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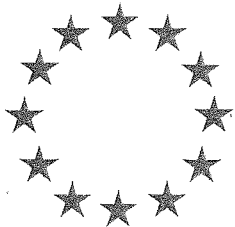
Università degli Studi di Bari

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NOVEMBER 20-22, 2003

Bari - Italy



Azione Jean Monnet  
Polo europeo  
"Euromediterraneo"

HIGHER EDUCATION

IN

THE GLOBAL KNOWLEDGE

ECONOMY

Prof. Kemal GÜRÜZ

UNIVERSITÀ  
degli STUDI di LECCE

*The Community of Mediterranean Universities is pleased to present the report "Higher education in the global knowledge economy" prepared for presentation at the C.M.U. Assembly (November 20-22, 2003, Bari - Italy) by Prof. Kemal Gürüz\*.*

*With remarkable scientific rigour this paper opens a cultural debate to all Mediterranean Universities, at the same time is a stimulating invitation to make a more in-depth analysis of the this theme.*

*Its specific aim is the enhancement of knowledge on Mediterranean issues, through teaching, reflection and debate, and through the far reaching influence of the activities of Universities, Centres of Excellence and professors .*

*This thinking, whose elaboration is up to the Mediterranean intellectuals, is a natural consequence of the ideas of F. Braudel, the great historian of the Mediterranean, who referred to it as "circulation of the cultural pollen" .*

*It is just for this reason that C.M.U. intends to open the debate on this paper to all Universities and to the entire the intellectual world of the Mediterranean..*

Prof. Luigi Ambrosi  
C.M.U.'s President

*\*President of the Higher Education Council of Turkey.*

# COMMUNITY OF MEDITERRANEAN UNIVERSITIES

## PROGRAMME

NOVEMBER 20, 2003

Arrival of Participants

04.00 p.m. *Meeting of the Council*

NOVEMBER 21, 2003

**Frescoes Hall – Palazzo Ateneo – University of Bari**

09,00 a.m. Registration

09,30 a.m. Welcome Address:

**Prof. Giovanni Girone**, *Rector Bari University*

Bestowal of the Mediterranean Prize:

**Prof. José Vidal Beneyto (Spain)**

**Lecture:** “*The global public goods of the Mediterranean*”

10,30 a.m. Coffee Break

11,00 a.m. Report by **Prof. Luigi Ambrosi** - *C.M.U.'s President*

### **Agenda of the Assembly:**

1. Amendments to the Statute:
  - ✓ Merging of the Multinational Networks (RMEI);
  - ✓ Full fledged member in the Council of the Bari Rector;
2. Adhesion to International Association of Universities (IAU);
3. Request of partnership by UNEC-BENIN.

12,30 a.m. **Prof. Kemal Gürüz (Turkey)** -

**Lecture:** “*Higher Education in the Global knowledge economy*”

*Lunch*

03,30 p.m. **Round Table:** Distance learning in the future of the Mediterranean  
Chairperson **Prof. Vito Leonardo Plantamura** – *Bari University*

**Prof. Marco Antonio Dias** - *United Nations University- ONU*  
“*Utilization of technology and its insertion in a global world*”

**Prof. Munter Salah** – *Rector Arab Open University*  
*Title to be announced*

**Prof. Umberto Sulpasso** - *International Multimedia University*  
*“De l’industrie du pétrole à l’industrie du savoir, le défis de l’intelligence ”*

**Prof. Ana Maria Marhan** - *Black Sea Universities Foundation*  
*“Towards a Black Sea Virtual University”*

**Dr. Mohamed Taher Miloudi** – *UNESCO* - “Avicenna Virtual Campus”

**Prof. Dumitru Chitoran**- *UNESCO* - “Academics Without Borders”

06,00 p.m. Discussion

07.00 p.m. Closing of the Works

**NOVEMBER 22, 2003**

**Department of Computer Science - University Campus - University of  
Bari**

08.30 a.m. **Round Table:** Cooperation University-Business System for a Sustainable  
Development of the Mediterranean

Chairperson: **Prof Dumitru Chitoran** - *UNESCO*

**Prof. Zile Soilihi** – *École Supérieure d’Ingénieurs de Marseille:*  
*“Action coopérative RMEI pou mettre l’innovation au service du développement durable  
en méditerranée”*

**Prof. Salvatore Distaso** – *University of Bari*  
*“University and Business System for a new strategy of International  
cooperation”*

**Mr. Paul de Guchteneire** – *UNESCO*  
*“Towards a global management of human flows? The role of international organizations  
and universities”*

**Prof. Aomar Ibourk** – *Marrakech University*  
*“Sustainable developing and employment: the Moroccan case”*

**Prof. Ida Maria Catalano** – *Bari University*  
*“La cittadella Mediterranea della Scienza”*

11.30 a.m. **Presentation of CMU-IMU agreement on “Change management” e-master  
(ASPASIA Platform)**

12.15 p.m. Practical simulation activity on computers

13.30 p.m. Closing of the Assembly



**HIGHER EDUCATION**  
**IN**  
**THE GLOBAL KNOWLEDGE ECONOMY**

**Prof. Kemal GÜRÜZ**

**CMU Assembly**  
**November 20-22, 2003**  
**Bari, Italy**

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# 1. THE GLOBAL KNOWLEDGE ECONOMY

Throughout history, knowledge, both as technical know-how and as information, of any kind has been important to mankind for improving the quality of life. What have changed over centuries, however, are the characteristics and the quality of knowledge, the relative importance of science as its source, the methods by which it is created, stored, accessed, transmitted, acquired and retrieved, the ways and institutional structures in which the producers and users of knowledge are educated and trained, and last but not least, its relative importance as a production factor.

The West since the time of Thales, Anaximander and Anaximenes some 2700 years ago on the Aegean coast of today's Turkey, which are generally considered to be the birthtime and birthplace of rational and critical thought and science, and Japan since the Meiji Restoration in 1863, have thrived on science and scientific and technological research and development.

Out of this complex historical process in which many factors interacted, particularly over the last hundred years, but especially in the last quarter of the previous century, three technologies emerged, which have begun to profoundly change our lives. These are **information and communication technologies (ICT) and biotechnology**.

The convergence of increased computing power (hardware and software) and reduced communication costs among people, institutions and countries has significantly increased the speed of production, distribution and the use of knowledge as a key production factor (superscripts indicate the references listed at the end of the text).

Modern biotechnology, i.e. recombinant DNA technology, is transforming life sciences, making huge advances in medicine and agriculture possible, where earlier methods were less successful. There is, however, a long way before the full potential of biotechnology is exploited, with many possible health, environmental and social risks to be eliminated along the way.

Radical changes and shifts occurred worldwide in the last two decades of the previous century, not only in science and technology, but also in economics, politics and social dynamics.

Miniaturization and substitution of traditional raw materials by new and advanced materials, combined with increased energy utilization efficiencies led to significantly decreased export revenues in countries whose economies depended largely on primary resource exports, including China and the USSR.

The USSR, one of the scientific giants in basic and applied research, abjectly failed to channel her tremendous scientific potential to increasing the quality of life of her citizens. The discontent of the peoples of the USSR and her satellites was exacerbated by the information about life in the West to which they were exposed through ICT slowly creeping into these countries. A point was thus reached where the USSR could no longer sustain her imperial stretch, starting from her satellites, the soviet system began to disintegrate and finally imploded, carrying with it a political system predicated upon a closed society and a centrally planned closed economy with total disregard for the individual, to the depths of history.

The socio-political changes coupled to and, to a large extent, also driven by the ICT revolution, which made it possible for peoples to become aware of and informed about events and developments in other parts of the world led to regime and policy changes around the world and radically transformed the world economy. The proportion of the countries practicing some form of **democratic governance** rose from 40 percent in 1988 to 61 percent in 1998.<sup>2</sup> Macro-economic policies predicated upon **privatization** rather than central-planning, **export-competitiveness** rather than import-substitution started to rapidly unify world markets. This process referred to as **economic globalization** is deeply intertwined with technological transformations. New tools of ICT make world's financial and scientific resources more accessible and unify markets into a single market place, aptly called the **global market**, where intense competition in all conceivable fields, including not only goods, but also services such as education and medical care, further drives scientific technological and socio-economic progress.

The convergent and mutually reinforcing impacts of **globalization** and the **ICT revolution** have radically changed not only the methods and structures of production, but also the relative importance of factors of production along with the profile of the workforce. The transformation from an **industrial society** to a **knowledge society** and a **global knowledge economy** is characterized by the increased importance of knowledge, both technical knowledge (know-how), and knowledge about attributes (information and awareness).

These complex interactions are now driving the **science and technology-based global economy**, where R&D and production are horizontally integrated in the form of networks covering production sites and laboratories in a number of countries, making it possible to outsource knowledge, labor and other factors of production globally. Thus the transformation from an industrial to knowledge economy has been accompanied by the emergence of a **worldwide labor market**, albeit an imperfect one. Expressed simply, **globalization** implies the flow of ideas, capital, people, goods and services around the world in the context of the diminishing relevance of national borders.

In the past century, we progressed from a stage where the application of science to manufacturing techniques or to agricultural practices became the basis for production; this was the industrial society, where mass production, dependent on a relatively small cadre of highly-skilled labor commanding a much larger group of semi-skilled labour, was vertically integrated. In today's **knowledge economy**, knowledge produced by R&D, and inventions created in universities and industrial laboratories are creating the so-called **knowledge industries**. These include not only high-and medium-technologies based on new materials, microelectronics, computer-aided design and manufacturing, biotechnology, advanced process control systems, etc., but also communication services, finance, insurance, and other business services and methods (e.g. e-business), and community, social and personal services. This is what we mean by saying that not only is it no longer possible to distinguish between basic and applied research and industrial research and development, and production, marketing and financing, but it is also becoming increasingly difficult to separate the industrial, service, and agricultural sectors of the economy. This is because high-and medium-technologies



are diffusing to all strata of all sectors of the economy, and to every aspect of our daily lives in an intertwined manner. In fact, "tech" categories of products are defined in terms of "R&D intensities at industrial branch levels of manufacturing industries. A high-tech product is defined as one for which R&D expenditure accounts for more than 4 percent of the production cost. Work, however, is still underway to provide a corresponding definition for the service industries, which are increasingly high-tech.<sup>3</sup> Today global wealth is concentrated less and less in factories, lands, tool and machinery. A **knowledge-based economy** relies primarily on the use of ideas rather than physical abilities and on the application of technology rather than the transformation of raw materials or the exploitation of cheap labour.<sup>2,4,5</sup>

According to UNESCO estimates, the developed countries with 27 percent of the world's population and 61 percent of its GDP accounted for 84 percent of its global R&D expenditure. Consequently, the USA, the European Union and Japan put together accounted for 62.4 percent of the global high-tech trade valued at 623.7 billion dollars in 1997.<sup>3</sup>

Drucker<sup>6</sup> argues that manufacturing will further decline as a creator of wealth and jobs, in much the same way as farming did from 1920 to the present. At the beginning of the 20<sup>th</sup> century, farmers made up the largest single group in the working population in most developed countries, now they account for no more than 3 percent in any developed country. Yet farm production in most developed countries is at least four times what it was in the 1920 and three times what it was in 1950 (except in Japan). In 2000 agriculture contributed less than 2 percent to the GDP of the US. Many forecasts indicate that by the year 2020 manufacturing output in developed countries will at least double, while manufacturing employment will shrink to 10-12 percent of the total workforce with a continuing decline in the relative purchasing power of manufactured goods, which has already fallen by three-quarters in the past 40 years. At present, it takes five times as many units of manufactured goods to buy the main products of the knowledge industries, the so called **knowledge products**, as it did 40 years ago. A typical case in point is the relative cost of software and hardware in a given information technology application, where the former far surpasses the latter. "**The Computerless Computer Company**", predicted more than 10 years ago is now a reality.<sup>7</sup>

The global knowledge economy will rely heavily on a well-trained workforce comprising **knowledge workers**, a term coined by Drucker<sup>6</sup>, that can not only apply know-how, but are also capable of analysis and decision-making based on information. A more in-depth analysis of the foregoing phenomena by the author can be found elsewhere.<sup>8</sup> In summary, the late 20<sup>th</sup> century saw the growth of a **knowledge-centered**, as opposed to a manufacturing-centered, economy. Consequently, **knowledge and people with knowledge** are now the key factors of production, main drivers of growth and major determinants of competitiveness in the global knowledge economy. The technology-driven global economy is characterized by intense competition. Thus higher education agenda throughout the world is also determined by three interdependent phenomena : **technology, globalization and competition**.<sup>9</sup>

## 2. IMPLICATIONS FOR HIGHER EDUCATION

At the heart of a globally-competitive national economy is the **national innovation system (NIS)**, continually pumping knowledge to its organs through complex information and communication networks, of which the **Internet** is the prime example.

The NIS came into being by an evolutionary transformation of the national research and development (R&D) system that served the industrial society well. It comprises universities, other tertiary education institutions, public research establishments and private sector research departments. According to the World Bank<sup>2</sup>: "*An NIS is a web of (i) knowledge producing organizations in the education and training system together with (ii) the appropriate macroeconomic and regulatory framework, including trade policies that affect technology diffusion; (iii) innovative firms and networks of enterprises; (iv) adequate communications infrastructures; and other selected factors, such as access to the global knowledge base or certain market conditions that favor innovations.*" Clearly, higher education plays a dual role as a vital component of both the national education and R&D systems, the two key subsystems of the NIS. Its contributions to developing human resources and knowledge creation are vital. In particular, the university, the major component of a tertiary education system, has been aptly referred to as:

*"...not just a creator of knowledge, a trainer of young minds and a transmitter of culture, but also as a major agent of economic growth: the knowledge factory, as it were, at the centre of the knowledge economy".<sup>10</sup>*

### 2.1 HIGHER EDUCATION SYSTEMS

To the layman higher education is synonymous with the university, traditionally characterized by an assembly of skilled scholars instructing selected students face to face in classrooms, based on results of research driven by intellectual curiosity simultaneously carried out in a campus served by a library in which printed learning material and scholarly journals are stored and continuously updated. The above is a description of the traditional research university as envisioned by Wilhelm von Humboldt, which, as underlined above, is still at the heart of the national innovation system. However, over time, as consequences of changing demands and shifting demographic profiles, and in a process referred to as **differentiation**, new types of tertiary-level institutions were born and new types of providers entered the sector.

Differentiation has occurred vertically, with the traditional research university being joined by polytechnics, professional schools, and other non-university institutions that only teach and grant degrees but do not conduct research, distance education institutions and community colleges that offer sub-bachelor's-level degrees. Differentiation has also occurred horizontally by the creation of new institutions operated by for-profit providers, philanthropic and other non-profit organizations and religious groups.<sup>4</sup>

In this manner, national higher education systems have emerged that consist of three basic elements:<sup>4</sup>

- different types of higher education institutions, including their faculties, schools, academic and non-academic staff, students, physical, facilities and resources, missions, and strategic plans;
- the organizations that are directly involved in financing, managing or operating higher education institutions comprising a range of both public and private bodies, including ministries, particularly those of education and finance, and/or intermediate buffer bodies, research councils, accreditation and quality assurance bodies, auditing agencies and philanthropic organizations; and
- the formal and informal rules that guide institutional and individual behaviour and interaction among the various actors.

The system is bound to the overall education system which supplies its students and whose teachers are supplied by it. It is connected to the labour market and the business community to which it supplies knowledge and people with knowledge and skills as the most important production factors in the global knowledge economy. It is connected to the parliament and various government departments that set the policy environment in which it operates. It also has international links to regional and global higher education communities, as well as to bilateral and multilateral donors, foundations and non-governmental organizations. Finally, it is increasingly functioning as a player in the highly competitive global higher education market. The subsection below provides a brief historical perspective regarding the emergence of different types of higher education institutions to meet increased demand. Issues regarding governance aspects are discussed in Section 3.

## 2.2. HISTORICAL PERSPECTIVE<sup>11,12,13,14,15,16</sup>

The medieval university, in general, consisted of a lower faculty, the faculty of liberal arts, comprising the trivium (grammar, rhetoric and logic) and the quadrivium (arithmetic, geometry, astronomy and music) which prepared students for professional studies in the three higher faculties: law, theology and medicine. The latter did not include training in surgery which, at that time, was done by master surgeons in closed guilds, and by barber surgeons; the latter were archenemies of the former. These guilds were probably the first examples of non-university institutions of higher education.

In that form, the university as an institution served the manpower needs of medieval Europe well, and spread all over the continent. By the year 1500 the number of universities in Europe had increased to 63, up from 28 in 1378, including universities in places as far north as St. Andrews, Copenhagen and Uppsala.

The second type of tertiary-level institution that came into being outside of the university were the inns of court in England, where barristers were trained in British common law to serve in civil courts; training in canon law and Roman law mainly to serve in religious courts located in Oxford was still the prerogative of Oxford and Cambridge. By the year 1560, enrollment in the inns of court had exceeded 700.

The third type of non-university institutions were royal surgery academies founded in the 18<sup>th</sup> century in France and England. It was owing to the relentless efforts of Herman Boerhaave in Leiden in the late 17<sup>th</sup> and the early 18<sup>th</sup> century that the scientific basis for medical studies was established, and eventually modern medical education, including surgery was incorporated into the university. Other non-university institutions included the merchant marine colleges established in Portugal, Spain and France in the 16<sup>th</sup> and the 17<sup>th</sup> centuries, and Gresham College founded in London 1579 to train seamen for merchant ships; the dissenting academies founded in England in the 18<sup>th</sup> century by scholars and students who refused to pledge allegiance to the Anglican Church; the military engineering schools, the precursors of which were the *Duytsche Mathematique*, established near the University of Leiden, (ca. end of the 17<sup>th</sup> century), the technical school in Prague (1717), and *Ecoles des Ponts et Chaussee* (1741); and the military schools of veterinary medicine, the first of which was founded in Alfort, France in 1776. It should be noted that all of the above mentioned types of higher education institutions provided training in areas demanded by the changing socio-economic landscape, and except for the inns of court, education in these institutions was essentially based on the new sciences, i.e., disciplines and subjects that were born of the first scientific revolution that occurred in the 17<sup>th</sup> and 18<sup>th</sup> centuries.

This first scientific revolution was the result of research carried out by some 300 scholars, all of whom, with a few exceptions, had studied in universities and most of whom had later taught in universities. Yet, the university for many years resisted the inclusion of new scientific subjects in its curricula, and research was not included among its functions. For this reason, it is generally acknowledged that the Industrial Revolution owed little, if anything, directly to the university. The so-called new sciences, and education based on new subjects entered curricula starting from the Protestant universities in Holland and Scotland. In contrast, Oxford and Cambridge caught up with these developments only towards the end of the 19<sup>th</sup> century.

The French Revolution brought into the arena new types of higher education institutions. Because the Jacobite revolutionaries viewed universities as arms of the church and the *ancien regime*, they closed all universities in 1791, and instead established a system consisting of *lycees* that prepared students for professional training in the *grandes ecoles*. Napoleon carried this revolutionary zeal to the lands he conquered where he closed all universities and in 1806 established the *Universite de France* which was, in effect, a national education system, at the center of which were the *grandes ecoles* (some 300 of these institutions presently serve as the backbone of elite professional education in France). Basic elements of this system have also survived to date in France and the only affiliated faculties were those of law and medicine.

Various business and commerce schools founded in England, France, Spain and Germany by chambers of commerce and other private organizations in the 19<sup>th</sup> century are other examples of non-university tertiary institutions. It was an indirect outcome of the Napoleonic conquests that led to the inclusion of research as the second basic function of the university in addition to teaching. According to Wilhelm von Humboldt, who was charged with reinvigorating education in Prussia after the defeat of Napoleon, teaching and research were inseparable in a university.

Starting with the University of Berlin in 1816, this became the basis of the German research university, and from there spread first to the US and later to the whole world. The **German research university** became the cradle of the second scientific revolution that occurred in the late 19<sup>th</sup> and early 20<sup>th</sup> century.

Thus, the 19<sup>th</sup> century witnessed a radical change in the functions, structure and curricula of the university. The university as an institution throughout Europe, not only absorbed new sciences into its curricula, but also took on the education and training of high-level manpower in a much wider professional spectrum including modern medicine, engineering and architecture (economics, public administration and business studies came much later; teacher training is perhaps the latest addition to degree programs offered by universities). Opposing the German concept of vocational and technical education for the professions within the university structure was Cardinal John Henry Newman, who instead viewed the university as: “*a place of teaching universal knowledge, its object being the diffusion and extension of knowledge rather than the advancement.*” It was due to Newman’s influence in England and the USA, that vocational and technical education was somewhat slower to penetrate universities in these countries. What really drove vertical differentiation in higher education was the increased demand for tertiary-level qualifications due to advancing economies and increasing populations worldwide following the two world wars.

Gross enrollment ratio in the 16<sup>th</sup> and 17<sup>th</sup> centuries in Europe was only 2 percent. At the beginning of the 20<sup>th</sup> century this ratio was only 4 percent in the US. Total enrollment in the UK was 20,000. In the mid-fifties gross enrollment was only about 5 percent in the UK, Germany and Sweden, and total enrollment in the US was only 1.5 million, one-tenth of what it is today, 45,000 in the UK, and about 15,000 in Australia.

Trow<sup>17</sup> has classified national higher education systems according to gross enrollment ratio as: **elitist** (below 15 percent), **mass** (between 15 and 50 percent), and **universal** (above 50 percent). Thus, in the fifties higher education was elitist even in democratically-governed advanced economies, and was concentrated in research university type institutions.

The **expansion** and **massification** of higher education worldwide has been made possible by sub-bachelor’s level programs, vocational and technical programs of shorter duration in new types of institutions and/or traditional universities and distance education programs in open universities.

Starting in the sixties, non-university institutions have been founded that offer vocational and technical programs at bachelor’s and sub-bachelor’s-level and similar programs have been established within some traditional universities to meet the increasing demand for higher education and to educate and train the intermediate-level manpower requirements of advancing economies where tertiary-level qualifications were being required in an increasing number of jobs.

Junior colleges that started appearing in the US in the early 20<sup>th</sup> century, and especially the community colleges established after World War II, offering two-year associate degree programs that allowed students to enter the job market directly, or to proceed on to bachelor’s-level programs served as a model for many countries. Examples are the *tanki daigaku*, *koto senmon gakko* and *senshu gakko kotei* in Japan, the two-year vocational schools affiliated to Turkish universities, the colleges of applied arts and technology in Canada, the *hoger beroepsonderwijs* (HBO) in Holland, the *distrikt hogskoler* in Norway, *instituts universitaire de technologies* (IUT) affiliated to French universities, the *ammatikorkeloulu* in Finland, and the *foiskola* in Hungary.

The *escuelas universitarias* in Spain are parts of the universities and offer sub-bachelor’s-level programs. Similarly, all French universities also offer two-year programs, *diplome d’etudes universitaires scientifiques et techniques* (DEUST), and *diplome d’Universite* (DU); in addition some technical secondary schools in France also have two-year programs at the tertiary level called the *sections de techniciens superieures* (STS).

The *Fachhochschulen* in Germany, also called the university of applied sciences, offer three-or four-year bachelor’s-level programs in vocational and technical subjects, while a bachelor’s level degree in a German university takes considerably longer.

Until the beginning of the nineties, the UK had a binary system comprising universities and polytechnics. The polytechnics were founded following the Robbins Report in 1963 to meet the increasing demand for higher education. They played a key role in the massification of the British system. All polytechnics were given university status in 1992. But sub-bachelor’s-level programs are offered in many UK universities. On the other hand, a second sector exists in the UK, called further education, that comprises more than 500 institutions. In this sector are institutions which cater to the secondary-level age group, as well as colleges of further education and tertiary colleges in which adults and students are enrolled for retraining or to work towards a vocational degree, respectively. The technical and further education (TAFE) sector in Australia is quite similar to the British further education sector.

Figure 1, adapted from previous studies by the author,<sup>11,18</sup> shows the share of vocational programs of shorter duration offered either in traditional universities or in non-university institutions in selected countries. Such programs account for 45 percent of the enrollment in the US higher education system, the largest in the world with about 15 million students, 45 percent in Australia, 59 percent in Holland and 33 percent in Japan. Clearly, this share exceeds 30 percent in the majority of developed countries.

Distance education focuses on students who are separated in time and space from their peers and instructors. On a brief historical note, the first distance education university was the University of South Africa founded in 1873<sup>4</sup>, and it was in 1897 at the University of Chicago, that education by correspondence was started within a traditional research university; by 1930 similar programs had been established in 39 American universities.<sup>11</sup> A center was established for this purpose in France in 1939. However, distance education took off after the founding of the Open University in 1969 in the UK. It was rapidly adopted as a low-cost solution to the problem of not only re-educating the adult populations, but also for the education of cohorts of students at tertiary education age. Enrollments at and dates of foundation of selected distance universities are as follows:<sup>4,11,19</sup>

China TV University (1979)	1,422,000
Anadolu University, Turkey (1982)	661,854
Open University Thailand (1978)	565,032
South Korea National Open University (1982)	208,935
National Center for Distance Learning France (1939)	185,000
Indira Gandhi National Open University, India (1985)	182,000
Universitas Terbuka, Indonesia (1984)	170,000

Open University, UK (1969)	154,000
The University of South Africa (1873)	130,000
Payame Noor University, Iran (1987)	117,000
University of the Air, Japan (1985)	68,000
Fernuniversitat-Gesamthochschulen, Germany (1974)	55,000
Open Universiteit, Holland (1981)	50,000

Many countries now have tertiary institutions of this type. The share of such institutions in the higher education systems of selected countries is shown in Figure 2<sup>11,18,19</sup>. Many of these institutions in developing countries rely essentially on relatively old technologies, including radio and TV broadcasts, videocassettes, etc., and a mixture of old technologies and ICT.

Thus the period from approximately the end of World War II to about the mid-eighties saw the emergence of national higher education systems which in general comprise:

- Traditional research universities
- Traditional universities with mass education as their main mission (provincial and regional institutions)
- Non-university institutions (professional, vocational and technical schools).

On the **horizontal differentiation** side are **private institutions** of higher education.

It is interesting to note that Bologna University founded in 1088, generally considered to be the first university, was in fact founded by students. It was an *universitas scholarium*, i.e., a student guild. This meant that salaries of the professors were paid by students, who also elected one of their own as the rector of the university in charge of administrative and financial aspects as well as the enforcement of the student code of conduct. The reason students established such an institution and paid for its running costs was because they felt that there was a substantial **personal return on their investment**. In other words, the university started out as a **private institution** driven by market demand. This particular form of governance was, however, short-lived. Professors (the academia), and spiritual (the Vatican, the local cardinal, or the bishop), and/or the temporal (the emperor, the king, the prince, or the local government) authority in due course took over the governance of the institutions, which in effect became profesorial guilds *universitas magistrorum*. However, fees paid by students (*collectae*) continued to be one of the major funding sources. In other words, the medieval university, continued to be essentially market-driven. Furthermore, because there was then no state in the modern sense, there was also no state budget. Neither the spiritual, nor the temporal authority paid any attention to who the founders of the institution were when providing financial aid, as long as they could exert their own influence. Thus all universities founded before the 19<sup>th</sup> century can argueably be regarded as private institutions.

The various navigation and engineering schools founded by the temporal authority and the French *grandes ecoles* can perhaps be viewed as the first state institutions. The Protestant universities in Holland in Leiden, Groningen and Utrecht founded in 1575, 1614 and 1636, respectively, are perhaps the first state universities; they are indeed presently called state universities (*Rijks universiteit*).

The distinction between private and state institutions started to become formally codified in the US in the 19<sup>th</sup> century following the Morrill Land Grant Act of 1862, when state universities started to be founded by acts of state legislatures, as opposed to the colleges previously founded by Protestant religious groups, some of which received their charters later. The universities in the UK have been founded in various ways, including royal charters and acts of parliament, and they receive most of their financing from the state in the form of block grants and own property.

These institutions, however, are best viewed as privileged public entities that can act quite autonomously and in a very private manner. In the UK, universities are legally private, though seldom classified as private. For this reason, Buckingham University, founded in 1973, which received its royal charter in 1983, is considered to be the only private university in the UK, because it receives no state aid. Private institutions in many countries receive financial aid in some form from public sources.

It is thus not an easy task to provide definitions that distinguish state institutions of higher education from private ones. One simplistic, but perhaps useful, way is to define private institutions as those in which academic administrators are not designated and/or formally appointed by some organ of the state, which have the authority to prepare and implement their budgets and can set salaries independently, and are subject to inspection by state auditing bodies only for the support they receive from public sources. Private institutions, too, comprise two types: non-profit and for-profit institutions founded and partly supported by charitable organizations or by business enterprises, respectively.

It was mentioned above that nearly all of universities in Europe founded before the 19<sup>th</sup> century can argueably be classified as private. Most of these institutions were later taken over by the state which provided by far the largest portion of funds needed to operate them. However, a relatively small number of denominational universities in Spain, France, Holland and Belgium still maintain their private character despite receiving nearly all of their funds from the state. These institutions, however, are still somewhat more tightly regulated than universities in the UK, which despite their privileged status, are still referred to as public, rather than private institutions.

In the US, too, the nine colleges founded in the colonial period that were the precursors of today's Ivy League universities, Harvard (1636), William and Mary (1693), Yale (1701), Columbia (1745), Princeton (1746), Pennsylvania (1755), Brown (1765), Rutgers (1766) and Dartmouth (1769), were private not public institutions, and were founded by denominational groups. They have all maintained their private status to date, except Rutgers. Only six of the original thirteen states had chartered public (state) universities before the civil war: Georgia (1785), North Carolina (1789), South Carolina (1805), Maryland (1812), Virginia (1819), and Delaware (1821).<sup>15</sup> However, owing to the pervasive free-market culture in the US, all state universities today are much closer to what one might call private entities founded by states, compared to the private universities in France, Spain, Belgium and Holland.

The university as an institution was carried over to Latin America by Spanish colonialists. Thus the first universities founded in this continent in the 16<sup>th</sup> and 17<sup>th</sup> centuries were Catholic universities of a private nature. In 1950 there were fourteen private universities in Latin America.<sup>19</sup>

In Japan universities started as imperial, i.e., state institutions, the first one being the *Tokyo Daigaku*, founded in 1869, immediately after the Meiji Reform Proclamation. However, in 1918 private schools previously founded to prepare students for universities were given university status by an imperial decree, thus laying the foundations for the private higher education culture prevalent in that country today. Thus we can distinguish two types of **privatisation** in higher education: one that has its roots in history and has continued to be so at later dates, as the case is in the US; and another that also has its roots in history, but has expanded to meet the increased demand arising from massification, as is the case in Latin America and the Asia-Pacific region.

In Brazil, for example there were no private universities in 1980, while today there are 42 private and 20 state universities. In 1960 Chile had 2 state and 6 private universities (3 of them denominational), today there are 16 state and 42 private universities. Thailand had one private (founded by the chamber of commerce) and 6 public universities in 1960, today it has 24 public and 50 private universities. The Philippines now has 25 state institutions of higher education, as opposed to 1285 private.<sup>19</sup>

Of the 4790 institutions of higher education in Japan, 4117 are private. In Korea, 78 of the 100 universities, and 363 of the 456 institutions of higher education of all types are private.<sup>14</sup> China has more than 800 private institutions, but only a few of them are recognized by the state. In Indonesia there are 57 public universities and more than 1200 private institutions.<sup>4</sup>

Europe has gone in the reverse direction; what started out as effectively private institutions, have, over time, mostly been transformed into state institutions. In Germany, for example, the first private institution was founded in 1982, another private university started admitting students in 2000. In Greece, private institutions are banned by the constitution. Australia, too has only two private universities, the first of which, Bond University, was founded in 1987. The Turkish constitution allows only non-profit private institutions of higher education; today there are 53 state and 24 private universities in Turkey.

On the other hand, private institutions have rapidly flourished in Eastern Europe after the collapse of communism. Romania now has 59 private and 36 state institutions of higher education. Hungary has three types of private institutions: the church-affiliated ones that resemble state institutions as in the case of Belgium and Holland, legally recognised institutions, and a group of non-recognised institutions that award degrees granted by foreign institutions.<sup>19</sup> The rate at which private universities were being founded in countries in transition was alarming. In an international meeting a few years ago, I had asked my colleagues from an Eastern European country what the number of private institutions was in their country. They said they could not provide a definite answer because the number might have changed since they left their country.

With these caveats, Figure 3 shows the share of private institutions as percentage of total enrollment, in the higher education systems of selected countries.<sup>4,11,18,19,20</sup> Private enrollment accounts for only 18 percent of the total enrollment in the US, the bastion of free market economics, where private institutions account for 68 percent of all types of higher education institutions. The figure is topped by three Asia-Pacific countries: The Philippines with 85, Japan with 81, and Korea with 78 percent.

### 2.3. INCREASED DEMAND FOR HIGHER EDUCATION

Figures 4 and 5, adapted from UNESCO statistics<sup>21</sup>, show enrollment and gross enrollment ratios, respectively, in higher education in different country groups. Total tertiary enrollment in developed countries was 21,129,000 in 1970, and increased to 44,798,000 in 1997, corresponding to a nearly two-fold increase over a period spanning approximately the last quarter of the previous century. On the other hand, tertiary enrollment in developing countries increased by a factor of nearly seven, from 6,956,000 in 1970 to 43,357,000 in 1997.

The emergence of new and advanced technologies have led to an increase in jobs that require tertiary-level qualifications even at the entry level; the rate of increase is expected to accelerate. Consequently, demand for higher education has been and will be on the rise in the conceivably near future.

In the same period, gross enrollment ratio has increased from 26.1 to 51.6 percent for developed countries, and from 2.9 to 10.3 percent for developing countries; the world average was 17.4 percent in 1997. Figure 6 adapted from two previous studies by the author<sup>11,18</sup> shows gross enrollment ratios in selected countries. There is clearly a great variation between countries in this respect, with Canada leading by a gross enrollment ratio of 88 percent, followed by USA and Australia with gross enrollment ratios of 81 and 80 percent, respectively. At the bottom is Pakistan, where only 3 percent of the relevant age cohort has access to higher education. Clearly then higher education worldwide has made the transition from elitist to mass, and that in developed countries is now universal, while many developing countries still have a long way to go.

Figure 6 perhaps indicates a threshold value in terms of tertiary gross enrollment ratio that needs to be passed for a country to transform her economy into a knowledge-based one; this value appears to be around 40 percent.

Figures 4,5 and 6 definitely show that the demand for tertiary education will further increase worldwide. Total tertiary enrollment which was 88,155,000 in 1997 is projected to double by the year 2025. A significant portion of this increase is expected to occur in developing countries.

An expanding higher education system requires first and foremost, high-quality academic staff. Figure 7, adapted from UNESCO statistics, shows the growth in the number of teaching staff in the period 1970-1997. The figures for developed and developing countries and world total which were 1,530,000, 616,000 and 2,146,000 in 1970 increased to 3,452,000, 2,832,000 and 6,284,000, respectively, in 1997. Average student to staff ratios in 1997 were thus 13 in developed countries, 15 in developing countries, and 14 worldwide. If these ratios are to be maintained, the total number of teaching staff required by the year 2025 will be twice what it was in 1997, corresponding to an additional 8,000,000 staff that need to be trained over a period of nearly a quarter of a century, including those needed to replace the retirees. This will require a significant expansion of the existing graduate-level programs, particularly in developing countries. Even in that case, large numbers of students from developing countries will still need to be trained in developed countries where there is a tradition of high-quality doctoral-level programs.

Graduate-level, master's and especially doctoral-level programs are the main vehicles by which: (i) new knowledge is generated; and (ii) the highest level of workforce is trained through advanced courses and basic and applied research. Graduate students account for 2.4 percent of the enrollment in Latin America and the Caribbean Region, 3 percent in Thailand, 6.5 percent in Turkey, 8 percent in Korea, and 12.6 percent in the USA. On the average there is one new Ph.D. graduate per year per 5000 inhabitants in the OECD countries. The corresponding numbers of inhabitants per one new Ph.D. graduate per year are 34,000 in Turkey, 70,000 in Brazil, 140,000 in Chile and 700,000 in Colombia<sup>2</sup>. The slow growth and distribution according to disciplines of doctoral-level graduates is a major challenge for countries aspiring to move into the developed nations league.

In terms of the projected expansion of higher education worldwide, there is an important demographic difference between developed and developing countries. It is now clear that in all developed countries, including the US, there will be a rapid growth in the older population and a rapid shrinking of the younger generation.

On the other hand, it is realistic to expect the relevant age cohort to account for the largest portion of tertiary enrollment in developing countries. Massive investments will thus be required, both from public and private sources for the training of qualified academic staff, in physical facilities and technology, but more importantly for improving the quality of teaching and research so that graduates of institutions in developing countries can become active participants in the **global labor market**.

Table 1 shows public expenditure per student, in US \$ and as a percentage of per capita GNP in various country groups.<sup>22</sup> Public expenditure per student went up significantly from 1985 to 1995 in all regions except in sub-saharan Africa, Arab states, least developed countries, and countries in transition. Nevertheless, there is still more than a six-fold difference between developing (US \$ 967) and developed (US \$ 5936) regions in favour of the latter.

Figure 8 in US \$ (PPP) shows institutional expenditure per student in various countries.<sup>23</sup> Figures shown are national aggregates for all types of tertiary-level institutions, universities, polytechnics, vocational schools both public and private, and thus include public subsidies plus tuition fees if any. This is why countries like Paraguay, Argentina, Chile and Brazil which have significant shares of private institutions appear high in this figure. With that caveat, the US again tops the list with US\$ 16,262, while the Philippines is at the bottom with US \$ 2170, pointing to a relatively strong correlation between quality and expenditure per student. This represents a nearly insurmountable gap for developing countries to close, which almost mirrors the **digital and technological divide** between the innovating countries which account for some 15 percent of the world population that have completed their transition to the global knowledge economy and the remaining part, in which nearly a third of the earth's population is **technologically disconnected**,<sup>24</sup> an argument supported by data provided by UNESCO on R&D expenditures and the distribution of global trade in high-tech products presented in the previous section.

#### 2.4. COMPETITION IN THE INTERNATIONAL ARENA

Competition is not a new phenomenon for higher education institutions. They have always competed for students, research funds and qualified academic staff. Institutions in the US compete for fund raising. Internationalization and student and staff mobility were a salient feature of medieval universities in Europe when Latin was the Lingua Franca. Students from the same country or region would group under the name nation and nations played a significant role in the governance of universities. Foreign students accounted for 10 percent of the enrollment across Europe. It was uncommon for a teacher, or even for a student to spend his entire professional life in just one institution, as exemplified by the travels of Erasmus. However, what is happening today is somewhat different. This subsection deals with competition for students among nations. Competition with new providers is discussed in subsection 2.7.2.

Internationalization at the graduate-level is not a new phenomena. However, one impact of globalization has been the relative increase in the number of self-paying students studying in institutions abroad at the undergraduate level. It is interesting to note that between 1995 and 1999, foreign students increased by 9 percent as opposed to a 5 percent growth in enrollment in OECD countries.

Figure 9 shows the ratio of students enrolled at home institutions to those studying abroad.<sup>4</sup> This figure clearly shows that there is a group of countries which are **net importers of higher education services**, and another group of countries which are **net exporters of higher education services**.

Leading the latter group are the USA, UK and Australia. The following is a statement by a group of American, Canadian and European presidents, rectors and vice-chancellors who recently met and publicized their deliberations in the form of a report.<sup>9,25</sup>

*“With English as the lingua Franca, their flexible degree structures, more student-centered approaches, strong traditions in distance learning, off-shore delivery strategies (especially the UK and Australia), their (differential) fee systems, which provide incentives to institutions to actively market themselves, also overseas, and governments that actively support international marketing strategies, the Anglo-Saxon countries have an undeniable foothold in the international market”*

Indeed the US has the highest number of international students of any of the receiving countries. In the 1998–99 academic year 490,933 students studied in the US. In the 2000-1 academic year this number had increased to 547,867, and was 582,996 at the latest count in 2001-2. The top ten countries of origin were India (66,836), China (63,211), Korea (49,046), Japan (46,810), Taiwan (28,930), Canada (26,514), Mexico (12,518), Turkey (12,091), Indonesia (11,614) and Thailand (11,606).<sup>26,27,28</sup>

Total foreign enrollments in the UK and Australia, the next two leading countries, are approximately 210,000 and 80,000, respectively according to the author’s estimates.

In contrast, 154,168 US students were studying abroad in the 2000-1 academic year, corresponding to 0.88 percent of total enrollment at home, up from 0.39 percent in 1985. The top ten destinations were United Kingdom, Italy, Spain, France, Mexico, Australia, Germany, Ireland, Costa Rica and China. Relatively few of these students; however, are abroad for the whole duration of their studies. With that caveat, the ratio of US students **that are actually purchasing higher education services** abroad to those at home is estimated at about 0.20 percent.<sup>4</sup>

What we are witnessing in terms student influx to the US, the UK and Australia is something that far transcends student exchange and study abroad programs, and graduate students who are supported by teaching and research assistantships by the host institutions. Rather, we are faced with students whose expenses, including tuition fees, are paid for by themselves or by their parents; in other words, **customers in the global higher education market**.

Although foreign students represent just over 4 percent of the total higher education enrollment in the USA, they contribute nearly US\$ 12 billion to the US economy from tuition fees, living expenses and related costs. The US Department of Commerce ranks higher education as the country’s fifth largest service sector export. Education and training services rank among the top ten general exports in Australia.<sup>25,26,27</sup>

Clearly, **internationalization** of higher education in the global knowledge economy is much more than establishing programs in international relations, area studies, foreign languages and history and cultures of other peoples. It refers to the fact that an institution of higher education must now **compete** with another institution in a far away country for its pool of local students; that students are crossing borders at an escalating pace in search of the program that best fits their needs; that standards in educational curriculum, quality and management are increasingly being established by a **global higher education market** driven by **technology** and **market forces**.<sup>26</sup> The market referred to, however, is as yet a **quasi-market** governed by limited market-type mechanisms arising from government interventions.<sup>29</sup>

The global spending on higher education is estimated to be approximately US \$ 300 billion (In the author’s opinion, it is probably more realistic to regard this figure as total public spending worldwide. For the year 1997 total enrollment was 88,156,000; this figure multiplied by the global average per student public expenditure of US \$ 3370 gives US \$ 297 billion. Furthermore, total US spending, including tuition fees and other institutional support, alone in 1997 was (14,267,778) (16,262)= US \$ 232 billion on a PPP basis, or US \$ 225 billion on an absolute basis), or 1 percent of global GDP, and growing at a faster pace than the world economy.<sup>4</sup> For this reason, **cross-border** or **borderless higher education** has now become part of the discussions of the world trade. In December 2000, the US presented its first proposal concerning the inclusion of higher education in the GATS negotiations, held under the auspices of the WTO, as one of the 12 broad sectors. In addition to the US, Australia, Japan and New Zealand have also presented proposals on higher education.

Recognition of credits and credentials from other countries has always been a difficult matter. Academic evaluation, assesment, accreditation and quality assurance have a century-old history in the Anglo-Saxon countries, particularly in the US, and are now an integral part of their culture. On the other hand, even in Europe, the cradle of the university, such concepts are being put into practice only relatively recently. There are cultural barriers to such practices in the academia in many countries. Concerns are now being expressed over additional issues, including unclear distinctions between public and private higher education and how each is covered by GATS; institutional autonomy concerning academic matters; state and provincial authority over fiscal policy; and independent accreditation and quality assurance processes around the world.<sup>9</sup> These negotiations are in progress, and the outcomes and consequences for colleges and universities around the world are as yet unclear. In the long run, we may be faced with supranational quality assurance and accreditation bodies, a possibility although seemingly remote at the present, dreaded by the majority of academics.

## 2.5 THE IMPACT OF DEMOGRAPHICS AND LIFELONG LEARNING

The aging population of developed countries has a somewhat different set of implications for higher education. Firstly, the average age of the student body will increase. In the US, for example. In the decade between 1985-1995, enrollments of students over age 25 went up 20 percent compared to only 13 percent for younger students.<sup>30</sup> Older, working, and commuting students are now the majority in US institutions. In Fall 2000 students age 25 and older made up 42 percent of students in the US institutions

of higher education, up from 28 percent in 1980. It is estimated that 31 percent of the projected US growth in enrollment will be attributable to students age 25 and older.<sup>30</sup>

Drucker<sup>6</sup> predicts that a growing number of older people will participate in the labour force in many different ways: as temporaries, as part timers, as consultants on special assignments and so on, requiring new skills that need to be continuously updated. According to Drucker, the workforce in the global knowledge economy comprises **high-knowledge workers** and **knowledge technologists**. The first group includes doctors, lawyers, scientists, teachers, engineers, economists, etc. The higher education community throughout the world have centuries-old experience and institutional structures in place for educating and training these old high-knowledge professionals.

On the other hand, only a few countries so far provide systematic and organized preparation for knowledge technologists, comprising intermediary-level professionals doing jobs that require comparatively less skill, but nevertheless still require basic ICT competencies. Computer technicians, software designers, office managers, analysts in clinical and industrial labs, manufacturing technologists, hospitality managers, paralegals and paramedics are as much manual workers as they are knowledge workers. Drucker, argues that it is this group of professionals in services, manufacturing and teaching that will be the dominant group in the workforce in all developed countries.

The first group traditionally requires formal pre-service education at bachelor's-level and above, while formal education and/or training at sub-bachelor's-level will generally be sufficient at the job-entry level for the latter group of professionals. Countries in which technical and vocational programs of a shorter duration account for more than 30 percent, shown in Figure 1, are perhaps best poised to face this challenge.

However, because knowledge rapidly becomes obsolete, knowledge workers will have to be continuously retrained. Furthermore, some jobs will disappear in time, and some workers will have to be trained for new jobs. **Continuing education** of already highly educated adults is projected to be the biggest growth area in developed countries. Equipping people to deal with the complexities of the global knowledge economy clearly requires a new model of education and training, **a model of lifelong learning**. The World Bank defines this model as follows: "*It encompasses formal learning (schools, training institutions, universities); non-formal learning (structured on-the-job training); and informal learning (skills learned from family members or people in the community). It allows people to access learning opportunities as they need them rather than because they have reached a certain age.*"

In summary, a knowledge-driven economy not only requires higher skills in the workforce, but also continuous updating to adapt to changing demand and creation of new knowledge. **Lifelong learning** and **continuing education** are thus expected to expand, leading to a blurring between initial degrees and continuing education certificates, and perhaps also between secondary and tertiary levels both in developed and developing countries, but more so in the former. Thus tertiary education institutions, especially in developed countries, are increasingly coming under pressure to serve a more diverse clientele, including, in addition to the relevant age cohort, working students, mature students, part-time students, day students, night students, students studying towards a degree, students taking courses that lead to new vocational qualifications, etc.

It is quite likely that the fastest growing service sector in any developed country will be the continuing education of already well educated adults. Again countries which have significant shares of vocational programs of shorter duration in their higher education systems will have an easier task at hand in this respect, too.

A second implication of the aging population of developed countries is the increasing need for immigration. It now looks certain that there will be increased immigration by foreigners with different nationalities, languages, cultures and religions into advanced countries, including Japan, a country which is not yet culturally attuned to this phenomenon. It is estimated that by 2020 Germany will have to import 1 million immigrants of working age each year simply to maintain its workforce<sup>6</sup> (and its actuarial balance?). The issues here are: a) the educational attainment of new immigrants; and b) the education of the children of the settled immigrants. A case in point is Germany where some 175,000 foreign students are enrolled in tertiary education. Half of these are from EU member states, mostly on EU exchange programs. The biggest group comprises some 30,000 Turkish students, 80 percent of whom are the children of Turkish *gasterbeiter* who had their secondary education in Germany.<sup>31</sup> Worldwide campaigns to attract young people from all over the world to study in German universities is a relatively new phenomenon for this country. The motive in the case of Germany is not to export higher education services, but to maintain a qualified workforce. Furthermore, the use of English as a language of instruction is increasing in Germany.<sup>25</sup>

In the US, too, minority students are expected to make up 80 percent of the growth in tertiary enrollment, with overall minority enrollment rising to 37 percent.<sup>30,32</sup>

Immigration of a well-educated individual from one country to another is tantamount to a transfer of wealth in that direction. For this reason, the framework of international assistance must be radically restructured. Multinational firms and higher education institutions and scientific establishments must be involved in upgrading educational and research facilities in developing countries.

## 2.6. THE IMPACT OF TECHNOLOGY

There is worldwide agreement that technology may be the single greatest force for change in higher education.<sup>9</sup> Scientific and technological developments are continuously changing course contents, and academic research interests. But then that has been the case throughout history. What is elaborated below is the impact that ICT, principally the computer and the Internet are having on various aspects of higher education. These include:<sup>9,32,33,34</sup>



Distributed learning and virtual universities,  
Positioning of institutions in the market,  
Reshaping of teaching and pedagogy,  
Restructuring of libraries,  
Organizational change,  
The nature of students.

The list can be extended to include other aspects, and a discussion can be presented on the pros and cons of the uses of technology and on its possible adverse effects on the soul of higher education. These have been discussed in detail elsewhere.<sup>9,32,33,34,35</sup> The discussion presented below is somewhat more restrictive.

**Distributed learning**<sup>34</sup> simply refers to a combination of on-campus instruction with distance education using online delivery systems and approaches based on advanced ICT; it can occur either on or off campus. It has its roots in distance learning.

Distributed learning, is characterized by complete reliance on advanced ICT, using synchronous and asynchronous modes, the latter being the dominant mode of delivery. It is much more than an online substitute for lectures.

The percentage of higher education institutions offering distance education courses in the US grew from 33 percent in 1995 to 44 percent in 1998. Of the higher education institutions offering distance education in 1997-98, 60 percent employed asynchronous Internet-based technologies, up from 22 percent in 1995. The percentage using synchronous technologies rose from 14 to 19 percent in the same period.

As of February 2001, of the 4064 two and four-year colleges in the US more than half were offering some form of online instruction, with enrollment in such courses growing at 200 percent in Penn State's World Campus, and 1000 percent at the University of Maryland University College. Only 10 percent of all US institutions presently have no online programs. In Canada, a survey of adult education and training (which include but surpasses higher education) indicated 500,000 students from a cohort of 6 million were doing part of their course work through various distance learning mechanisms.

A few management experts, most notably Drucker<sup>6</sup>, have predicted the eventual demise of campus-based instruction as we know it; there are some who even claim that campuses will eventually disappear. It does, however, now look certain that distributed learning, as **virtual arms** of residential campuses will be the future.

Distributed learning will therefore remain an academic issue rather than a technological one. However, establishing the technical infrastructure and support programs may require significant investment and may take years. Investments can exceed US \$ 1 million per course. Nevertheless, distributed learning is particularly suited to the needs of the new diverse clientele of higher education.

Partnerships are essential to distributed education. These may range from **outsourcing** or **unbundling** of services, including admissions, textbook sales, career advisory, and even tutoring, content development and testing and evaluation to consortia of non-profit academic institutions not only among themselves, but also with for-profit ventures operating in various parts of the system. It is estimated that unbundling can reduce costs of higher education by 75 to 90 percent. To deal with such issues effectively, many universities, both public and private, have developed **for-profit arms**.

All of these have strong implications for governance, organization and quality assurance, for most of which there are no recipes other than experimenting.

One thing, however is certain. First time entrants worldwide expect advanced technologies to be used in the delivery of higher education. Most students entering higher education today are younger than the microcomputer, are more comfortable working on a keyboard than writing in a notebook, and are happier reading from a computer screen than from a book, and this is true not only for developed countries, but worldwide. Interactive software will soon be an integral component of every classroom in developed countries at all levels of education.<sup>33</sup>

## 2.7. NEW TYPES OF COMPETITORS

### 2.7.1. THE EMERGENCE OF MARKET FORCES

As was mentioned in Section 1 of this paper, starting in the eighties following the coming to power of Reagan in the US and Thatcher in the UK, market forces have emerged as the main drivers of the economy. Public sectors in most of the developed countries were affected, and various market mechanisms were introduced in an effort to increase efficiency, accountability and consumers' power over the public sector.

Higher education, too, came to be viewed by many as no more a purely public service, but as a semi-public service, with an associated cost, a social and a personal return. Coupled with fiscal constraints and shrinking public resources allocated to tertiary education worldwide, this new view of higher education has led to the introduction and **rise of market forces** in tertiary education.

**Privatization** and attempts to establish **quasi-market structures** have been key elements in formulating and implementing higher education policies, not only in developed countries, but also in the Asia-Pacific region, Latin America and Eastern European countries in transition. These consist of introduction of real tuition fees, revenue diversification through sales of goods and services produced by institutions and an increased share of private institutions of various types, both non-profit and for-profit.

Teixeira and Amaral<sup>19</sup> have adopted the following definition of privatization as appropriate for higher education: "*Privatization is a term generally used to describe measures which increase the role of private markets in the delivery of services and goods presently provided on a universal basis by the public sector.*"

It is now generally agreed that no country, however rich, can provide the higher education of his or her choice to everyone free of charge, and fund it completely through the public purse. For despite the expansion of systems of tertiary education, especially the university subsector, generally remains elitist, with the majority of students coming from wealthier segments of the society. Thus, making it free creates a mechanism by which wealth is transferred from the poorer to the richer segments of the society. This further distorts income disparities that have already gotten worse in developing countries. Introduction of student fees is based on this rationale, and is one form of privatization.

Figure 10 adapted from various sources<sup>11,18,20</sup> shows the ratio of real tuition fees to public expenditures in public institutions of higher education in selected countries. It is interesting to note that many former communist countries figure prominently, including Latvia, Bulgaria and Viet Nam, and that for China this ratio is 9 percent, where a universal fee of US \$ 888 has been introduced in 1999.<sup>37</sup> However, the introduction of tuition fees without accompanying student financial aid mechanisms such as loans, grants and scholarship, means-tested and/or merit-based has had a negative effect in Eastern Europe, including Russia. In these countries there are two types of students, one fee paying and the other attending free. An examination is given to select students who will attend free. Poland has a similar system. The University of Warsaw earns 12 percent of its annual budget from fee-paying evening students which comprise 40 percent of the enrollment. A similar arrangement in Hungary brings in revenues covering about 8 percent of higher education expenditures.

The New Zealand experience indicates that privatization by the introduction of real tuition fees must be implemented very carefully. In 1988 New Zealand started releasing state control and cutting funding to higher education. The result was skyrocketing tuition fees; the strong institutions have become stronger, but a number of weaker institutions may be forced to close. There has been a 20 percent decrease in higher education enrollments from poorer districts.<sup>32</sup> Average fee in New Zealand is approximately US \$ 3200.<sup>37</sup> On the other hand, a comprehensive series of structural and financial reforms was launched in Chile in 1981. Tertiary education was diversified and stratified into three tiers: universities, professional institutes (PI), and technical training centers (TTC). Fees and a loan scheme were introduced in public universities. The procedures for financing public universities were changed to encourage income generation and cost saving and award research funding on a competitive basis. Public university personnel lost their civil service status. Chile uses several instruments to finance education and training at the postsecondary level, including direct funding from the state, vouchers, directed subsidies, tax rebates, and income-contingent loans. Vouchers are given to top performers in the entrance examination for which universities, both public and private, compete. These measures have led to a doubling of the enrollment from 11 percent in 1980 to 30 percent in 1995. They also resulted in the proliferation of institutions from 8 universities to a total of 270 institutions, including 200 PI's and TTC's, many of which are in provincial regions. Nearly all of the expansion has been financed from private sources. Funding in public and private institutions, taken together, comes from student fees (31 percent), income from services (26 percent), and public subsidies (41 percent).

In Mexico students started paying an annual contribution of US \$ 300 in 1994. This fund however, being jointly administered by students and administrators to improve quality and to provide support to needy students.<sup>3</sup> Mexican universities have recently been authorized to set fees. Korean universities too have been given similar freedoms.

Australia charges a differentiated fee (US\$ 3300 for social sciences, US\$4700 for the sciences and business, and US\$ 5500 for health)<sup>37</sup>. In Australia, however, students pay a substantial part of their tuition through the arrangement known as the Higher Education Contribution Scheme (HECS), where payments can be postponed until students have incomes, or paid up front at a reduced rate. Deferred payments are collected through the state revenue system in the form of an income tax surcharge<sup>29</sup>. Namibia has a similar system, but uses the social security rather than the tax collection system.

In the Netherlands time-limited fees are set between US\$2250 and US\$3150. In the UK the Labor Government has introduced a flat fee of 1000 pounds on a means-tested basis. Changes are underway in the UK that allow universities to set fees within prescribed limits; this limit is likely to be 3000 pounds. In Argentina, it is up to the universities to charge fees; so far no public university has done so.<sup>37</sup>

## 2.7.2 NEW PROVIDERS OF TERTIARY EDUCATION

This section deals with new providers that have emerged essentially in the past decade as consequences of the introduction of market mechanisms, technological developments, changing demand and shifting demographic profiles. Issues pertaining to governance and finance are presented in the following section.

One particular type of new provider has already been discussed in Subsection 2.2, i.e., private institutions. But then some of the oldest and prestigious research universities are either private or can argueably be classified as such. Therefore, non-profit private universities represent a horizontal differentiation; even the older for-profit non-university type of private institutions, despite the fact that they do represent vertical differentiation, were initially modelled after their public counterparts.

What follows is a brief description of new providers that began to come into being in the early nineties, especially in the US. These are quite unlike the previous institutions. They indeed represent a vertical differentiation, all intensively use ICT for delivery, and, in general, are explicitly for profit. These can broadly be classified into the following groups:<sup>2,9,32,38,39</sup>

- Virtual universities
- Corporate universities
- Certificate programs run by ICT companies
- Franchise universities
- Media enterprises, publishing companies, libraries and museums
- Academic brokers

**A. Virtual or online universities** may also be classified as second generation distance education institutions using advanced methods of delivery based on ICT. These can be of several types:

- Purely virtual degree granting institutions
- Virtual arms of traditional institutions
- For-profit universities and colleges
- Consortia

Purely virtual degree granting institutions and virtual arms of traditional institutions have been covered in subsections 2.2 and 2.6 above. As of 2001, there were 971 degree-granting virtual institutions in the US.<sup>35</sup> A survey of the World Wide Web will show that institutions of this type now exist in almost all countries. Some of these, however, such as the British Open University, Monash University of Australia and for-profit virtual arms of traditional universities, such as New York University (NYU online), the University of Maryland (UMUC OnLine.com, Inc), and Temple University (Virtual Temple) are well on their way toward truly global operations. Monash now has campuses in South Africa and Malaysia. The British Open University now operates in 21 countries, including the US, with 30 percent of its enrollments outside of Britain.<sup>30</sup>

Many of the best known non-profit universities, both public and private, have established **for-profit virtual arms** as subsidiaries or joined with for-profit firms in joint educational enterprises. Some examples are Duke (Duke Corporate Education Inc.), Columbia (Fathom), Cornell (eCornell), UCLA (Global Film School Inc.), Babson College (Babson Interactive Inc.), University of Nebraska (Class.com), Princeton, and London School of Economics (LSE). Colorado Community College Online educates students from 18 countries outside of the US.<sup>30</sup>

The University of Phoenix is one of the oldest and the largest of the for-profit virtual universities. Phoenix, founded in 1976, now has some 135,000 students, 42 percent of whom attend online. Its growth has been largely driven by niche programs at the BA-completion, and master's degree levels in business, information technology and teacher training; 97 percent of its students are adults. The founder, John Sperling, had this to say in 1989: *"At UOP, a student finds a system that has been designed specifically to eliminate these barriers and to deliver educational services to its working adult in the most efficient way possible within the constraints imposed by accrediting commissions and state licensing agencies. The student is treated with the consideration and respect that a valuable customer deserves."*

The parent company of the University of Phoenix, The Apollo Group, recently opened a three-campus university in Brazil, one in India, and plans a third in Mexico.<sup>39</sup> Thus, over time, UOP has switched from a purely virtual university to an essentially distributed learning mode, involving face to face instruction, too.

There are now some 700 such for-profit tertiary institutions in the US, and still counting. They presently account for 8 percent of the bachelor's-level enrollment, up from 3 percent a decade ago.

The biggest of these is the publicly traded Sylvan Learning Systems which has purchased six schools with a total of 60,000 students in Latin America and Western Europe, including the Universidad del Valle de Mexico and the prestigious Les Roches Hotel Management School in Switzerland.<sup>39</sup>

Examples of virtual consortia reported by Newman<sup>32</sup> include Cardean University (Stanford, Chicago, Carnegie Mellon, Columbia and LSE, offering courses internationally in business), SUNY learning network, Colorado Community College Online (15 community colleges offering associate-level degrees), Universitas 21 (17 universities from Scotland, England, the US, Australia, Singapore, Hong Kong, China, Sweden and Germany offering courses internationally), African Virtual University (a large number of Anglophone and Francophone universities offering courses in sub-saharan Africa), Euro Pace (a virtual university for Europe with participating universities from many European countries), and Scottish Knowledge (a consortium of universities, colleges of further and higher education, and schools of music, drama and art from the UK, Australia and the USA). An interesting consortium is Fathom that includes major research universities like Columbia, Chicago, Michigan and LSE, as well as Cambridge University Press, The British Library, the New York Library, the American Film Institute, the RAND Corp., the Woods Hole Oceanographic Institute, the Natural History Museum, the Victoria and Albert Museum and the Science Museum.

The founders of the Western Governors University (WGU), founded in 1996, include governors of 17 western states and 14 business partners, among which are IBM, Sun, AT&T, Cisco and Microsoft. Its partner institutions from which courses are drawn include Brigham Young, Texas Tech, Northern Arizona and Idaho State universities. Enrollment at WGU, however, has remained significantly lower than initial predictions.

De Vry Institute of Technology now has 15 campuses in the US and Canada, enrolling over 50,000 students in business and technical programs. It also owns the Keller Graduate School of Management. It has recently gained accreditation to offer bachelor's degrees online.

One trend is now evident. Teaching and learning in certain high-volume, low-cost fields (e.g., education and business), broken off from related activities of research and services, can be profitable. Consequently, there is expanded competition, for example, at the MBA level, where employers often pay the tuition, but not at the Ph.D. level where teaching and learning are expensive and universities themselves bear the burden.<sup>32</sup>

Thus a student today has a wider array of choices which are much easier to access, because all are listed on the Internet. A student enrolled in a university who finds a given course is of poor quality, or even just inconvenient, can find a substitute online. In the US, where nearly all schools now have Internet access, students increasingly show up in universities having already taken a university-level course online. Such young students, in addition to adults, now constitute a growing niche for for-profit institutions in the US. One institution, MIT, on the other hand, has declared an online strategy that is designed to mitigate the impact of market forces. MIT announced in April 2001 that it would create web sites for nearly all of its courses, thereby enabling free access to MIT course materials.

**B. A corporate university** is a strategic umbrella that allows a company to coordinate and manage programs to train and educate its employees, customers and suppliers in order to meet an organization's business plans and strategies.<sup>40</sup>

The corporation develops such programs through its own faculty or staff, or through external partners such as higher education institutions or commercial firms.

Today there are 2000 corporate universities, up from 400 in 1988. It is estimated that by 2010, such institutions will outnumber traditional ones in the US.

Ninety two percent of corporations outsource the delivery of education and training programs, and 60 percent outsource some aspect of course design. Sixteen percent of all corporate education partnerships are with traditional colleges and universities.

The Internal Revenue Service (IRS) is now offering online courses to its employees via a consortium of major universities. Arthur D. Little will help the IRS find online programs for its employees. The US Army has announced that Pricewaterhouse Coopers, the consulting company will lead a US \$ 453 million project to deliver distance education to soldiers around the world. The project is called Army University Access Online, and will be led by a team of 10 companies and 29 colleges. Driver safety classes are now being offered online as a viable alternative to state-sponsored traffic school classes.<sup>33</sup>

Banco Santander Central Hispano SA has created an in-house virtual campus enrolling 5,200 students in 40 online courses, 25 of which were designed by **commercial education vendors**.<sup>32</sup>

The Motorola University, the best known of all, has an annual budget of US \$ 120 million, and manages 99 sites in 21 countries.<sup>2</sup> An estimated 85 percent of the Fortune 500 companies now deploy some form of distance education for employee training. The Health giant Kaiser Permanente has increased its distance learning sites from 150 to 300 in the US, eating into what was formerly university business by offering bachelor's and master's degrees for nurses and continuing education for physicians. Industry in the US spends US \$ 58 billion annually for employee training.

**C. Certificate programs** run by major software companies have developed into a parallel postsecondary education and training system.<sup>32</sup> Until recently, most ICT training took place in traditional tertiary institutions. The major software companies, Microsoft, IBM, Novell and Cisco have created programs to train the personnel needed to operate their systems, contracting with institutions of higher education as well as with other providers such as corporate universities, public agencies and ICT vendors.

With nearly 300 certificate-granting institutions offering certificates in over 350 areas, it is estimated that 1.6 million people have been awarded approximately 2.4 million certificates, nearly half of these outside of the US.

In some cases it is also possible to get academic credit for courses taken in certificate programs. For example, students taking Microsoft certification courses (which can cost more than US \$ 10,000) in anyone of the 100 centers in the US, get the credits they need through Tucson's Pima County Community College.<sup>38</sup>

**D. Franchise universities** are institutions operating on behalf of British, US and Australian universities, offering courses "validated" by the parent institutions, but in another country, mainly by local instructors under the supervision of faculty members from the parent institution, at a reduced cost to the student. These are commonly encountered in former British colonies in South and Southeast Asia, and in former socialist countries of Eastern Europe. The emergence of this type of institutions is a clear manifestation of increasing demand for internationally recognized degrees in the global labor market. One-fifth of the 80,000 foreign students enrolled in Australian universities are studying at off-shore campuses, in Malaysia and Singapore. The cost of attending these franchise institutions is one-fourth to one-third what it would cost to enroll in the mother institution.<sup>3</sup>

**E. Many museums and libraries** are now offering continuing education courses. **Publishing companies and media enterprises** are providing services linked to course material design and preparation for on-line delivery. This kind of activity is becoming increasingly significant in the UK and the USA. The most common form is as a partner or a member in a consortium, as has been pointed-out above. One interesting example is the Barnes and Noble University, a major chain of bookstores, which has created free online courses on topics such as *film noir* and Shakespearean comedies, as well as in business, science and technology.<sup>40</sup>

**F. Academic brokers**<sup>2</sup> are virtual, often Web-based, entrepreneurs who specialize in bringing together suppliers and consumers of educational services in many different areas. Companies such as Connect Education Inc., and Electronic University Network build lease and manage campuses, produce multimedia educational software, and provide guidance to serve the training needs of corporate clients worldwide. Dozens of Web-based companies act as clearing houses between schools and prospective students, offering information about academic and financial resources. Some even provide direct educational service, including preparatory training in English language for students whose destinations are Anglo-Saxon institutions.

It is interesting to note that the University of Phoenix has opened two branches, one in Rotterdam and one in Düsseldorf. There are 130 foreign providers operating in Greece, where the constitution of the country explicitly bans private institutions, over 100 in Spain and 62 in Italy<sup>25</sup>

### 3. GOVERNANCE ISSUES

Three interdependent phenomena, **technology, globalization, and competition and rising market forces** are radically reshaping higher education worldwide. It is now generally agreed upon that the likely result will be a mixed system comprising traditional classrooms, virtual classes and mixtures; for-profit and non-profit institutions and non-profit institutions with for-profit subsidiaries; global institutions and local ones. The new providers, virtual institutions, virtual arms of traditional institutions, for-profit universities and colleges, consortia of institutions and commercial enterprises will expand the spectrum of education and training at the postsecondary level.

The result of all these changes, taken together, is a **global market place for higher education** that allows more choices among a wider array of alternatives; a growing interest in convenience, effectiveness and value for money; and a readiness to attend multiple institutions on the way to a degree.

In summary, changes are underway, driven by the entry of new providers of higher education; new methods of delivery based on continuously advancing technology; demographic shifts resulting in a much more diverse clientele that demand pre-service education as well as lifelong training and/or retraining. The globalization of higher education that has typically been open only to indigenous institutions is making the sector increasingly competitive. Competition today is not only among traditional institutions that are similar to each other in structure, whether in the same country or in another country, but also with entirely new types of providers. In response to these powerful changes, government regulations are loosening worldwide in favor of **market-driven decision making**. This means that the distinction between non-profit and for-profit institutions is becoming increasingly blurred.

One thing, however, is certain; all these changes do not signal the demise of conventional structures. The traditional research university will maintain its key position in the NIS. It was, after all, such institutions that acted as the nuclei for the transformation from the industrial to the global knowledge economy. The Silicon Valley grew out of the Stanford Industrial Park established near the Stanford campus soon after the 2<sup>nd</sup> World War. In a similar manner, the Electronics Research Laboratory founded at MIT during the 2<sup>nd</sup> World War later attracted many companies to commercialize the results of R&D carried out in those laboratories.

Arthur<sup>41</sup> convincingly argues that among the factors that make one region take off in high-technology, concentration of skills that forms the basis of what he calls “**deep craft**” ranks the first. Today there are 47 such **clusters or global hubs of innovation** worldwide, where start-up companies, research labs, universities, financiers and corporations are converging, creating a dynamic and conducive environment that brings together knowledge, finance and opportunity. Thirteen of these are in the US, Europe has 17, Japan, Brazil and Australia has 2 each, China has 3, and there is one hub in each of Canada, Singapore, Korea, New Zealand, Israel, India, South Africa and Tunisia. Almost all of them are located in the immediate proximity of leading research universities.<sup>1</sup>

According to the latest UNESCO statistics<sup>3</sup> on science and technology, 69 percent of the cumulative OECD R&D effort took place in firms and institutes of the business enterprise sector, 11 percent in public research laboratories and departments, 17 percent in institutions of higher education, and 3 percent was performed by non-profit private institutions. Figure 11, taken from a previous study by the author,<sup>46</sup> shows that university research plays a relatively modest role (15-20 percent maximum) in countries like France, Finland, Germany, Japan, Sweden, the UK and the US, that are key players in the global knowledge economy but is over 60 percent in developing countries like Turkey, Mexico and Chile. Figure 12, taken from the same source, on the other hand, which shows the share of private sector in the R&D effort in selected countries, is nearly a mirror image of Figure 11. It is, however, quite likely that, while in-house R&D will continue to play a key role in proprietary technologies, a significant portion of the preceding stages of R&D effort will be outsourced from universities, commercial arms of universities, and/or from clusters of small-and medium-scale enterprises located around campuses or in technoparks, industrial parks and incubators owned and operated by universities in partnerships. This is certain to be the case for developing countries that are at the brink of making the transition to the global knowledge economy, where private sector is not yet strong enough to have its own in-house research. Clearly, this type of activity is much more market-driven compared to education.

What does all this mean for governance of institutions of higher education, in particular universities?

The term to govern is etymologically derived from the Latin word **gubernare**, which means to steer. The Taskforce on Higher Education defines governance as follows:<sup>4</sup> “*The term governance indicates the formal and informal arrangements that allow higher education institutions to make decisions and take action. It includes external governance, which refers to relations between individual institutions and their supervisors, and internal governance, which refers to lines of authority within institutions. Governance overlaps considerably with management; the latter is seen as the implementation and execution of policies.*”

To understand the complexities of the governance of higher education in the global knowledge economy, it is instructive to briefly look at its history since the foundation of Bologna University in 1088.

### 3.1. HISTORICAL PERSPECTIVE

The medieval university from its very beginning felt the need to protect itself from external influences, which at that time could be a matter of life and death for professors and students. Since the papal bull **Parens Scientarium** issued in 1231, universities have been claiming the privilege of autonomy from external influences, including subjects to be taught and teaching methods,<sup>42</sup> from an external authority. This external authority was initially the spiritual (the pope, cardinal or bishop), which was in time replaced by the temporal (the emperor, the king, the prince, or local government) which increasingly became the major source of funding.

Starting from the middle of the 18<sup>th</sup> century, the emerging nation state, in time, took over as the major source of funding. Over a period spanning approximately 180 years, starting from the beginning of the 19<sup>th</sup> century when *Universite de France*, sometimes also called the Napoleonic University, and Berlin University were founded, central state bureaucracies took on an increasingly **regulatory role**. Regulations were issued ranging from academic and administrative operations and structures, curricula, graduation requirements, salaries of staff, and especially matters related to expenditures and budget. As a result, the status of professors changed from members of a guild (*universitas magistrorum*) to civil servants. In this period, generally referred to as the **bureaucratic revolution**, higher education was used as a powerful instrument for social change, and was thus viewed as a purely public service, to be exclusively financed from the public purse.

In Holland, for example, a law was enacted by the parliament in 1876 that put the burden of financing of all institutions of higher education, including private ones, on the state. In return, however, the state also assumed the authority of appointing the members of the governing boards (*college van curatoren*) of the institutions, preparing their budgets, and appointing the *secretaris*, a civil servant as the head of administration, similar to the *Kanzler* in German universities.

In this manner, what is commonly and broadly referred to as the **Continental European model of governance** evolved. In terms of institutional autonomy and academic freedom, this model depends on an equilibrium between **academia** on the one hand, and **state bureaucracy** on the other. Ideally, a **collegial** atmosphere should prevail in institutions, where the rector is *primus inter pares*, under the benign protection of and financial support provided by the state. Except for Protestant universities, the classical continental model generally includes no lay members i.e., non-academic members from outside the institution, in the various boards and councils of institutions, although bodies made up of interested citizens had been put in place by local governments and princes in many Italian and German universities in the mid-14<sup>th</sup> century. High-level administrators appointed by governments are excluded from this argument. Neave<sup>43</sup> refers to *Universite de France* and Berlin University as referential models for continental European universities.

On the other hand, the Academy that John Calvin founded in 1559 in Geneva, *Academia Genevensis*, was governed by a lay board, and served as the model for Protestant universities in Holland and Scotland.

Trinity College was established in Dublin in 1593 by Protestants. A board of visitors consisting of seven laymen was appointed to provide outside supervision to the college owned and operated by an internal board of fellows.

Oxford and Cambridge had from the start been organized as confederations of colleges, and alumni played a key role in their governance. However, it was Owens College, founded in Manchester in 1880 that served as the model for English universities founded later. In addition to the senate, the college was governed by the court as the highest organ and the council as its executive branch. The majority of the membership in both of the upper boards were laymen, with a small minority of internal members, i.e., academics and administrators of that institution.

Until the 19<sup>th</sup> century there were only two universities in England, as opposed to five in Scotland, St. Andrews, Glasgow, Edinburgh and two in Aberdeen. During the 19<sup>th</sup> century seven new civic universities were founded in England. These were largely influenced by Scottish universities and Owens College, rather than Oxford and Cambridge.

It is interesting to note in passing that the dissenting academies founded in England by non-Anglican Protestants in the late 18<sup>th</sup> and the early 19<sup>th</sup> centuries, had much closer connections with the society and the occupations. But they were never chartered to award degrees, and eventually disappeared.

From these historical roots emerged what is broadly referred to as the **Anglo-Saxon model of governance**, characterized by a board at the highest level of the institution, the majority of the members of which are laymen.

The **American version** is much more streamlined. Governance structures of the first colonial colleges, all of which were founded by Protestant immigrants, were naturally modelled according to Calvinist tenets. Thus boards at the highest level of governance consisted entirely of nonacademic laymen, while in the **British system** such boards included a small minority of academics from that institution as internal members. Trow<sup>44</sup> argues that the American colleges founded during the colonial period were probably influenced by dissenting academies, and thus included many of their features pertaining to relations with the society and the

occupations. From these historical roots the **American system of governance** emerged that relies uniquely on lay boards of trustees with their non-governmental and non-internal members and, in consequence, on strong presidencies working under the authority of these boards.

Although both the British and the American models both rely on institutional governing boards rather than affiliation to a ministry of education, it is more realistic to discern **three types of governance systems: Continental European, British and American.**

According to Kerr and Meade,<sup>16</sup> the American system is a “Gift of history”. Alexis de Tocqueville had listed equality of opportunity, rewarding of individual achievement, entrepreneurship, voluntary participation in charitable organizations and private enterprises, and a relentless quest for higher quality as the basic features of the prospering and developing American democracy. The American higher education system developed in such an environment, where the **market** was one of the fundamental social institutions of American society right from the beginning. The system rapidly expanded by the infusion of vast amounts of money both from private and public sources.

It is interesting to note that Johns Hopkins University founded in 1876, is considered by many to be the best implementation of the Humboldtian research university. The concept of the research university was soon taken up by existing universities like Harvard and Yale, and served as the model for new universities like Stanford and Chicago.

Trow<sup>44</sup> provides an insightful discussion of events that shaped the American system. Among these is the failure to establish a national university, the University of the United States, in the time period between the American Revolution and the Civil War, despite the fact that George Washington had urged it on the Congress in his first and last messages (1790 and 1796), and made a contribution towards it in his will.

On the other hand, at about the same time, *Universite de France* (1806-1808) and the University of Berlin (1810) were founded, which tied the university to the modernization of national bureaucracy and to the mission of upholding national coherence as well as construing higher education in terms of public good and general interest. Neave<sup>45</sup> argues that these two institutions have served at varying stages of their history as models, templates or have provided both the organizational forms and pedagogic practices upon which others have built their own systems of higher education. Trow<sup>44</sup> points out that the defeat of the idea of a federal university that would most certainly attain a **referential status**, as the case has been in Europe, in affecting the role of the central government with respect to higher education, has been one of the most important events that has led to diversity and competition in the US.

The second historic event was the decision by the Supreme Court that prevented the state of New Hampshire from appointing public representatives to the board of Dartmouth College which was founded as a private college in the colonial period by Eleazer Wheelock and his friends.

These two events have shaped the American model in which higher education is a service offered to the nation by individual initiative and owned by a corporation of founders, as opposed to the continental European model where this service is provided and protected by the state.

In the author's opinion two other court decisions have extended the legal basis for lay governance to state universities as well as private ones. These were the decision by the Michigan Supreme Court in 1869 that recognized the power of the board of regents of Michigan State University, and the decision by the Supreme Court of Illinois that affirmed the right of the state to found a university to be governed by a lay board of trustees with corporate status.

In summary, the continental European model of governance was historically based on essentially two actors, the academia and the state.

The Anglo-Saxon model of governance, on the other hand, in particular, the American version, included the society at large and the market as a third actor. Thus while the former model can be represented on a straight line, a triangle is needed to depict the latter.

In fact, the state as a relatively effective actor in Anglo-Saxon countries came in somewhat later. The University Grants Committee (UGC) was established in the UK in 1916 as part of the Treasury to advise the government on the grants to be made to universities from public sources. The total amount of the grant made in 1920 to the 16 universities which then existed was one million pounds. The UGC was transferred to the Department of Education in the sixties. A similar body, the Australian Universities Commission was established in 1957. In mid-sixties the polytechnics were established in the UK to offer a relatively low-cost solution to meet the increased demand. These institutions, however, were not given the right to award degrees directly. Their degrees were validated by the Council for National Academic Awards (CNAA). Thus a mechanism for quality assurance and accreditation was also established in the UK almost half a century after the US. The UGC was renamed the Universities Funding Council (UFC) in 1988, and a similar funding body, Polytechnics and Colleges Funding Council (PCFC), was established for the second subsector of the binary system. Together with the ending of the binary system in the UK in 1992, the two councils were split into three regional higher education funding councils, one for England (HEFCE), one for Wales (HEFCW) and one for Scotland (SHEFC), to serve not only universities, but all institutions of higher education in the three regions.

According to the US Constitution, education is the responsibility of individual states. However, higher education was influenced indirectly by federal legislation. The Morrill Land Grant Act of 1862 and the Hatch Act of 1887 made it possible for land-grant universities to receive financial aid from federal sources, and at the same time emphasized “**the education of the sons and daughters of the laboring class...**”<sup>35</sup> It was, however, The Serviceman’s Readjustment Act (The G.I. Bill) of 1944, which provided student aid for every veteran, and thus led to the massification of higher education in the US immediately after the 2<sup>nd</sup> World War.

In Australia the colleges of advanced education (CAE) were founded to meet the increased demand. These were similar to the polytechnics in the UK. The Australian Universities Commission was also split into two: the Federal Australian Universities Commission and the Federal Commission on Advanced Education. However, in 1977 they were combined and renamed the Commonwealth Tertiary Education Commission (CTEC). The binary system was ended in 1987, and the Unified National System was established, comprising 35 universities, formed by various amalgamations of universities and CAE’s.

Financial aid to higher education institutions in the US was vastly increased following the Sputnik Shock. However, the Higher Education Facilities Act of 1963, the Higher Education of 1965, and the amendment made to the latter in 1972, made it mandatory for states receiving financial aid from federal sources to establish a body that would plan and develop higher education within the state, i.e., an intermediary body at the state level.

In this manner, **intermediate bodies** were established between the state and the higher education system in both the UK and the US. Thus both the British and the American versions of the Anglo-Saxon system are based on intermediate bodies, or **buffer organizations** at two levels, one at the national or regional level (UGC, UFC and now HEFCE, HEFCS and HEFCW in the UK, and the various state boards or commissions in the US), and the other at the institutional level (courts and councils in the UK, and boards of trustees, boards of regents, boards of governors in the US). These bodies act both as buffers and bridges between the system as a whole and the individual institutions and the state and the society.

The boards at the institutional level have the additional functions of (i) appointing the president or the vice-chancellor after a vigorous search and screen procedure, supporting him or her, and terminating his or her term of office when necessary; (ii) ensuring that the institution has a development plan consistent with its mission; and (iii) acting as an interlocutor between the various constituents of the institution (administration, faculty, staff and students) when necessary.

It is the presence of such bodies and appointed presidents or vice-chancellors that distinguishes the Anglo-Saxon system from the Continental European system, making the former, especially the US institutions, much more responsive to the market and accountable to the society.

Higher education in Europe, including the UK, was massified nearly a quarter of a century after the US. In Continental Europe, ministries were directly involved in the planning and financing of higher education, and rectors elected by electoral colleges whose compositions varied from one country to another, were much weaker in authority compared to their UK, and especially US counterparts.

**Standardization** started in the US with the establishment of the College Entrance Examination Board in 1900. The first Scholastic Aptitude Test (SAT) was given in 1926, and the first Graduate Record Examination was given in 1935. Soon after, the Educational Testing Service (ETS) was founded to prepare and conduct such examinations.

The first quality assurance and accreditation mechanism was perhaps the conditions set by the Carnegie Foundation for the Advancement of Teaching for eligibility of institutions to receive financial aid. In the same year the Association of American Universities (AAU) was founded. In 1914 AAU for the first time issued a list of accredited universities that contained 119 institutions; by 1948 this list included 238 institutions. In 1915 the American Association of University Professors (AAUP) was founded. This organization soon issued its views on university autonomy and academic freedom.

Thus the American higher education system was not only massified by the middle of the 20<sup>th</sup> century, but structures and mechanisms had been established for the system to function in a manner responsive to the needs of the society, and in accordance with market principles.

On the other hand, in the period between the beginning of the 19<sup>th</sup> century and the beginning of eighties, the state in Continental Europe assumed a **regulatory role** in higher education, characterized by detailed regulations covering nearly every aspect of higher education including curricula which, for example, were federal laws in Austria, line-item budgets relying nearly on a single source, i.e., the public purse, and complete lack of competition. Management was shared by professors, and government-appointed civil servants such as the Kanzler in German universities, and the rectorship was essentially limited to chairing the various internal boards and committees.

In Continental Europe, universities and other tertiary institutions were directly affiliated to the ministries. In Sweden, however, a sort of intermediary body was set up, *Universitetsoch Högskoleambetet*, (UHA) to plan and coordinate higher education. All members of this board were appointed by the government, including its head, the Chancellor. The Swedish system resembled state-wide higher education systems in the US.



In Holland, there was no such national body, but each university was managed by a board, the *college van bestuur*, which consisted of the rector elected by the senate, 2 members appointed by the minister acting on behalf of the Queen, and another 2 elected by the senate of the university.

In the aftermath of the student protests that started as campus unrest but soon spilled over into the streets, shaking the existing social order, especially in France and Germany, legislation was enacted in nearly all continental European countries that gave junior faculty, staff and students a strong voice in the governance of institutions. The various university boards at all levels included representatives of the four groups (*gruppen universitat*). Laws enacted in the late sixties and seventies in France (*Loi d'orientation*, 1968), Germany (*Hochschulrahmengesetz*, 1976), Austria (*Universitatorganisationgesetz*), Holland (*Wet op de Universitaire Bestuurleiding*, 1970), and Sweden (1977) were all based on this principle.

### 3.2. TRANSFORMATION FROM THE REGULATORY TO THE EVALUATIVE STATE

As of the beginning of the eighties the US already had a market-oriented higher education system. Australia and the UK had the necessary structures in place for a system that could compete in a market-oriented environment.

It is interesting to note that *La loi d'Orientation sur l'enseignement superieur* enacted in France in 1984 established three councils in each of the French universities, *Conseil des etudes et de la vie universitaire*, *Conseil d'administration* and the *Conseil scientifique*, as the upper boards, and all three boards included lay members appointed by the Minister of Education in addition to faculty, student and staff representatives. The electoral college that elected the *president*, consists of the joint assembly of the three councils. The *Comite National d'Evaluation* was established in 1985 to prepare 4-yearly reports for the President of the Republic on the state of French higher education.

Similarly, *Ley de Reforma Universitario*, enacted in Spain in 1983, established a *consejo sociales* in each university 60 percent of whose members are external laymen. Designation of the rector, however, is the prerogative of the *claustrum universitario* which does not include any external members, and consists of representatives of faculty, students and staff.

Despite the inclusion of external lay members in the upper boards of French and Spanish universities since the early eighties, central ministerial control has remained high to date. Thus these steps, however, important they may have been at the time, did not really represent a significant move towards more market-oriented, competitive systems.

What really changed the agenda of higher education in Europe was the report entitled, "**Report of the Steering Committee for Efficiency Studies in Universities**" in 1985. This committee was set up by the Committee of Vice-Chancellors and Principals (CVCP), and was chaired by Sir Alex Jarrat. For this reason, but mainly because of the very radical nature of its recommendations, the period following the publication of this report is referred to as the "**Post-Jarrat Period**", and the recommendations it made are called "**Jarratian Measures**", mostly with a pejorative connotation when used by academics.

The report caused a tremendous controversy and its reverberations echoed throughout Europe. Basically it recommended that:

- Universities should respond to changing market conditions;
- The head of the institution should act not only as an academic leader, but also as a chief executive officer;
- Modern management techniques should be used in the universities;
- More attention should be paid to unit costs and the efficiency of resource utilization; and
- The performance of universities should be evaluated and measured by qualitative and quantitative performance indicators.

Indeed nothing remained the same in the Post-Jarrat period. Tenure was abolished in the UK in 1988, and institutions were encouraged and forced to compete for funds and to diversify their resources.

Immediately following the Jarrat Report, CVCP issued another report entitled "Academic Standards in Universities". The first research assessment exercise (RAE) was carried out by the UFC in 1986, and caused a lot of fury and controversy in academia and in the public. This resulted in the establishment of the Academic Audit Unit by CVCP in 1991 to monitor evaluation and assessment mechanisms put in place by the institutions and to report its findings to the public. Teaching quality assesment (TQA) was started in the early nineties. Higher Education Quality Council was established in 1997 for quality audit. In 1996, the Quality Assurance Agency for Higher Education (QAA) was established which has statutory powers to insure that all institutions have mechanisms and procedures in place for assessment and evaluation.

RAE is carried out by the Higher Education Funding Council for England. (HEFCE) every four or five years, and research fund distributed by HEFCE depends on its results. Those units which score below a certain value (ratings 1, 2 and 3b) get no funding. In 2002-2003 75 percent of HEFCE research funds went to only 25 institutions out of a total of 135.

The Further and Higher Education Act of 1992, which ended the binary system, also established a single board of governors for the new universities converted from the former polytechnics, and removed them from local authority control. It limited the number of members in these boards to a minimum of 12 and a maximum of 24, with at least half of them to be external lay members to be appointed by the Privy Council. The act also limited the number of internal members to a maximum of two each, elected by the senate and students.

According to an article that recently appeared in the German newspaper (*Die Zeit*, quoted by a Turkish Newspaper, *Cumhuriyet Bilim Teknik Supp.* September 13, 2003), HEFCE distributed a total of 800 million pounds in 1990 among English institutions, and the institutions themselves generated an equal amount. Projections for fiscal 2005, however, indicate that HEFCE will distribute a total of 1.2 billion pounds, and the institutions themselves will generate 2.2 billion pounds.

Following the establishment of the Unified National System which ended the binary divide in Australia in 1988, CTEC was replaced and the National Board for Education and Training (NBEET) was established under the new mega Department of Employment, Education and Training (DEET). Thus the intermediary body at the national level was replaced by a body, NBEET, which consists of four sub-councils: the Schools Council, the Employment and Skills Formation Council, the Higher Education Council and the Australian Research Council. To complement these new arrangements the Committee for Quality Assurance in Higher Education was established in 1993 as an independent body to carry out quality assessment. Membership in the governing boards of Australian Universities varies between 10 and 50. The number of members, their qualifications and appointment and renewal procedures and set forth in provincial legislations. Following the changes in 1988, the governance of Australian universities have increasingly resembled that of American state universities, rather than the English universities which had initially served as their prototypes. Australian university presidents, appointed by governing boards, too, have increasingly taken on the role of the chief executive officer, much like their American counterparts.

The Jarrat Report was followed by two reports published by the OECD<sup>45,46</sup>, essentially emphasizing the points recommended in the Jarrat Report.

Germany is now hotly debating not only the introduction of fees and resource diversification, but also competition in higher education. The recently elected president of the *Hochschulen Rektoren Konferenz* (HRK), Prof. Med. Peter Gaehtgens, the former president of the Free University of Berlin, emphasized both points in his first speech on August 1, 2003.

Thus in the period from the beginning of the 19<sup>th</sup> century to the mid 1980's, the state in Continental Europe had assumed a **regulatory role** and a governance system had come into being based on a balance between the **academia**, which initially consisted only of the professorial oligarchy, but later included representatives of students and staff, at one end of a straight line and the **state bureaucracy** on the other. It was assumed that a **collegial atmosphere** would prevail in the community of scholars and students within the institution under the benign tutelage of the state. However, time showed that two degenerate cases of institutional behaviour were also possible. When the state prevailed, the **bureaucratic model** appeared, which nearly turned institutions into ordinary state departments. On the other hand, when the academia, or the **academic oligarchy**, a term used by Clark<sup>47</sup>, prevailed, the institutions were sometimes turned into political organizations. Drenth<sup>48</sup>, refers to this as the **political model** in which decisions are made based on negotiations and bargaining carried out between the different groups in the institution and the compromises reached thereof. Drenth further identifies an even more degenerate case, the **organized anarchy model**, which is characterized by a total ends-means inversion. All three types of institutional behaviour have been encountered in nearly all continental European countries, and much less frequently in the Anglo-Saxon countries. For example, in the seventies in Turkey, it was not uncommon for rectorial elections to go on for months. The rector, after all, is just a means to an end which consists of teaching and carrying out research and community services according to universally accepted academic norms. But putting a particular person in that office seemed to many an end in itself.

In the author's opinion, based on his more than 20 years experience at nearly all levels of higher education, both nationally and internationally, the stability and the success of the Anglo-Saxon governance system, in particular that of the American System, stems from the inclusion of lay members, not symbolically as in the cases of France and Spain, but with real decision making powers at the highest levels of governance, including the appointment of presidents and vice-chancellors with strong decision making powers that can display leadership.

Thus while the classical Continental European System can be represented on a straight line, one needs a triangle to depict the Anglo-Saxon System. In fact, Clark<sup>47</sup> in his seminal work on comparative governance systems has called this the **triangle of coordination**. This is shown in Figure 13. Statements in the parentheses are the author's interpretation, while the other's belong originally to Clark.

According to Clark, in the early eighties the former USSR represented the extreme case of state bureaucracy, which is now defunct. Italy represented academic oligarchy, and to a large extent still does so. On the other hand, the US represented a model that was responsive to the market. Japan was closer to the US than European universities not because of the structure of her public universities, but because of the dominant share of private universities in her higher education system, 81 percent as shown in Figure 3.

Starting in the nineties, the role of the state in higher education in most of the Continental European countries started to change from a **regulatory** one to an **evaluative** one in response to emerging market forces and technology-driven globalization. Briefly, this transformation is characterized by setting targets and priorities, rather than regulating processes, and evaluating outputs rather than controlling processes. This transformation naturally involves a devolution of decision making powers from the state bureaucracy to the institutions. It does, of course, require that the individual institutions are equipped with decision making powers especially in the areas of resource diversification and resource allocation, including those allocated by the central authority as well as those generated by the institution itself. This means a radical change in the budget systems of public institutions from line-item budgeting with earmarked funds, to **lump-sum budgeting using formulae** based on input and performance-related output parameters, e.g., student numbers, graduation rates, publications and patents.

The underlying aim of this transformation is to make the institutions responsive to markets, accountable to the society and **competitive in the global higher education market**, both for students, qualified faculty and research funds.

The market referred to here is in no way a totally unregulated market. On the contrary, it does involve, like markets for all types of goods, structures and procedures that protect consumers. In higher education these are to some extent manifested in the form quality audit and quality assurance mechanisms installed in the nineties. Such mechanisms innately involve centralization. Obviously, competitors have to comply with standards, but they cannot set them. For if the latter were the case conflict of interest would be unavoidable.

### 3.3. THE EUROPEAN RESPONSE

It is now clear to everyone concerned that to be a key player in the global higher education market, an institution must be **entrepreneurial**, a term also coined by Clark<sup>47,49</sup>. Briefly, this implies an institution that can combine public resources allocated to it together with the resources it generates by using all of the means available to itself in an **entrepreneurial manner**, but in compliance with universally accepted academic norms, to make its own budget as required by the range of activities in accordance with its mission statement. Mc Daniel's<sup>42</sup> work on comparative governance systems clearly shows that American public institutions have very clear advantages in this respect over their European counterparts, including institutions in the UK. These advantages particularly manifest themselves in the areas of less earmarked funds, authority to borrow money on the capital market, determinations of salaries, and admission of students.

In the author's views, transformation from the regulatory to the evaluative state can be represented in Figure 13, as a movement of a national system of higher education, taken as a whole, from the **state-academic oligarchy** axis toward the **market apex**, best represented by the American system.

For this reason, comments and interpretations included in parentheses that reflect the author's views, indicate the basic characteristics of various degenerate forms of institutional behavior that can be exhibited when the balance is lost between academia and the state in the classical continental European System.

Also included in Figure 13 are country names that are author's free estimates of the relative positions that various countries occupy after recent legislative changes.

Of particular interest are the cases of Holland and Sweden. In the nineties the Swedish system was radically changed. The UHA was abolished, and universities were transformed into entities which are now legally agencies under the government, but independent from direct ministerial interference. A governing board is established by the government in each university, comprising nine members directly appointed by the government, two elected by the academic staff, and three student representatives. The rector is appointed by the government, from outside the institution, upon the recommendation of the board after consultation with the academic staff. Initially the rector chaired the board and acted as the chief executive officer of the institution. Since 1997, however, the board is chaired by a "well-qualified and experienced external personality" who is not employed at the institution and is appointed by the government. It is up to the board to decide upon the inner structure of the institution. Institutions sign contracts with the government that include specific numbers of students at each program at each university determined according to labour market forecasts. Funding from public sources is based on **formulae** that include student numbers as well as output parameters, and is in the form of lump sums in five areas corresponding to teaching disciplines. Research funding is almost entirely competitive. Academic evaluation and quality assesment is carried out by the *Högskoleverket*, created to replace UHA that comprises eleven members all appointed by the government.

The current Dutch legislation was enacted in 1997 (*Het Bestuur en de Intrichting van de operbare Universiteiten*), according to which a five-member, completely lay board (*raad van toezicht*), is appointed by the minister of education for each university. This board, in turn, appoints the above mentioned *college van bestuur* that now comprises the rector and two external members. The academic senate (*universiteitsraad*), which formerly had considerable executive powers, has now been converted into a totally consultative organ to the board.

Funding from the public purse in Holland is in the form of a lump-sum budget based on a much simpler formulae compared to Sweden. In addition, students pay considerable fees, which makes the student demand much more cost-conscious. Research funding, again, is essentially on a competitive basis. Academic evaluation and assessment is carried out by an association of universities, *Vereniging van Samenwerkende Nederlandse Universiteiten (VSNU)*. Neither in Holland, nor in Sweden is funding based on the results of such evaluation and assessment.

Niklasson<sup>29</sup> has compared these new governance arrangements in Holland and Sweden with those in the UK and Australia, as examples of introduction of market mechanisms, and has concluded that the four cases all correspond to **quasi-markets**. It is interesting to note that both Holland and Sweden make no distinction in funding public and private institutions from public sources. On the other hand, no such funding is provided to the two private universities in Australia, and to Buckingham University in England.

Niklasson concludes that the move in Sweden and Holland has been from elected rectors with weak powers, to appointed ones with strong executive powers, as the cases are in the UK and Australia. The difference, however, is that in the former two cases rectors and boards are appointed by the government, while in the latter vice-chancellors are **hired** by the institutions themselves. Thus according to Niklasson, the distinction between the British and continental European systems is vanishing.

The author partly shares Niklasson's last view. With similar changes underway, this certainly is the case in Denmark, Norway and Austria, and in some Lander in Germany, but not in Italy, France and Spain.

A very interesting case is that of the *Chalmers Tekniska Högskola* in Sweden. This was founded as a private engineering school in 1829 by an Englishman, William Chalmers and his friends. In 1937 the institution was essentially taken over by the state. In 1994, however, it was again privatized in the form of a partly state-sponsored, non-profit foundation.

The German Legislation was modified in 1998, giving a lot more power to the Lander in areas including governance structures, performance related funding, evaluation and assesment, hiring of professors on temporary contracts, and establishment of private institutions. In 1998 a national accreditation body (*Akkreditierungsrat*) was established, comprising 14 members jointly appointed by the Conference of Ministers of Culture and Education and the Conference of Rectors (HRK) that includes 4 academics, 4 representatives of labour and employer unions, 2 students, 1 university and 1 fachhochschule rector, and two representatives of the Lander. This represents the first time laymen were given a say in German higher education at such a high level.

Another interesting case is that of Lower Saxony, where radical changes were made after the amendment of the federal framework law in 1998 that allowed states to establish different legal status for universities. The Lower Saxony University Reform Act of June 24, 2002 gives universities the choice of remaining a state institution or being transformed into a foundation as a legally self-governing body, financially supported by the state. The financial support is based on the achievement of specific targets laid out in a contract signed between the state and the institution, and built into the budget approved by the parliament.

A supervisory board for the foundation replaces ministerial control, which in the past included the appointment of professors from a short list of three candidates proposed by the university. Board members are appointed by the minister on the advice of the senate. The change into this status requires a two-thirds majority vote in the university senate. So far five universities, including Göttingen, have opted for this change.

Even more radical changes were introduced in Austria in a reform process that took nearly ten years. In 1993, a new organ called *Universitätsbeirat* was established in each university as an advisory body consisting only of external members. This body was given a key role in screening and evaluating candidates for rectorships.

Law No. 120 enacted on August 9, 2002 now establishes a university council as the highest governing body of each university. The number of members in the council can be 5, 7 or 9, but all are external lay members. In the case of a five-member council, two are elected by the senate, and two are appointed by the minister; these four then coopt the fifth member. The council has the authority to sign the performance agreement, which in effect is a contract in public law, with the ministry, upon which state financing is based. The council is authorized to advertise rectorship positions, to appoint the rector from a short list of three candidates proposed by the senate, and to dismiss the rector and vice-rectors when necessary. The change also includes the termination of the civil servant status of academics and staff. Lump-sum budgets are based on inputs and outputs specified in the target agreements. Institutions are also authorized to set up foundations, companies and other business enterprises.

New legislative changes underway in Denmark include a board of directors dominated by external members with the powers to appoint rectors and deans.<sup>50</sup> Likewise, the new law passed in Norway in June 2002, establishes boards dominated by external members with full powers concerning internal organization of the institution, and appointment of rectors, deans and department heads. An independent body for accreditation and evaluation (NOVUT) has also been set up recently.

Japanese public universities perhaps still retain the characteristics of classical continental European universities with elected rectors and strong ministerial regulation. Radical changes, however, are imminent. These include an administrative council with both internal and external members that has the power to nominate candidates for rectorship to the minister. The rector will be given full power concerning internal appointments.

The foregoing summary and analysis shows that the role of the state in continental Europe started to change from regulatory to evaluative in the late eighties and the early nineties, and this was immediately followed by even more radical changes aimed at making institutions of higher education more responsive to the market and societal needs. The common features of all these changes are:

- The transfer of ministerial powers to governing bodies where external lay members are in the majority;
- Appointed rather than elected rectors that are not only the academic leaders, but also chief executive officers with strong decision-making powers;
- Lump-sum budgets based on formulae that include not only input, but also performance-related output parameters;
- Equipping of institutions with decision making powers so that they can act in an entrepreneurial manner to diversify their financial resources and to complete; and
- Requiring academic evaluation and assesment procedures and mechanisms to be installed within institutions and the setting up of independent bodies to monitor and oversee these activities.

In other words, continental European universities, especially higher education institutions in Austria and Northern Europe, and to some extent those in Germany, have radically moved away from the academia-state axis toward the market (society) apex as shown in Figure 13, becoming more entrepreneurial, and more like American institutions in structure and governance. The Economist<sup>52</sup> had this to say about American higher education: "The unique advantages of America's universities go beyond the hybrid vigour of a system in which private and state institutions have all been allowed to seek out their competitive advantage. Much of the system's success derives from the readiness of American academics to let market forces work. In contrast to most countries, where pay is centrally negotiated, competing American campuses strive to outbid one another for talent. How ready are academics in continental Europe and Japan to accept such a free-for-all?"

A study by the Bank of Boston reported by The Economist estimates that if the 4000 or so companies founded by Massachusetts Institute of Technology graduates and faculty were turned into an independent nation, the income they produced would make it the 24<sup>th</sup> richest nation in the world. These firms account for annual revenues of some US \$230 billion, and employ more than one million people. Over half of them were set up within 15 years of the founders' graduation from MIT, and one in six was founded within five years. Many of these firms are small, but 17 of them employ over 10,000 workers.

In 1999 417 new products were introduced from 98 institutions of higher education in the US. These products based on R&D carried out in American institutions which were licensed to industry, generated US \$40.9 billion of economic activity, and supported 270,900 jobs.<sup>32</sup>

More than half of the Nobel prizes have been awarded to American scientists and scholars.

It is statistics like the foregoing that had led the then French Minister of National Education, Claude Allegre, a distinguished geologist who has worked in American universities, to express his great admiration for American institutions like MIT and Stanford in 1998.<sup>16</sup>

It is therefore no wonder that the **Sorbonne Declaration**, signed in Paris on May 25, 1998 by the Italian, British and German Ministers was initiated by Allegre. This was the precursor to the somewhat more detailed **Bologna Declaration** signed by 31 ministers on June 19, 1999.

These documents are expressions of will at the highest political level to create the **European Higher Education Area** that can compete in the global higher education market. The latter document urged higher education institutions to:

- establish transparent degree structures based on bachelor's-, master's-, and doctoral levels;
- encourage student and staff mobility;
- develop integrated programs for education, training and research; and
- establish academic evaluation and assessment procedures.

In every continental European country there is now an organization for evaluation and assessment. Some are governmental agencies like the Danish Evaluation Institute (EVA), the Norwegian Quality Assurance in Education (NOKUT), the German *Akreditierungsrat*; some are owned collectively by higher education institutions like the VSNU in Holland and the Foundation of Portuguese Universities, and some are independent public entities like the QAA in the UK and the CNE in France.

In most cases reports are made public. But other than RAE in England, their results are not directly linked to funding for teaching-related recurrent expenditures. However, funding for research is increasingly competitive with earmarked funds from research councils and private sources.

To some, activities taken up after 1999, broadly referred to as the **Bologna Process**, mark a return to the origins of the European university, the cradle of modern higher education. But to others, the Bologna Process is an effort to make continental European higher education systems more like the American system.

Since then the bachelor-master system has been partially introduced only in Germany, Holland and Norway, and taught master's-level courses have increased in these countries. Many continental European countries still have a long way to go both in introducing compatible degree systems, as well as in establishing evaluation and assessment procedures. There is, however, no question that the Bologna Process has sparked a flurry of activities, and has formed a rationale for the changes in governance systems outlined above.

## 4. CONCLUDING REMARKS

The university is one of the oldest institutions in the world. This has been best expressed by Kerr as follows:<sup>53</sup> *“About eighty five institutions in the Western World established by 1520 still exist in recognizable forms, with similar functions, and with unbroken histories, including the Catholic Church, the parliaments of Isle of Man, Iceland, and Great Britain, several Swiss cantons, and seventy universities.”*

The university as an institution has thus withstood the test of time. It has continuously adapted itself in terms of governance, academic and administrative structures, contents of curricula, and range of activities and functions, to meet changing demands and societal needs.

It has successfully produced some of the key production factors throughout history as well as:

- socializing students by inculcating in them the skills and attitudes necessary to be contributing citizens in a democratically governed society;
- providing citizens social mobility so that they can fully participate in society; and
- being the home of disinterested scholarship in the pursuit of truth in an unfettered environment free of any form of dogma where only universally accepted academic norms reign.

In the technologically-driven and internationally competitive global knowledge economy, higher education systems are faced with an entirely new set of challenges. In the author’s opinion, the new paradigm of higher education systems worldwide is **meritocratic and entrepreneurial governance** that requires strong intellectual, academic and managerial leadership at the top of the institutions. The basic challenge is to skillfully use and contain the new market forces. It is a fallacy to think that partnerships with businesses and other non-educational partners constitute a threat to the soul of universities and academic integrity. The US, Canadian and European presidents, rectors and vice-chancellors agree that society will place greater emphasis on higher education’s role in workforce preparation than in promoting social development and cultural identity.<sup>10</sup>

In the global knowledge economy, characterized by intense competition in every conceivable area, higher education is moving towards a new system of governance, where market forces and public policy instruments are converging in new ways. State is generally withdrawing from directly regulating and/or managing institutions. Instead, new forms of control and influence are being introduced, based essentially on holding institutions accountable for performance through powerful enforcement mechanisms, including funding and quality assessment. The traditional model of internal management of institutions of higher education, particularly universities, is collegial and consultative in nature, with boards and councils comprising elected representatives of professors, junior academics, students and staff.

However, recent changes in many countries are in the direction of strengthening the power of the rector, the president or the vice-chancellor with a concomitant loss of authority and decision making power on the part of traditional participatory and collegial bodies, and a parallel increase of external lay members in the upper governing bodies of institutions.

Although election of university leaders still continues in some countries, the trend is now moving towards appointment by a board with a majority of external lay members.

In an environment where knowledge is being created and becoming obsolete at dizzying rates, and where new jobs are appearing and others are disappearing, it is obvious that early specialization will lead to early marginalization in the global job market. This has implications for higher education systems worldwide in terms of curricula, course contents and degree programmes.

It may therefore be worthwhile to revisit the medieval university where a first degree (in today’s terminology) in liberal arts (the *trivium* and the *quadrivium*) was required to proceed on to the professional schools at the *graduate-level*. This could also possibly be a way of fulfilling the Humboldtian dreams of *Lehrfreiheit*, *Lernfreiheit* and *Wissenschaft als Beruf*, as well organizing the university in the way Newman envisioned, as *“a place of teaching liberal or philosophical Knowledge”* which he defines as *“a comprehensive view of truth in all its branches, of the relations of science to science, of their mutual bearings, and their respective values.”*

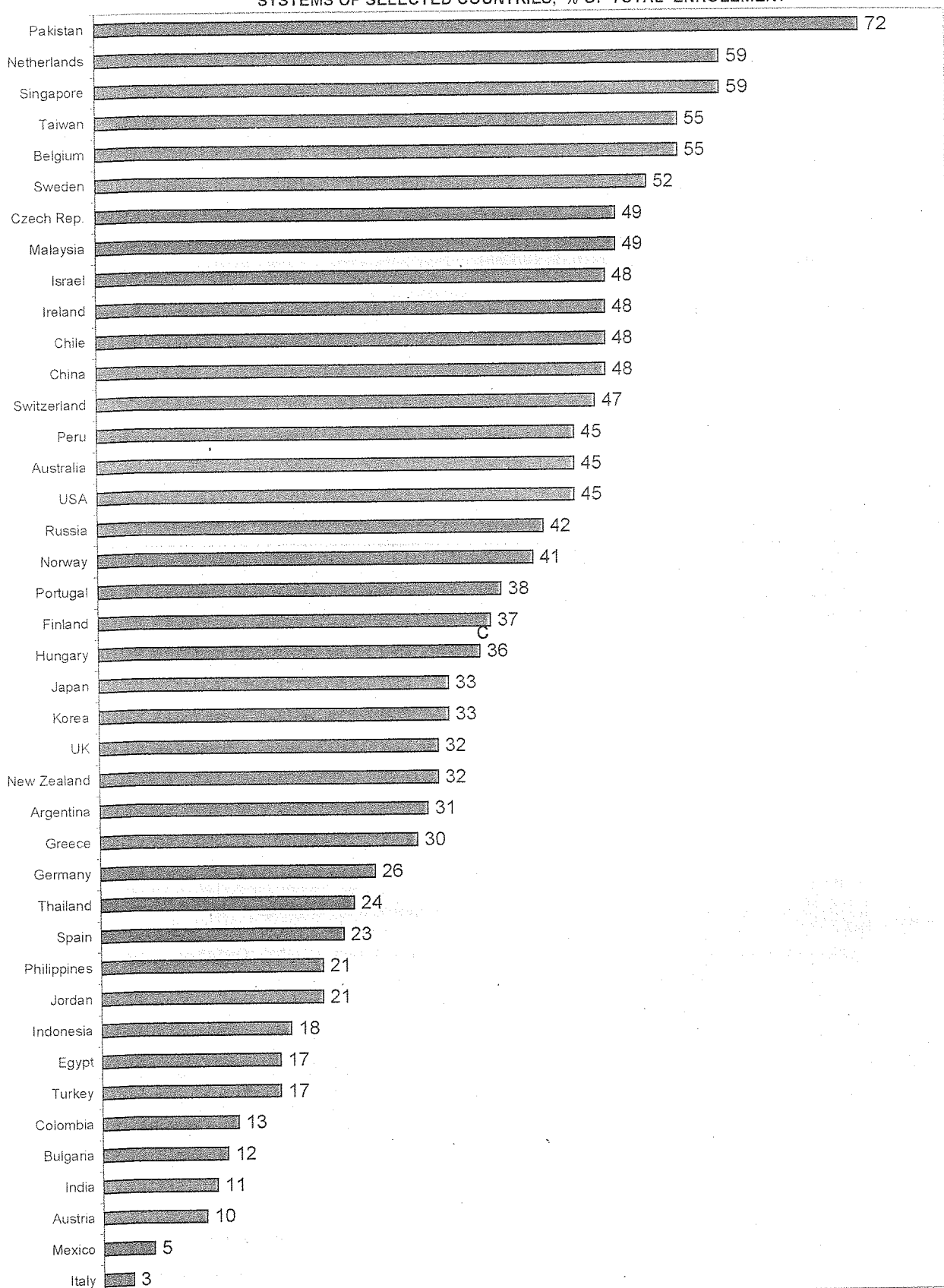
This definition by Newman more than a century ago, perhaps is a very succinct way of defining the aim of education in the global knowledge economy where relations and bearing are much more intertwined.

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# FIGURES AND TABLE

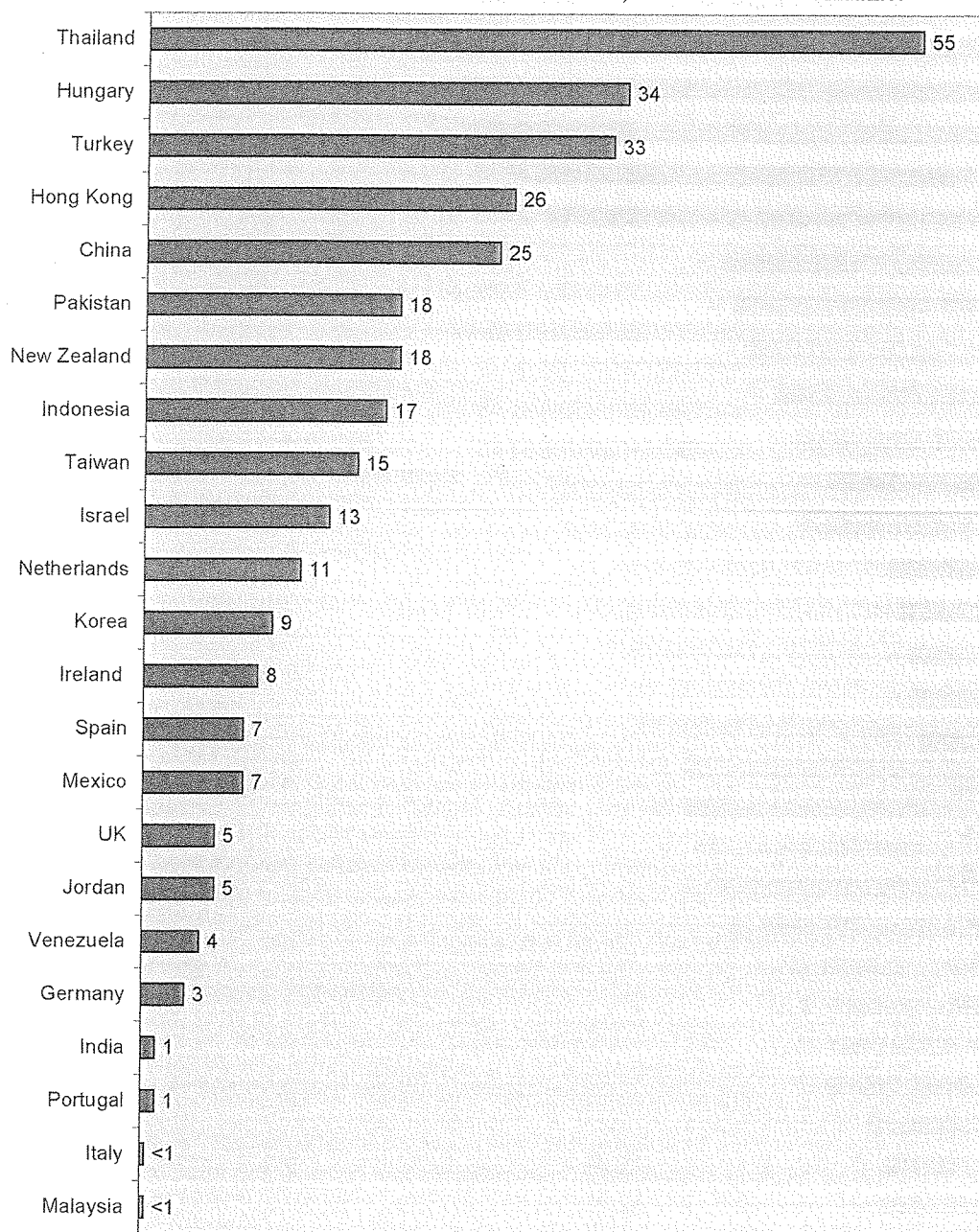
FIGURE 1  
SHARE OF VOCATIONAL PROGRAMS OF SHORTER DURATION IN HIGHER EDUCATION  
SYSTEMS OF SELECTED COUNTRIES, % OF TOTAL ENROLLMENT





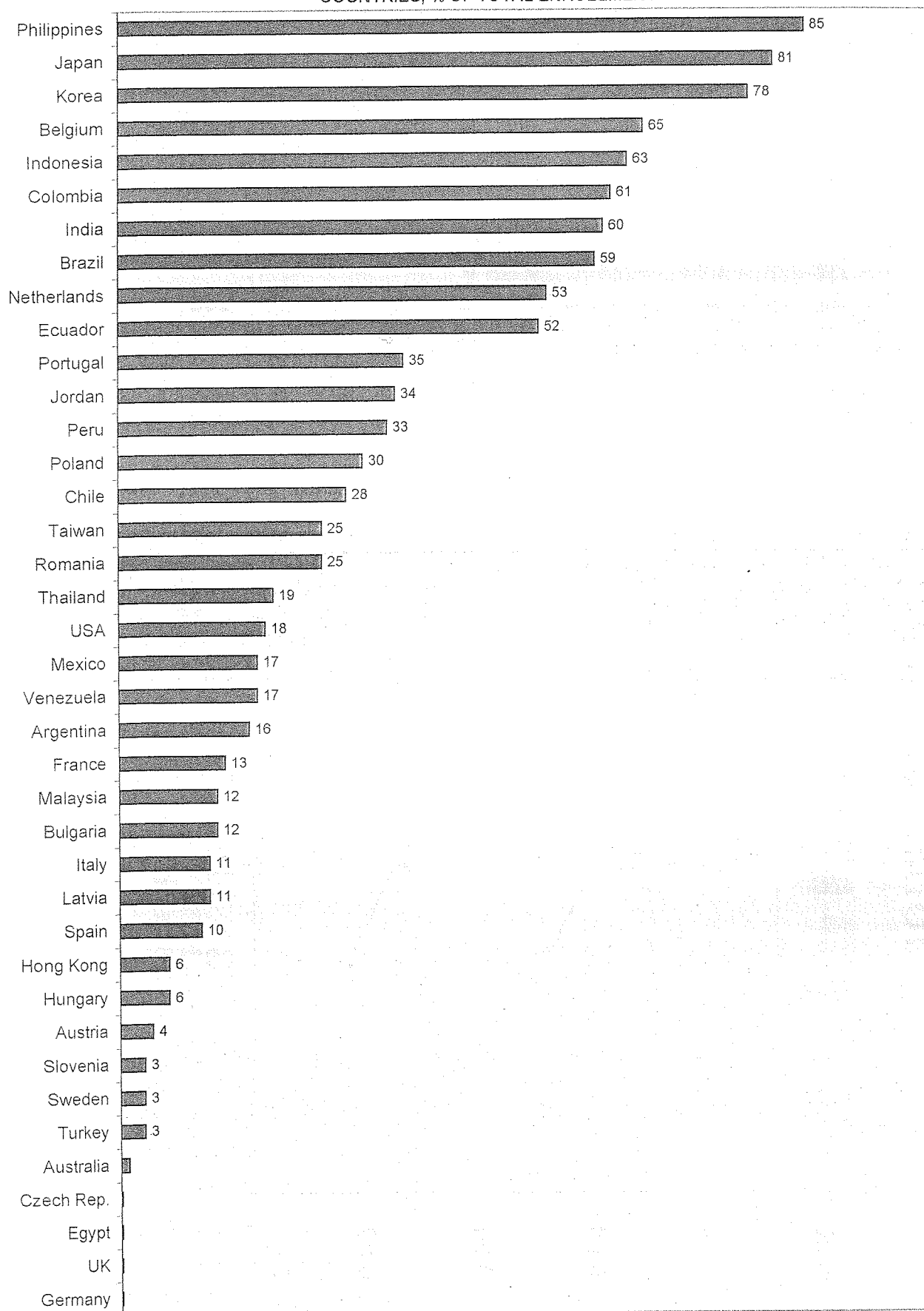
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FIGURE 2  
SHARE OF DISTANCE EDUCATION INSTITUTIONS IN HIGHER EDUCATION SYSTEMS OF  
SELECTED COUNTRIES, % OF TOTAL ENROLLMENT



# FIGURES AND TABLE

FIGURE 3  
SHARE OF PRIVATE INSTITUTIONS IN HIGHER EDUCATION SYSTEMS OF SELECTED COUNTRIES, % OF TOTAL ENROLLMENT



# F I G U R E S   A N D   T A B L E

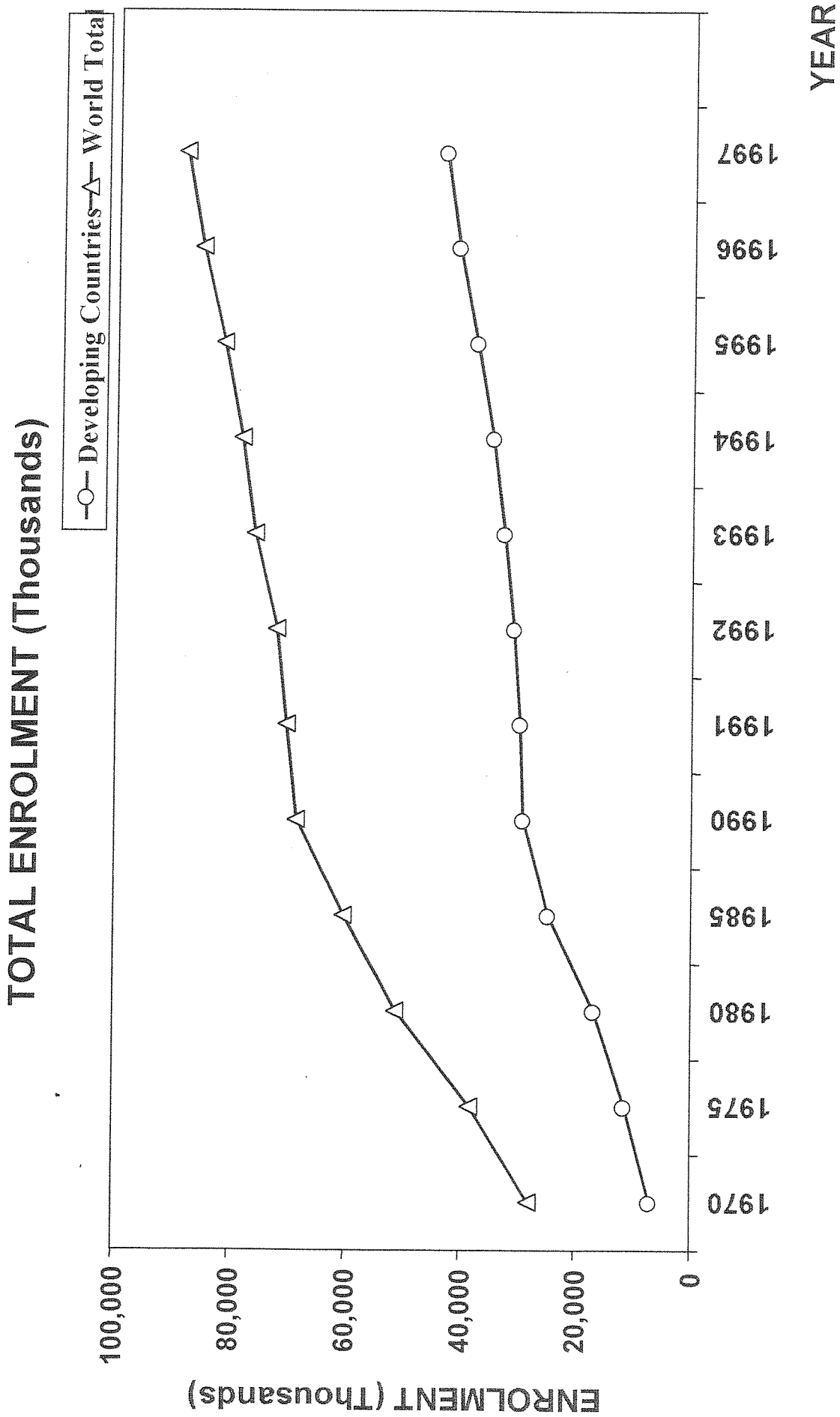


Figure 4 Total Enrolment in Higher Education in Different Country Groups

# F I G U R E S   A N D   T A B L E

## GROSS ENROLMENT RATIO

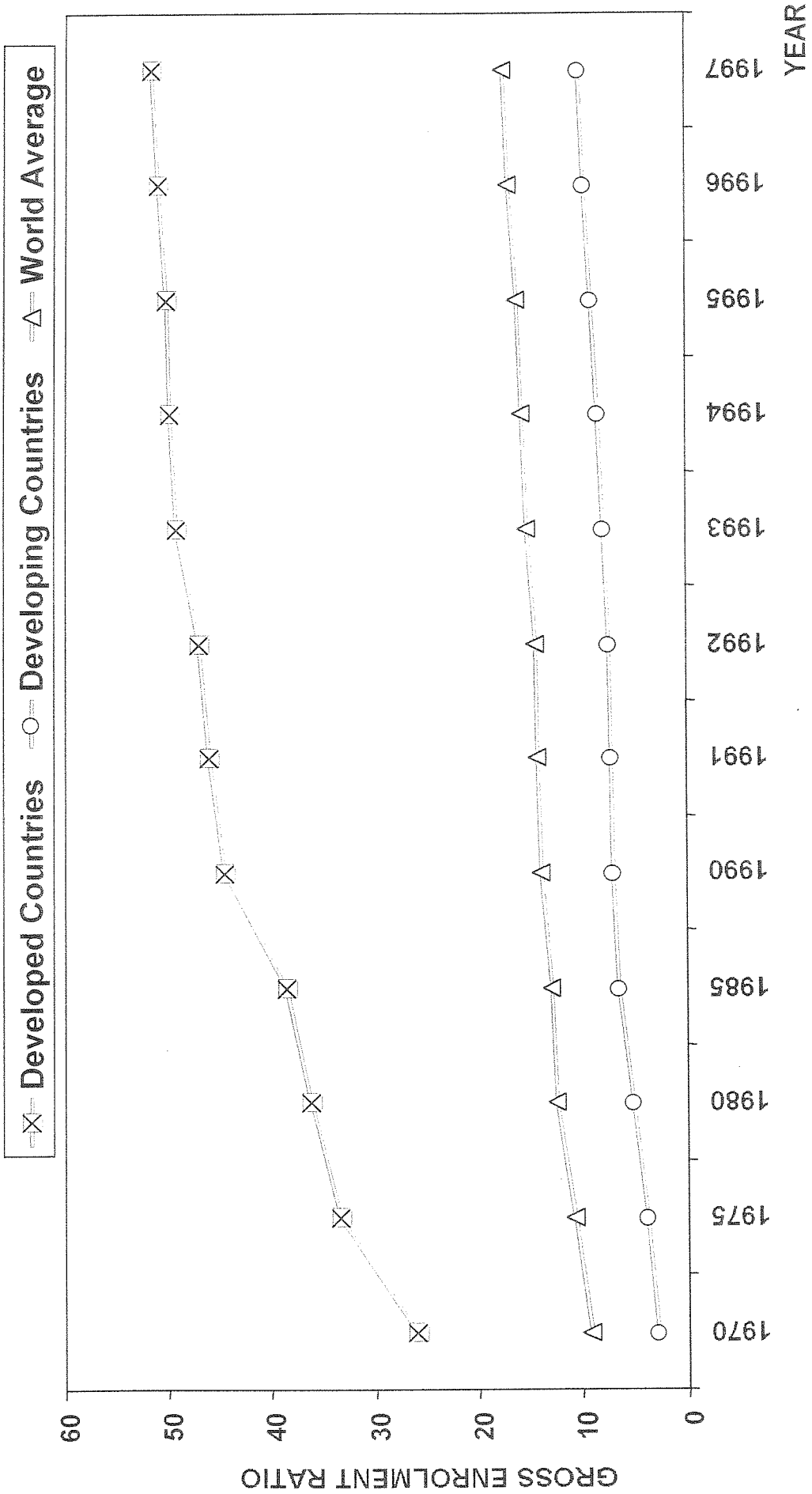
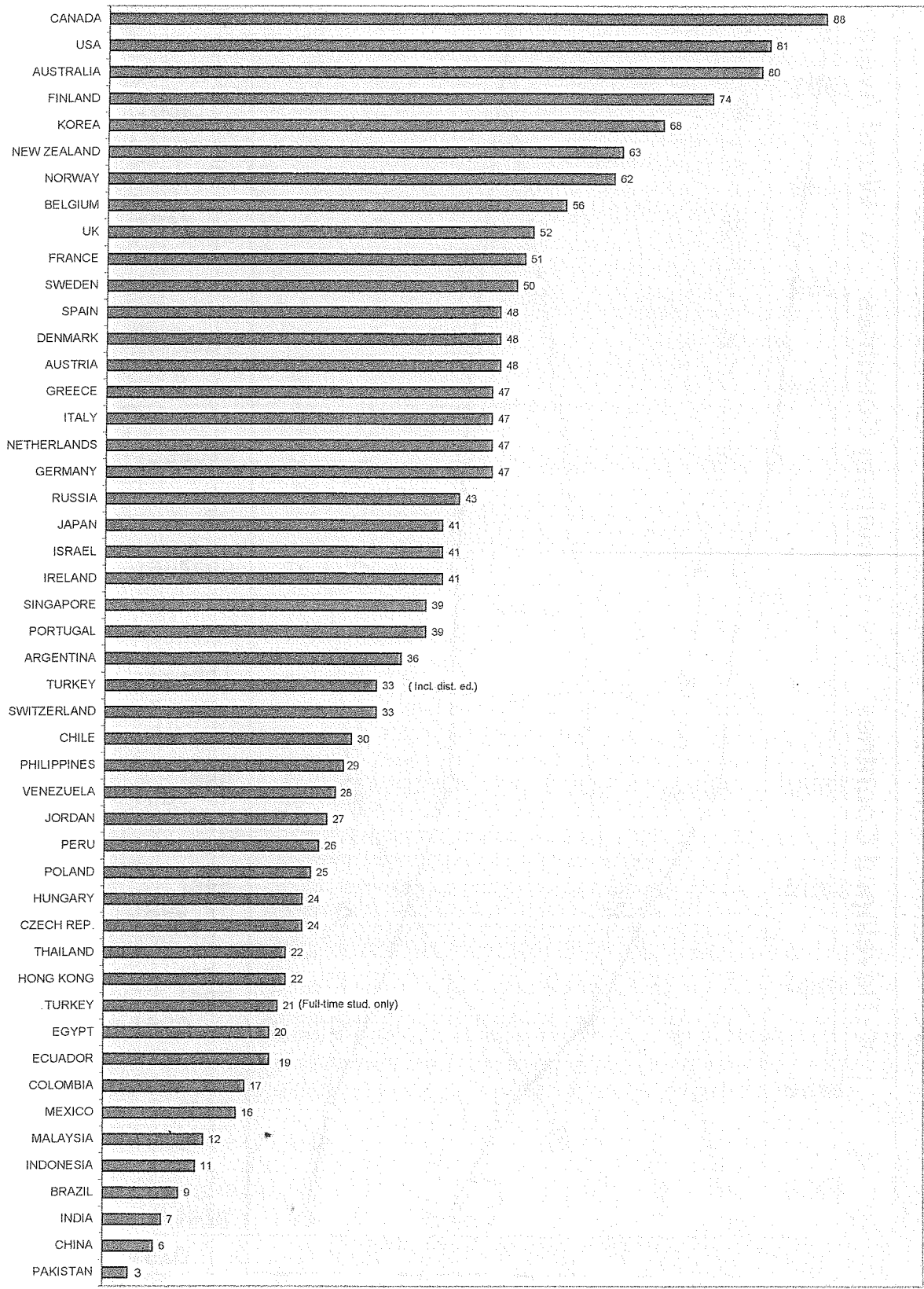


Figure 5 Gross Enrolment Ratios in Higher Education in Different Country Groups

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FIGURE 6  
GROSS ENROLLMENT RATIO IN SELECTED COUNTRIES, %



# F I G U R E S   A N D   T A B L E

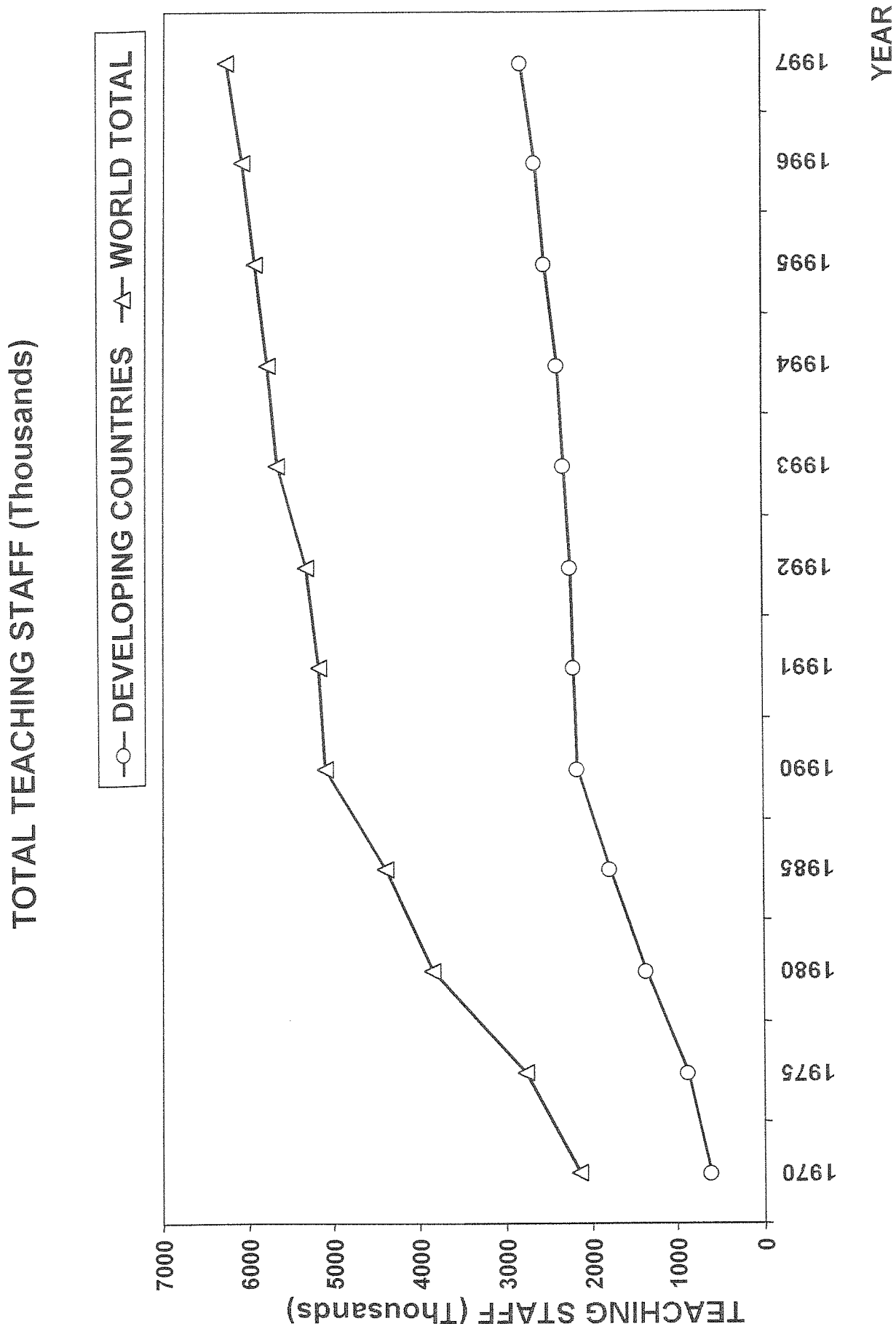


Figure 7 Teaching Staff in Higher Education in Different Country Groups

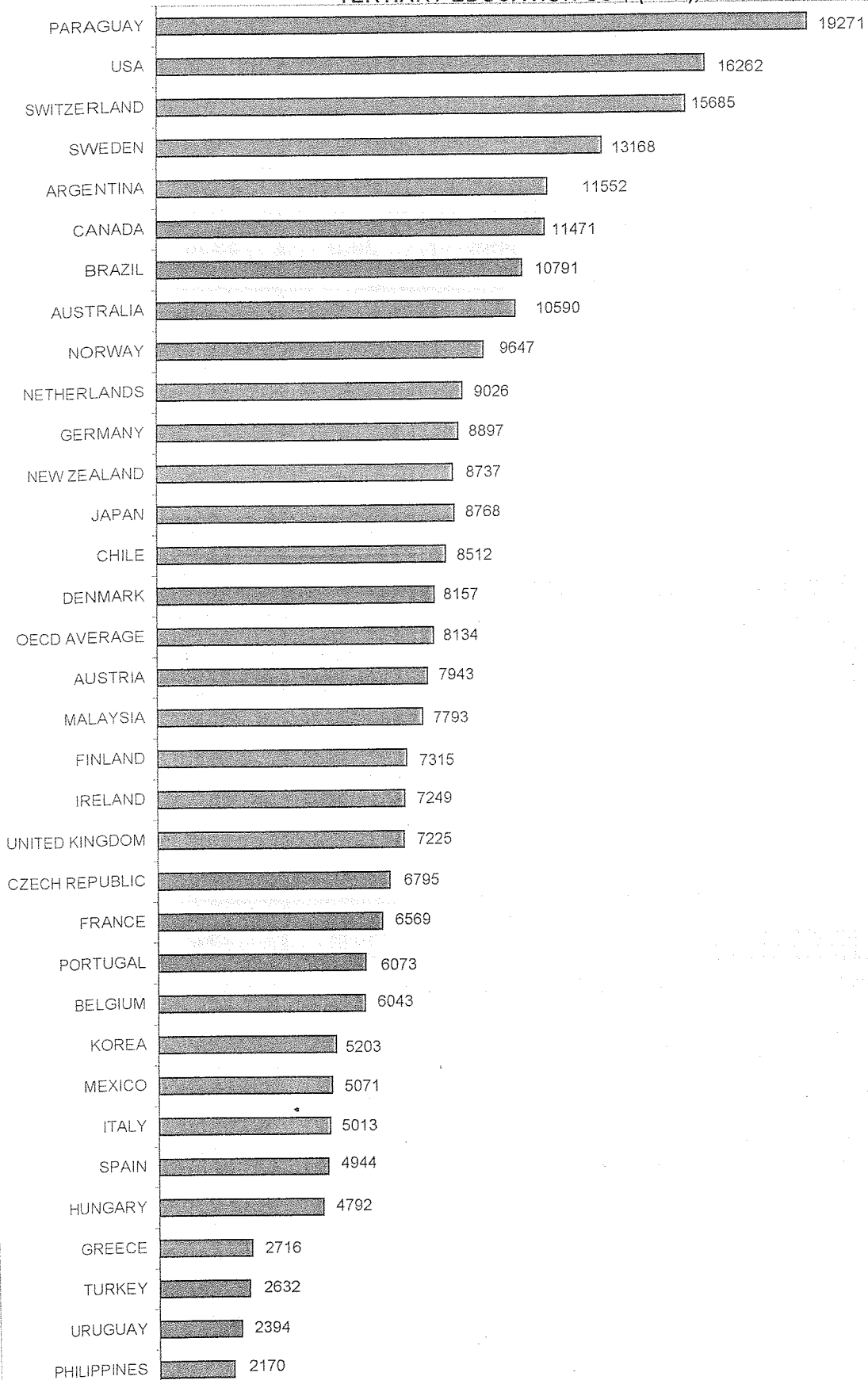
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**TABLE 1**  
**PUBLIC EXPENDITURE PER STUDENT**

COUNTRY GROUP / REGION	1985		1995	
	US \$	% GNP	US \$	% GNP
WORLD AVERAGE	2011	66.1	3370	58.2
DEVELOPED REGIONS	3498	30.5	5936	25.5
NORTH AMERICA	3761	23.0	5936	25.5
ASIA / OCEANIA	3720	34.4	5488	17.5
EUROPE	2975	36.4	6585	32.9
COUNTRIES IN TRANSITION	666	26.5	457	21.7
DEVELOPING REGIONS	602	103.9	967	78.9
SUB-SAHARAN AFRICA	1531	481.5	1241	433.9
ARAB STATES	2211	115.6	1588	73.5
LATIN AMERICA / CARRIBEAN	548	30.4	937	27.2
EAST ASIA / OCEANIA	406	93.1	709	70.3
SOUTH ASIA	333	77.6	1058	89.1
LEAST DEVELOPED COUNTRIES	299	153.9	252	125.6

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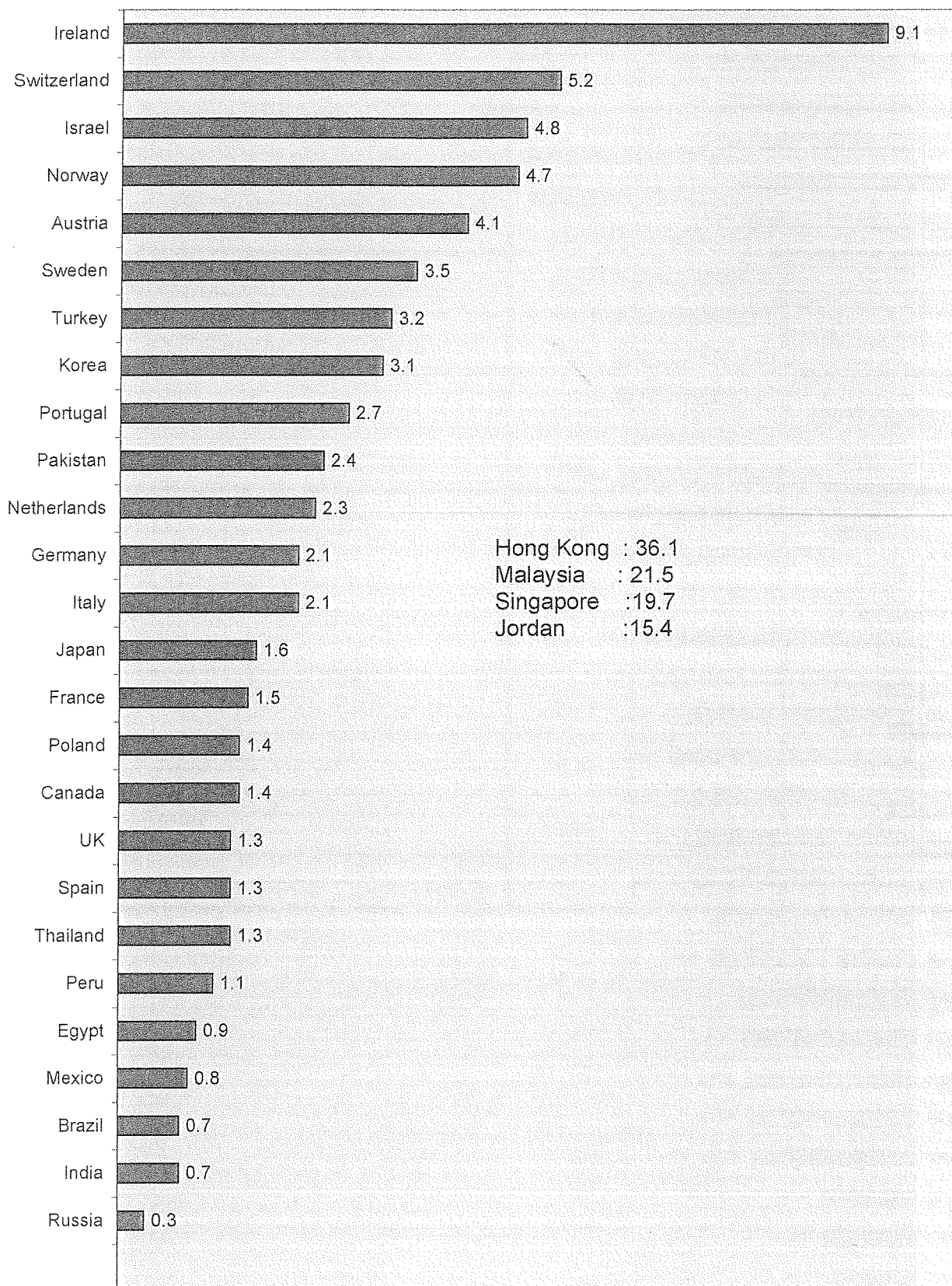
**FIGURE 8**  
**INSTITUTIONAL EXPENDITURE PER STUDENT IN**  
**TERTIARY EDUCATION US \$ (PPP), 1997**





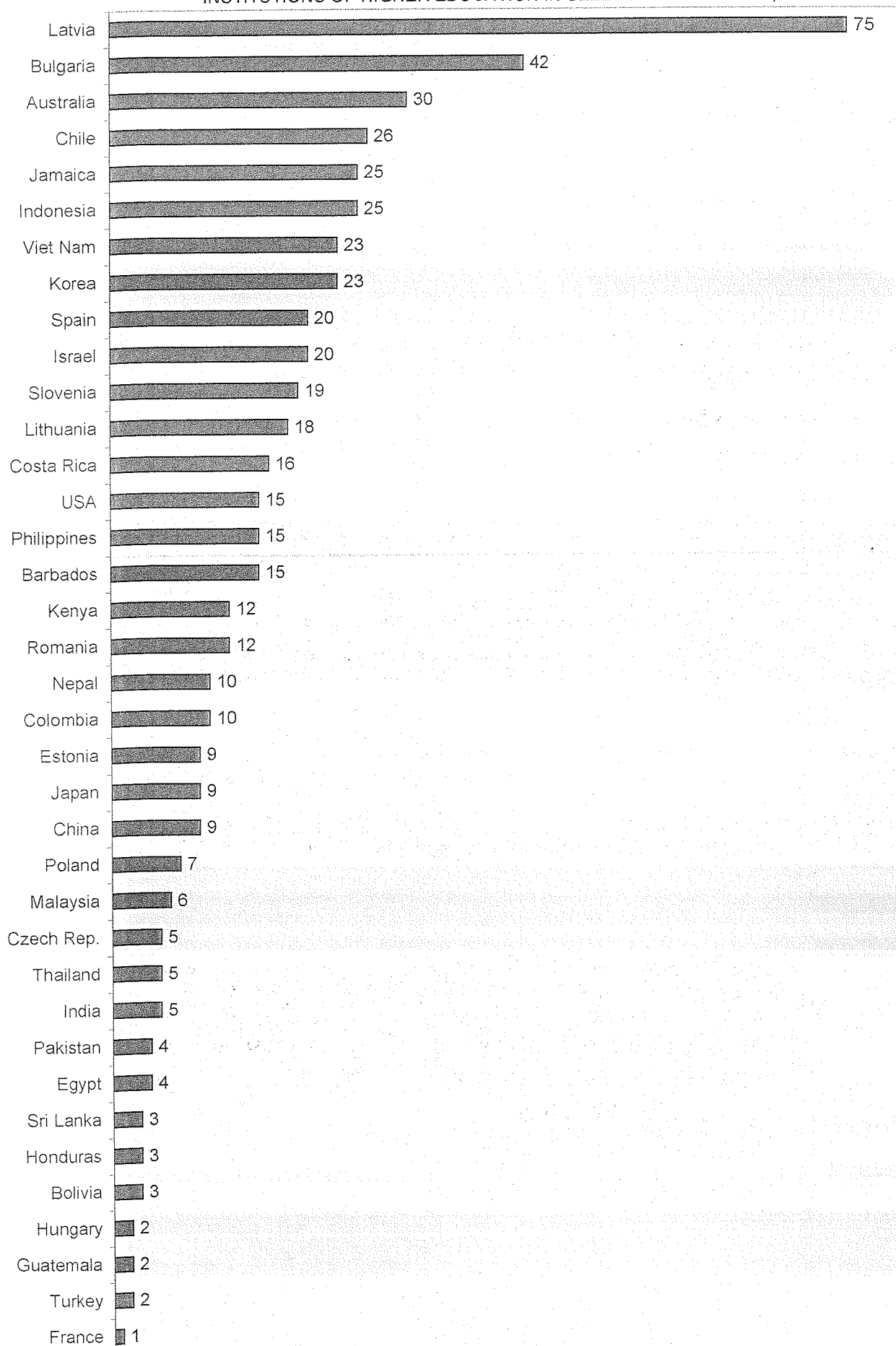
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FIGURE 9  
RATIO OF STUDENTS STUDYING ABROAD  
TO THOSE ENROLLED AT HOME  
INSTITUTIONS, %



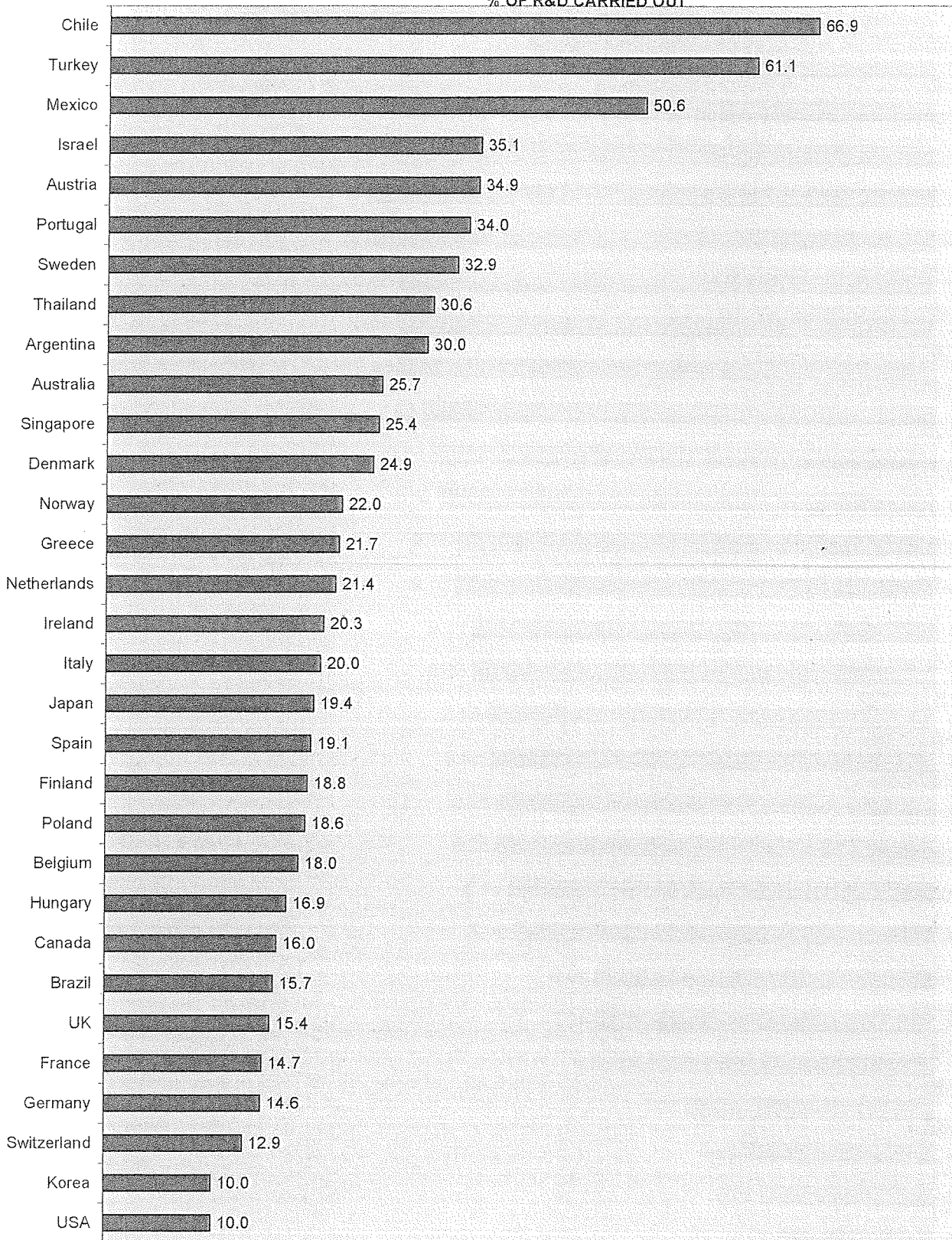
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FIGURE 10  
RATIO OF REAL TUITION FEES TO PUBLIC EXPENDITURES IN PUBLIC  
INSTITUTIONS OF HIGHER EDUCATION IN SELECTED COUNTRIES, %



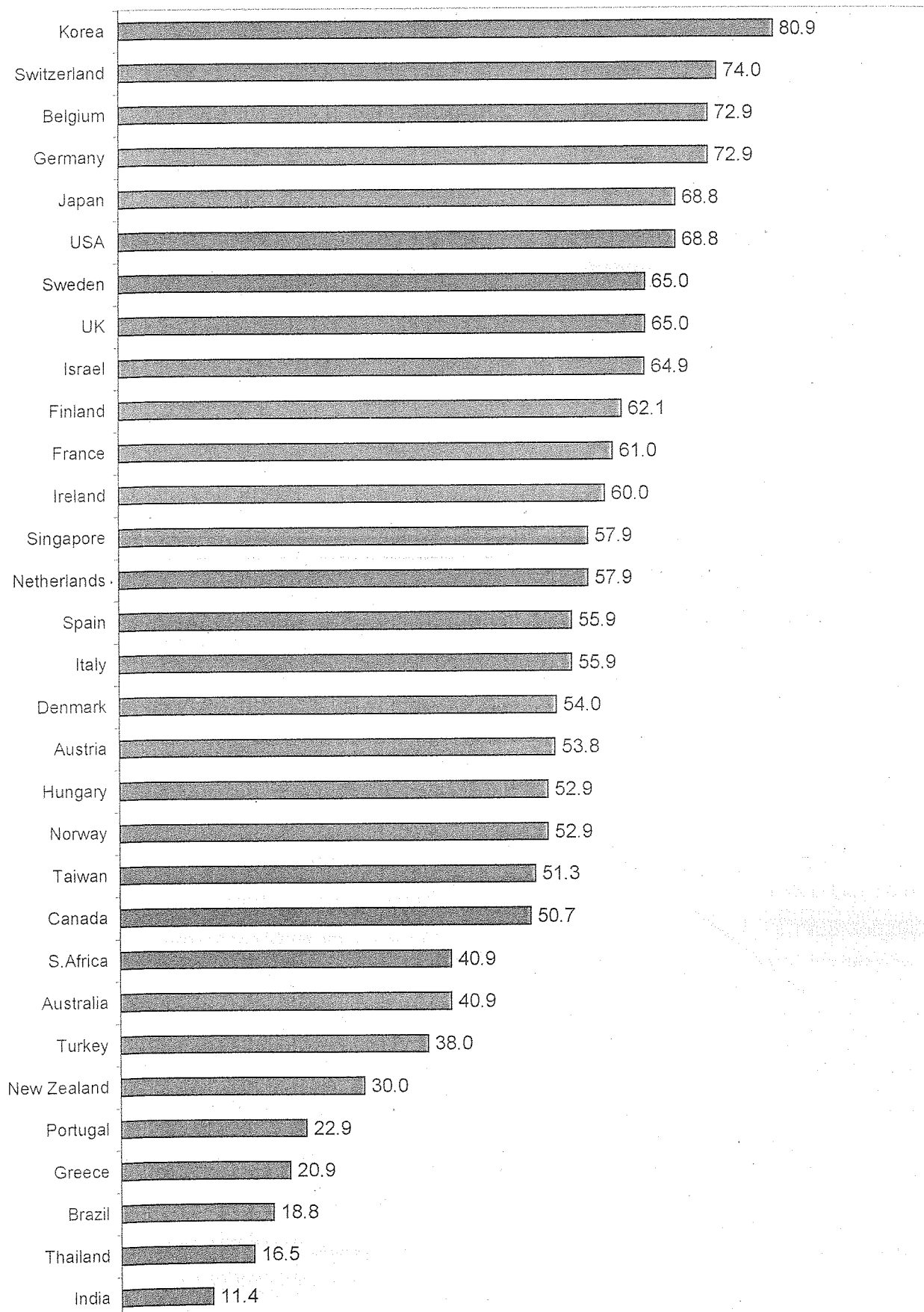
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FIGURE 11  
SHARE OF UNIVERSITIES IN R&D EXPENDITURES IN SELECTED COUNTRIES  
% OF R&D CARRIED OUT



# FIGURES AND TABLE

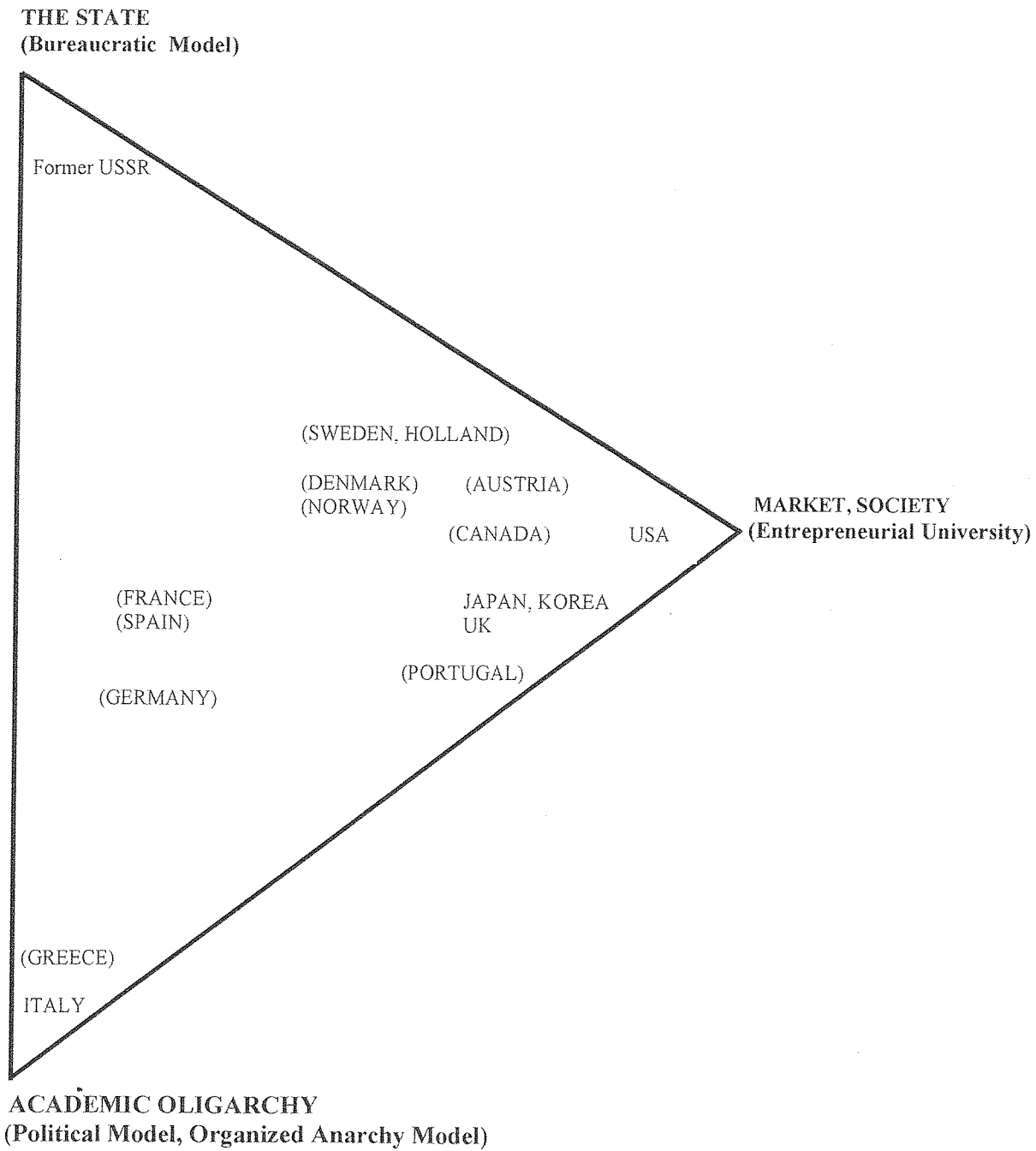
FIGURE 12  
SHARE OF PRIVATE SECTOR IN R&D EXPENDITURES IN SELECTED COUNTRIES  
% OF R&D CARRIED OUT



# FIGURES AND TABLE

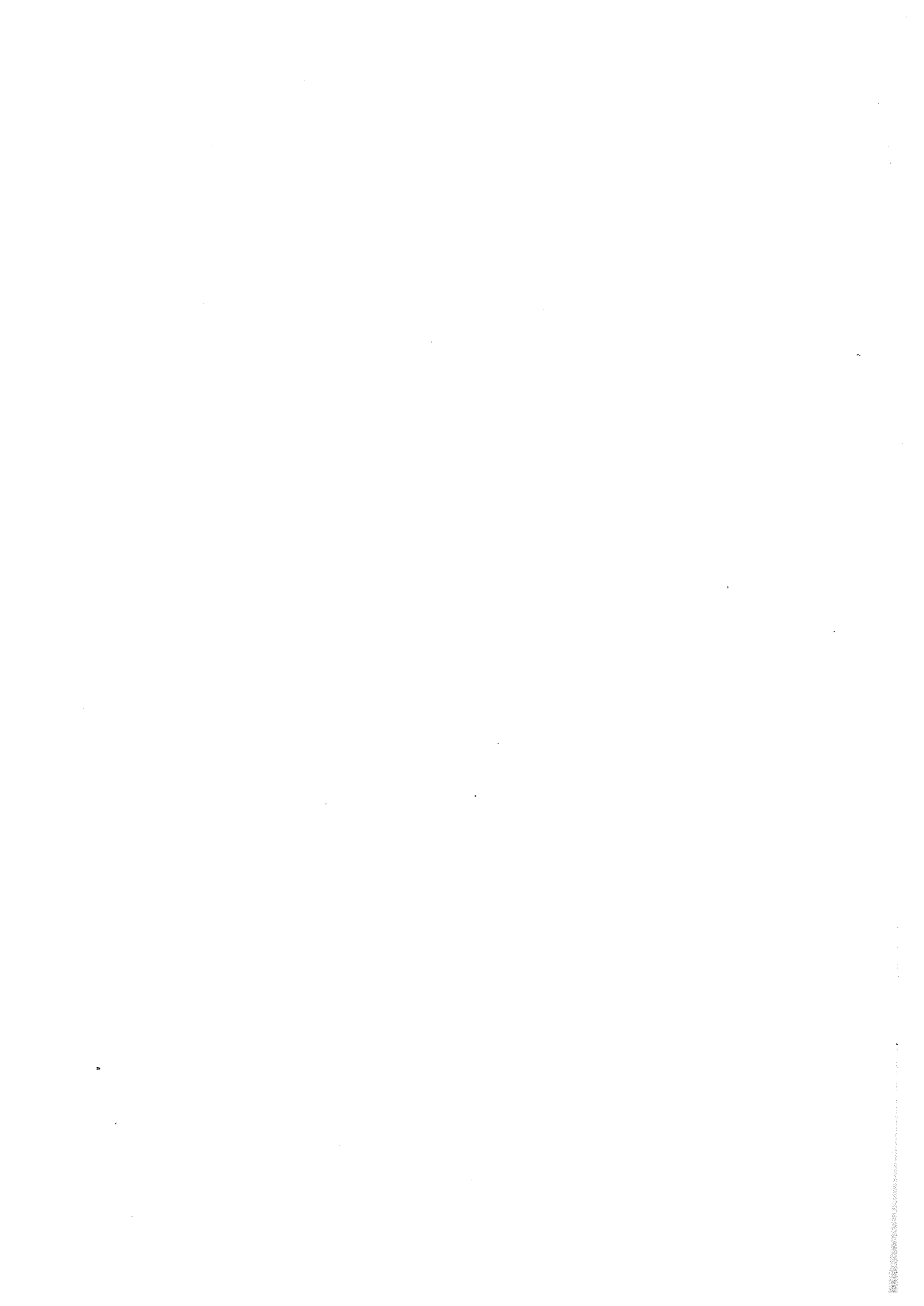
FIGURE 13

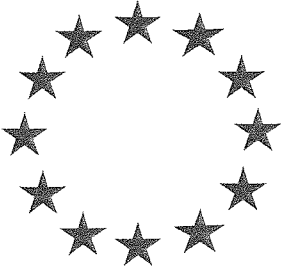
THE TRIANGLE OF COORDINATION



Note: The countries shown in parentheses and their relative locations in this figure are the authors' interpretation, as are the models indicated on the apexes.







*Azione Jean Monnet  
Polo europeo "Euromediterraneo"*



UNIVERSITÀ  
degli STUDI di LECCE

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The Jean Monnet Project targets those social science disciplines in which community developments are an increasingly important part of the subject studied, i.e.: European Community Law, European Economic Integration, European Political Integration, History of the European Construction Process.

During the period 1990 to 2002, the Jean Monnet Project has contributed to the setting up of over 2.500 academic projects in European integration studies, including:

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Prof. Cosimo Notarstefano

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- The attribution of visibility to scientific and material resources on European integration issues available within a university or region.
- The development of a synergy between available resources.
- The organisation of debate on the European construction process with an opening towards civil society thus ensuring an impact at a local and regional level.