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Distinguished Guest;

It is a great pleasure for me to be with you today to discuss an increasingly important aspect of the financing of higher education, namely revenue diversification through donations and fund raising. In the past, I have been actively involved in the financing of higher education. As the Prime Minister and the President of the Republic of Turkey, I had direct responsibility to see to it that our institutions of higher education were adequately funded from the public purse as circumstances permitted. Later, as an alumnus of İstanbul Technical University, I led several campaigns to encourage alumni to make donations to their alma mater. At that time, Professor Sağlamer was the Rector of İTÜ, and she did a very good job of investing those funds in upgrading the infrastructure of this world-class institution with which I am proudly associated.

İTÜ was founded as the Imperial Naval College, *Mühendishane-i Bahri-i Hümayun*, in 1773. It is the first non-religious educational institution in the whole Müslim world, and the oldest Western-type of higher education institution in my country, which the Republic of Turkey inherited from the Ottoman Empire first as the Higher School of Engineers, and later as today's İstanbul Technical University. Thus the history of this institution is intimately entwined with the Ottoman attempts at reform spanning a period of 150 years, and the accomplishments of the Republic of Turkey in nation-building, becoming a respected member of the civilized world and integrating into the global knowledge economy. It is my perspective on these issues that I would first like to share with you before I go into the topic we have at hand today, for I believe that the two are closely linked.

The Ottoman Empire, founded in 1299, played a formative role in the shaping of the Mediterranean and European culture, civilization and political landscape; it was one of the major European powers. When in 1923 it withdrew from the stage of history, some thirty five states were created out of its territory. The Republic of Turkey was one of the states that came into being from the ashes of this liquidated empire.

Per capita GNP in 1923 was only US \$ 35 at 1948 producer prices, or approximately US\$ 600 at mid-1990s prices, and nearly half of this was committed to pay the Ottoman debt to European lenders and financial institutions, the last installment of which was paid in 1997. But the biggest challenge facing the new republic was the development of human resources. Literacy rate in 1923 was estimated at fifteen percent. An entrepreneurial class had to be developed as well as educating and training a workforce to serve the needs of a functioning free-market economy, nearly starting from scratch. Masses who were formerly the subjects of a multi-ethnic, religious empire had now to be educated in the civics of secular nation-state, which was to be

governed by the rule of positive law. In short, a national system of education had to be developed and expanded throughout the country, both to serve the needs of the economy and to educate the citizenry. Education was to be the main driver for change and socio-economic development.

In 1923, Turkey had 4,894 primary schools with 10,238 teachers and 341,914 students. The number of secondary schools of all types was 159, where 1,892 teachers taught 13,693 students. Higher education comprised 9 institutions with an academic staff of 307 and a total enrolment of 2,914. Seven of the higher education institutions, including the Naval College mentioned above, were specialized non-university institutions similar to the French *Grandes Ecoles*, and six of them were founded in the 19th century. Robert College in İstanbul, on the other hand, was a typical American liberal arts college. Founded by missionaries in 1862, it was the first American institution of higher education outside the US.

A university-type institution of higher education was first conceived in 1846. To avoid resistance from *ulama*, the obscurantist clerics in the *madrasas*, it was named *Darülfünun*, which is a combination of Arabic and Persian words and means "The House of Sciences". Still, it took 54 years before it could be firmly established in 1900. This was the ninth institution of higher education that the Republic inherited from the Empire, and it was not a "university".

Two educational tracks had evolved from the Ottoman attempts at westernization and reform during the 19th century, a secular one and a religious one. That rationality, not spirituality, was to be the basis and the source of legitimacy of the state was self-evident to the founders of the Turkish Republic. This meant that the mistake committed by the Ottoman reformists of the 19th century of allowing the religious to coexist in tandem with the secular would not be repeated. The Law of Educational Unity, which abolished all religious schools, including the *madrasas*, was enacted in 1924, just one year after the proclamation of the Republic. A decade would pass before the reform of higher education. Acting on a comprehensive report prepared by Albert Malche, a Swiss professor of law, Atatürk himself was the intellectual leader of the reform. The notes that he took in his own handwriting in the margins of the report include his elucidation of such complex concepts and issues as the reconciliation of academic freedom and university autonomy with accountability, the central role of the faculty of arts and sciences in preparing students for the professional courses in other faculties, an educational mission based on research and teaching rather than rote-learning, the importance of foreign languages, part-time jobs for needy students, student/staff ratios, and an adequate level of funding.

Darülfünun was transformed into İstanbul University in 1933. The young university became host to a large number of Jewish professors who were fleeing persecution by the Nazis, and soon became one of the leading centers of learning in the world. That the newly founded university was able to open its doors to an influx of a large number of Jewish professors at a time when European powers were rushing to appease Hitler is one of the proudest periods in our history.

The first multi-party elections were held in 1946. By then, Turkey had two more universities: İTÜ, which was upgraded to that status in 1944, and the newly founded Ankara University in the capital.

In 1950, the Democrats came to power on a less etatist and more free-market oriented platform. For the first time, the Turkish horizon in matters related to education was extended beyond the Atlantic to the USA. In the period 1955-1957, four new universities were founded. All were campus universities modeled after American state universities. Middle East Technical University in Ankara (METU) would be governed by a lay board of trustees, and an appointed, rather than elected, rector and deans.

I would like to say a few words about the funding system that was unique to METU, because I believe that it is pertinent to the topic of this workshop. The budget of METU was technically a lump-sum donation by the Parliament. The board of trustees was empowered to combine this sum with the revenues it generated from other sources, including a relatively modest level of fees paid by students, and prepare the expenditure budget of the institution. The board also had the power to set salary scales for both the academics and the administrative and technical staff. It could own, buy and sell property, and even take loans within limits. Thus the young Republic had been able to devise and put in place a financial and administrative structure in one of her institutions nearly half a century ago, which European institutions are presently aspiring to. Unfortunately, this advanced funding scheme became victim to the political instability and the resulting turmoil that pervaded the 1970s in Turkey. I entered politics in the mid-1960s and became the Prime Minister after a landslide election victory in 1965. Gross enrolment ratio at the tertiary level was only 4% in 1965 in Turkey. The rate of population increase and economic growth had started putting the Turkish higher education system under unprecedented demographic pressure.

Hacettepe University was founded in Ankara in 1967, and with Robert College converted into a state university, Boğaziçi University, the number of universities had increased to nine. Thus at the beginning of the 1970s, the Turkish higher education system comprised nine universities, a number of 4-year non-university institutions similar to the British polytechnics and the German *Fachhochschulen*, 3-year teacher-training colleges, and 2-year vocational schools similar to the community colleges in the US.

However, the system was far from absorbing the demographic bulge, it not only had to be expanded, but also spread out geographically throughout the country to meet the increasing demand in an equitable manner. This was a major challenge facing the governments I chaired. Ten new universities were founded outside the three big cities, İstanbul, Ankara and İzmir, bringing the total number to 19. New academies and 2-year vocational schools were founded, and Non-formal Education Institution (Turkish acronym YAYKUR) was established under the Ministry of National Education to start distance education by correspondence in 1975. The Student Selection and Placement Center (SSPC, Turkish acronym ÖSYM) was established in 1974 to prepare, administer, proctor and evaluate a central, multiple-choice selection and placement test for university admissions.

By 1980, the total number of post-secondary institutions in the country had reached 166, with a total enrolment of over 237,369 and a total academic staff of 20,816. It still was not possible to catch up with the rate of population increase, which was just over 2% per year, a nightmarish rate for developmental economists, and the gross enrolment ratio remained at the unacceptably low value of 6%.

Turkish higher education was radically overhauled in the 1980s. The system, which was effectively quaternary, became unified and the Council of

Higher Education was established as an intermediary body charged with the planning, coordination and governance of higher education in the country. The new Constitution also allowed institutions of higher education to be founded by non-profit charitable foundations.

In 1991, when I became Prime Minister once again, there were 29 universities in the country, including the first private university founded in 1984. Total enrolment was 749,921 students with 34,469 academic staff and a gross enrolment ratio of 15.3%, including students in the vastly expanded distance education programs.

In the period 1991-2000, I served first as the prime Minister, and then as the President of the Republic. During that time, 44 new universities were founded with 19 of them by non-profit foundations. Presently, the Turkish higher education system comprises 54 state universities and 23 private universities. As of the 2004-2005 academic year, total enrolment in the system is 2,106,351 students with 90,898 academic staff and a gross enrolment ratio of 36.8%. The Turkish higher education system is the fifth largest system in Europe and the 15 largest system in the world.

These numbers correspond to an over 700-fold expansion of the system in 82 years since the foundation of the Republic. I served my country and my people in 50 years of the 82-year Republican period, and during that time put my signature under the founding acts 57 of the present 77 universities either as the Prime Minister or the President of the Republic. I am naturally very proud of having made a contribution to Atatürk's ideal of "achieving contemporary level of civilization" through expanding educational opportunities for my people. But more, much more needs to be done. Let me elaborate on what I mean by this. Starting about 25 years ago, the word "knowledge" began to be used as an adjective, signifying the transformation from the industrial to the knowledge society and the emergence of the global knowledge economy. This, as you all know, is an ongoing process with an accelerating speed, driven by dizzying advances in information, communication, transportation and biological technologies. What characterizes this transformation more than anything else is the increase in the relative importance of knowledge and people with knowledge as production factors relative to physical and financial capital. Most jobs in the global knowledge economy now require education and training at the higher education level.

Recent estimates by UNESO point to the existence of a threshold level in the gross enrolment ratio at somewhere between 40 to 50% of the age cohort, which must be surpassed if a country is to be a player in the global knowledge economy.

Recent figures by OECD show that the average spending per student in higher education on a purchasing power parity basis is US\$ 2,234 in the US and only US\$ 4,784 in Turkey; the OECD average is US\$ 12,319. Thus if the gross enrolment ratio in Turkey is to approach 50% from its present level of 36.8%, a very significant investment is required both to create new capacity and also to upgrade the existing capacity to the quality level that allow Turkey to compete with other OECD countries. This is part of what I meant when I said above "more, much more needs to be done".

The other part is concerned with knowledge creation. The national R&D system which served the industrial society very well is being supplanted with the national innovation system. The latter is something much less structured, but much more complex than the former. But what the two have common is the national higher education system acting as the heart and the brain of the system, pumping knowledge and people with knowledge to the economy. It now appears that the world is headed towards another cleavage, this time along a scientific and technological, rather than an ideological line, with the US and a small number of Western countries producing scientific knowledge and knowledge-based industries, and China and India taking on increasingly central roles in the global supply chains-the former as a manufacturing hub and the latter as a service hub.

The US is the undisputed leader in scientific knowledge production; 34% of scientific articles published since the year 2000 has originated from the US. Japan, the UK and Germany, with a 9% share each are far behind the US, and followed by France 8%, China 5%, Canada and Italy 4% each, Russia, Australia, Spain and Netherlands 3% each, and the rest of the world 8% (Friedman 2006). The share of the US in terms of most frequently cited articles is even greater with 44%. Furthermore, 70% of the Nobel laureates are presently employed in American universities. It is also relevant to note that about half of the scientific articles are being produced in English-speaking countries, and that China is fast catching up, having already passed Russia, a former scientific giant, by a considerable margin. As of 1980, the number of publications by Turkish academics in journals covered by citation indices (Science Citation Index, SCI, Social Science Citation Index, SSCI, and Arts and Humanities Citation Index, AHCI) was only 449, and with 390 articles Turkey ranked 41st in the world in terms of publications in SCI journals. In 2003, Turkish academics published a total of 12,751 articles in journals covered by the three citation indices. This accounted for 1.1% of the global publications, and put Turkey in the 22nd place in the world in terms of publications in SCI journals. The number of articles increased to 14,371 in 2004, which corresponds to 1.3% of the global scientific output and puts Turkey in the top 20 countries in the world. What now needs to be done is to establish structures and mechanisms through which the scientific potential in the Turkish higher education system can be channeled into the productive

sectors of the economy and contribute to its competitiveness in the global markets.

As part of the transformation to the global knowledge economy, a global higher education market has emerged, with annual revenue estimated at tens of billions of dollars. This market is characterized by intense competition among traditional institutions as well as new types of providers, which were made possible by advanced educational technologies based on new information and communication technologies. There is intense competition in this market not only among institutions, but also among countries, and not only for revenues, but more importantly, for creative young minds, as future employees in knowledge industries in the host countries where they have received their education and training.

Presently there are over 2 million students attending institutions of higher education outside of their own countries. The US is by far the major host country with 572,509, and China and India are the two major source countries with 181,684 and 87,978 students abroad, respectively. Thus it should come as no surprise that these three countries have emerged as the top three key players in the global knowledge economy.

In the past decade China and India have also made enormous progress in developing and expanding their national higher education systems. In 1950, there were only 132,900 students in the Chinese higher system and the gross enrolment ratio was a meager 0.26%; the numbers today are 22,525,000 students with a gross enrolment ratio of 21.89%, and China has overtaken the US as the largest national higher education system in the world. Most of this development occurred in the last decade. During that period the number of students in India increased from 6.2 million to 9.3 million, and her gross enrolment ratio now stands at 11%. According to a recent survey by the Financial Times, the world is faced with a "youth bulge". Presently, 2.8 billion people are under 25 years old, and 1.1 billion people are between 25-24 years of age. By 2015, the global youth population will reach 3 billion, with 2.5 billion of them living in developing countries. Educating the youth to be productive citizens employable in the knowledge-driven global economy is now a major global challenge. There is also fierce competition among developed nations to attract the best and the brightest of the world's youth first as students in their higher education systems and then employ them as knowledge workers and researchers.

The European response to these developments has been the so-called Bologna Process and the Lisbon Agenda. The Bologna Process is the name given to the series of activities undertaken across Europe following the signing of the Bologna Declaration by ministers responsible for higher education from 29 European countries on June 19 1999 in Bologna University, the oldest university in the world founded in 1088. Turkey soon joined the process in Prague in April 2000, and the number of signatory countries is now 45. The ultimate aim of the process is to create a European Higher Education Area by 2010, which can compete in the global higher education area for revenues and young minds, and, at the same time, to increase cohesion in Europe through

a series of activities ranging from legislation to various collaborative programs supported by funds from the European Union.

The challenges of competition, globalization, and the knowledge-driven economy were further acknowledged by the members of the European Council at their meeting in Lisbon in March 2000. They agreed on the following strategic target for 2010: "To become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable growth with more and better jobs and greater social cohesion." In the view of the council, these changes required not only a radical transformation of the European economy but the modernization of social welfare and education systems, as well. This was to be achieved by a strategy predicated upon a single market, a single currency and a single European approach to research through the creation of the European Research Area.

Clearly, the Lisbon Agenda is much more comprehensive than the Bologna Process. However, competitiveness in the global knowledge economy is based first and foremost on the availability of knowledge workers, that is, those who work in high-technology manufacturing industries and those who work in knowledge intensive industries such as R&D. The majority of both types of jobs obviously require education and training at the higher education level and continuous upgrading of skills through lifelong learning. The EU has a particular comparative disadvantage in the R&D area; the number of researchers in the EU accounts for only 5.7 per 1,000 workforce while the corresponding figures are 8.1 per 1,000 for the US and 9.1 per 1,000 for Japan.

Thus higher education institutions across Europe are expected to play a central role if the targets set forth in the Lisbon Declaration are to be achieved. This was recognized by the European Universities Association when over 600 representatives from its member institutions from 47 countries met with EU Commission President Jose Manuel Barroso from 31 March to 2 April 2005 in Glasgow. The resulting Glasgow Declaration, aptly entitled "Strong Universities for a Strong Europe", sets out actions which will ensure that universities will make their full contribution to building Europe as a major player in the global knowledge economy. The Action Agenda adopted is based on the inextricable linkage between the Bologna Process and the research and innovation goals of the Lisbon Agenda. The Agenda comprises 34 items covering a broad range of issues. It highlights the insufficient level of funding of higher education in Europe compared to other systems and calls for an adequate level of funding if the targeted quality levels are to be achieved.

Item No. 32 in the agenda is pertinent to the topic of this workshop, and I will repeat it verbatim:

"Universities are working to diversify their funding streams. They are committed to exploring combined public/private funding models and to launching a structured and evidence-based within European Universities Association and with stakeholders. They will develop full economic cost models".

I will now take the remaining part of the time allocated to me to share with you my experience in the organization and the implementation of a fund-raising and donation campaign among the alumni of Istanbul Technical University, and other ten universities namely; Kayseri-Erciyes, Bolu-Abant İzzet Baysal, Muğla, Isparta-Süleyman Demirel, Kocaeli, Marmara, Niğde, Gaziantep, Zonguldak-Karaelmas, Çanakkale-19 Mayıs universities. Donation made to these universities is around 500 million dollars. It was the result of a campaign carried out during my presidency.

Süleyman DEMİREL