programs around credit-based modules. This will be important for the future exchange of offerings and students from other institutions and countries.

h) Continue to focus on and emphasize strategies of and approaches to active instruction and student-oriented learning approaches.

5. Expanding Quality Improvement

NSTU is already making extensive efforts to improve the quality of its educational programs, course offerings and instructional and student learning processes. We were pleased to see evidence of increased effort and of faculty participation in these activities since the prior VAP team visit. In general, we support the focus and encourage continued development and involvement in these quality improvement activities. Some more specific comments:

a) Continue and expand the emphasis on Student Learning Outcomes by degree program, for general education and for new professional programs. This requires faculty attention to defining the educational purposes, the desired outcomes, in designing educational techniques for achieving them and means of measuring or assessing the results.

b) Continue to expand and develop Faculty Capacity for and Involvement in student learning assessment.

c) In the Distance Education arena, give primary focus to learning outcomes in the design of offerings so the quality of learning can be assessed. The legitimacy and value of distance education will be largely dependent on the capacity to show what it accomplishes educationally.

d) Introduce Teaching Awards or other modes of recognizing outstanding faculty performance in the educational function. E.g. for interdisciplinary initiatives, distance education design, team teaching, creative uses of technology in the classroom, etc.

e) Similar awards for Outstanding Research could be included, if this has not already been done. E. g. for young researcher, outstanding publication, research that influences practice, etc.

6. Human Resource Development – Providing Leadership and Innovation for Tomorrow

While we did not explore this area in depth, several issues emerged that suggest the need to give special emphasis to this areas, both for faculty and administrators.

a) For faculty, there should be continued efforts and greater priority given to attracting new, young professors.

b) Exploring further use of joint faculty appointments among different Faculties as well as with industry could be a way to support more interdisciplinary work among Faculties and stronger links with industry.

c) One of the most intractable problems facing NSTU is faculty turnover which allows for the addition of new professors. The development of retirement incentives, opportunities for reduced appointments and other means should be vigorously explored.

d) A focus on faculty and administrative training opportunities that allow staff to learn new skills and approaches could be more systematic. This might include assistance in finding and arranging opportunities to participate in off campus and/or international exchanges.

7. *Building Facilities for the Future*

The NSTU administration is clearly aware of the need to maintain facilities and to build new ones to support the institution and its faculty in its quest to stay current, broaden its mission and improve its quality. Despite the financial difficulties of the past decade, we observed good developments around campus: improvements to dormitories, a new gymnasium and several ancillary facilities. But growth pressures and deferred maintenance have placed strains on the campus and make this an area needing constant and high priority attention. The continual updating of facilities is critical to take advantage of any improvements in economic and financial conditions. The following are recommendations:

a) Establish a regular program to assess the needs and set priorities for renovations and new facilities.

b) Develop proposals and cost estimates for these priority projects that can be presented to potential funding sources.

c) Create a systematic approach for identifying resources for these priority projects.

8. *Organizational and Administrative Development*

Several changes in the institution's governance pattern, administrative structure and management style were apparent and seem to be moving in a positive direction. The more open, yet rational management style was clear. Some observations:

a) Decentralization: While it is clear that this is taking place and we are supportive, it might be useful to see how patterns of decentralized administration are supporting institutional priorities and how cross unit coordination is taking place where desirable.

b) Development Office: We were aware of several people who seemed to have specific responsibility for some form of external relations that attempt to facilitate relationships with external groups and even to seek funding. However, it was not clear that there was an overriding set of priorities, a strategy and a means of

systematically identifying funding sources. The creation of an executive level Development Office with responsibility for coordinating external relations (government relations, fund raising, proposal development, designing joint ventures etc) might be worth consideration.

c) Finally, despite our respect for Russian traditions and our recognition of the unique linkages between government and higher education, we still encourage NSTU to take an aggressive stand in its relationship with Moscow and the Ministry. This would probably necessitate the involvement not just of NSTU but of coalitions with other universities and other industrial groups in the Novosibirsk region.


Concluding remarks


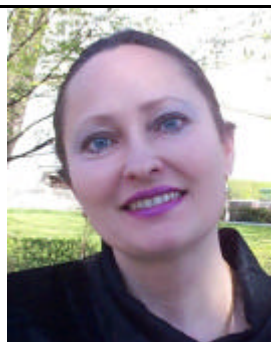
The Visiting Advisors wish to thank the Rector, Professor Anatoly Sergeevich Vostrikov, the Vice-Rectors and all staff and students who made the visit to NSTU such a stimulating and informative experience. The hospitality provided by NSTU has been overwhelming. The hosts have given generously of their time, made excellent arrangements for the visit, provided comfortable accommodation and excellent cuisine. This has been a most enriching experience professionally, socially and culturally, and we look forward to continuing our cooperation.

The Visiting Advisors team was impressed by the progress made by NSTU and the visionary thrust for further improvement. While NSTU undoubtedly faces many problems, we have little doubt that in the interim, NSTU can develop, grow and prosper. It has considerable strengths, among them the fact that it is and is clearly perceived to be a salient institution in its own society. The University is clearly embedded in a rich and deep scientific and cultural tradition. The Visiting Advisors wish NSTU great success in pursuing its ambitious goals for the future.

The Visiting Advisors Program of the Salzburg Seminar's Universities Project, particularly the visit to the Perm State University, has been made possible by a generous grant from the W.K. Kellogg Foundation.

Visiting Advisors

<p>Harry J. BRINKMAN – team leader Netherlands</p> <p>Harry Brinkman is former president of the Free University, Amsterdam, where he served as chairman of the Executive Board from 1979 to 1996 and was a staff member in humanities (linguistics) from 1963 to 1972. Dr. Brinkman has also served as a senior advisor for the Center for Higher Education Policy Studies (CHEPS) at the University of Twente, Enschede; a member of the Experts' Council for Higher Education for the German Ministry of Education; chairman of the Dutch Foundation for Inter-university Computing Facilities (1990-1996); chairman of the Dutch Association for University Management (1983-1991) and chairman of the Dutch Inter-university Committee for Finance and Planning (1992-1996, 1980-1987). He earned an M.A. in Dutch language and literature (with Russian and history) in 1963 and he holds an Honorary Doctor of Arts in 1994 from the University of Swaziland, South Africa. Dr. Brinkman has made presentations and consulted in the field of university management throughout Europe, in Russia and in Africa. He was knighted in the Order of the Dutch Lion in 1992. In 2000, Dr. Brinkman received the degree of "Philosophiae Doctor" (Honoris Causa) from the Potchefstroom University in South Africa.</p>	
<p>Marvin PETERSON USA</p> <p>Marvin Peterson is a professor of higher education, and Director Emeritus of the Center for the Study of Higher and Postsecondary Education at the University of Michigan in Ann Arbor, USA. He has held research positions at the University of Michigan's Institute for Social Research, National Center for Postsecondary Improvement, and the Program in Higher and Continuing Education. He is a former president of the Association for the Study of Higher Education, the Association for Institutional Research, and the Society for College and University Planning. Dr. Peterson has conducted research for projects funded by the United States Department of Education, the National Science Foundation, the W. K. Kellogg Foundation, and the Ford Foundation. He holds degrees from Trinity College, Harvard University, and the University of Michigan.</p>	

<p>Roman DUDA Poland</p> <p>Roman Duda is the former rector of the University of Wroclaw, Poland. From 1989 to 1991 he was a member of the High Chamber of Parliament and served as the Deputy Minister of Education from 1991 to 1993. He taught at the Polish Academy of Sciences (PAN) for several years, where he also earned his Ph.S. in 1961. After returning to the University of Wroclaw in 1981, he served as chair of the Department of History and Methodology of Mathematics at the Institute of Mathematics. Since 1997 Dr. Duda has been a member of the Council of the International Union of History and Philosophy of Science / Division History of Science. He is on the editorial boards of several mathematical journals and editor-in-chief of <i>Mathematical News (Annals of Polish Mathematical Society)</i>. Dr. Duda was awarded an Officer's Cross of the Order Polonia Restituta and a Commander of the Leopold Order (Belgium). He completed his studies in mathematics at the University of Wroclaw in 1956.</p>	
<p>Helene KAMENSKY Austria</p> <p>Helene Kamensky is the Russian program coordinator for the Universities Project of the Salzburg Seminar. In addition to her work with the Universities Project, she is a lecturer in philosophy and Russian studies at the Universities of Salzburg and Vienna. Previously, Dr. Kamensky was a research fellow at the Institute of Scientific Theory, Salzburg International Research Center. From 1985 to 1989 she was dean of the Faculty of Foreign Languages, Novosibirsk State Pedagogical University, Russian Federation. Earlier, she served that same institution as the associate professor and senior lecturer in the department of philosophy. She holds a Ph.D. in philosophy from the department of logic and epistemology at the Russian Academy of Sciences. Her Ph.D. was authenticated by the University of Salzburg, Austria in 1993.</p>	

THE UNIVERSITIES PROJECT OF THE SALZBURG SEMINAR

Universities throughout the world are undergoing systemic changes in their governance, academic design, structure, and mission. The Salzburg Seminar's Universities Project focuses on higher education reform in Central and East Europe, Russia, and the Newly Independent States as universities in these regions redefine their relationships with governments and try to become more integrated into the global intellectual community.

The Universities Project is a multi-year series of conferences and symposia convening senior representatives of higher education from the designated regions with their counterparts from North America and West Europe. Discussion in the Project's programs focuses on the following themes:

- University Administration and Finance
- Academic Structure and Governance within the University
- Meeting Students' Needs, and the Role of Students in Institutional Affairs
- Technology in Higher Education
- The University and Civil Society

OBJECTIVES

Universities and other institutions of higher learning are seeking to reshape themselves in ways that will prepare them more fully for the twenty-first century. Even as these institutions are considering extensive systemic changes in their academic design, structure, and mission, all desire autonomy in governance and in their intellectual life. Accordingly, the Universities Project aims to promote the higher education reform process by inviting senior administrators to participate in conferences and symposia concerning issues of university management, administration, finance, and governance.

THE VISITING ADVISORS PROGRAM (VAP)

The Salzburg Seminar launched this enhanced aspect of the Universities Project in the autumn of 1998. Under this program, teams of university presidents and higher education experts visit universities in Central and East Europe and Russia at the host institutions' request to assist in the process of institutional self-assessment and change. By the end of 2001, more than thirty VAP visits will have taken place to universities in East and Central Europe and Russia. A full schedule of visits is planned for 2002 and beyond. The addition of the Visiting Advisors Program brings to the Universities Project an applied aspect and serves to enhance institutional and personal relationships begun in Salzburg.

The Salzburg Seminar acknowledges with gratitude the William and Flora Hewlett Foundation and the W.K. Kellogg Foundation, which are funding the Universities Project and the Visiting Advisors Program respectively.

FOR MORE INFORMATION

For more information regarding the Salzburg Seminar's Visiting Advisors Program, the Universities Project, and Salzburg Seminar programs, please contact one of the Seminar's offices below.

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