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# ACADEME

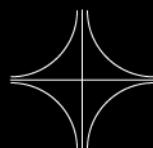
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Journal of Leadership  
and Management in Higher Education



Volume 1 Number 3 September 2010

<http://iaup.org/official-activities/academe>



# ACADEME

Journal of Leadership and Management in Higher Education  
International Association of University Presidents

ACADEME, an externally refereed higher educational quarterly, embraces theory, research, analysis, history, philosophy, policy and practices. The journal seeks to foster exchanges among practitioners, policy makers and scholars and to provide a symposium for comment on leadership and management in higher education.

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# ACADEME

Journal of Leadership  
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From Localization to Internationalization to Globalization or Vice Versa?:  
Directions of Campus Leadership in the 21st Century.

## **IAUP – Leading Leaders and Higher Education Worldwide**

The International Association of University Presidents (IAUP) is an association of university chief executives from higher education institutions around the world. The primary purpose is to strengthen the international mission and quality of education of these institutions in an increasingly interdependent world, and to promote global awareness and competence as well as peace and international understanding through education.

The IAUP is an association of around 600 members, who are/were leaders on institutions of higher education, i.e. rectors, presidents, chancellors and vice-chancellors. IAUP is independent of all ideological and political interests, and foster global cooperation as well as cultural diversities and social cohesions at all levels (worldwide, regional, national, sub-national and local).

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#### **“Peace, Welfare and Security through Education”**

- To provide a worldwide vision of higher education.
- To strengthen the international mission of institutions throughout the world.
- To promote academic exchange and collaboration.
- To make every effort so that the voice of educational leaders is heard.
- To promote networking and collaboration between leaders of universities, supporting sustainable development in a context of global competency.
- To promote peace and international understanding through education.

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The Triennial meeting is held as a conference for higher education leaders every three years. The IAUP attempts to sensitize its membership to the opportunities and challenges ahead. In addition to the Triennial, the IAUP Executive Committee meets at Executive Committee Meetings to formally

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The Regional Chairs initiate activities which are open to members of IAUP and which maintain the global interaction and dynamism that characterize IAUP. The various Regional Councils take major responsibility for many programmatic events.

In addition, the IAUP conducts annually numerous seminars, conferences and workshops on various essential cultural and political issues in different parts of the world and often in cooperation with global organizations.

The International Association of University Presidents (IAUP) is a unique worldwide platform. It facilitates the exchange of professional experience through conferences, seminars, publications, working groups and commissions and with other projects.

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## Editorial

# **From Localization to Internationalization to Globalization or Vice Versa?: Directions of Campus Leadership in the 21st Century.**

Like most activities providing services to human populations, provision of higher or tertiary education has also undergone evolutionary developmental stages with different levels and degrees of sophistication and success in different regions of the world. Starting from local concerns especially in key cities, to national, regional and now at international or even global extent, the issue interests many educators and administrators.

Thus, the members of the Editorial Board of the ACADEME have devoted this issue to the comparative analysis of the systems of ranking, the evolutionary development of internationalized or globalize systems of tertiary education provision and management among some IAUP member universities.

Some of the articles started with an attempt to differentiate between internationalization and globalization of higher education provision and administration. Globalization is usually considered as the product of technological development especially in modes of transportation and sharing of information thus facilitating movement of professors, researchers, students and transfer of information and technologies. However, it is obvious that more technologically advanced and richer countries would have greater advantages in these activities. That is why, in some developing countries, this is also sometimes considered as a new form of intellectual colonialization. Thus, many universities specially the traditional ones and those in developing countries, prefer the term internationalization where there is a free choice of countries or institutions for partnerships as well as a more equal extent or similar areas of interests in their cooperation. Whether it is globalization or internationalization, there are some advantages for participating institutions but are also constraints and limitations for some especially in developing countries.

The first paper was by Dr. Ricardo P. Pama, the President of the University of the Cordilleras, Baguio City and Dr. Lourdes T. Nepomuceno, Director for International Affairs, Angeles University Foundation of Angeles City, Philippines. They recognize that inspite the acknowledgment of the importance of internationalization in higher education, there are still constraints and is-



sues in its implementation especially in developing countries. Their articles describe some of such issues and constraints in a provincial city educational system setting in the Philippines.

The papers of Kenneth Lane, Michael D. Richardson from the Southern Louisiana University and that of Dr. Gerald A Lehr of the United States Department of Education emphasized the varied vital roles of universities as engines of innovation, technological sharing and producers of highly skilled workforce. Thus, these agencies need to actively collaborate and develop effective networks of technological transfers, knowledge sharing and production of skilled workforce for sustainable development of the region and perhaps the world, especially of the developing nations.

Dr. Masayev Akif Ferhad, the rector of the Azerbaijan University focused on the growing interest in higher education including the post-Soviet countries where comparatively closed and where societal collaboration between universities and labor markets are still limited. The paper provided suggested mechanisms by which better relations and cooperation between higher education, business and societal development could be established even in the post-Soviet countries like Azerbaijan.

Dr. S. Eskandari of the Islamic University of Teheran emphasized the role of universities in developing the intellectual capabilities of students and preparing them to meet the societal demands not only nationally but globally by providing training at international standards. He however emphasized the importance of maximized localization as a prerequisite for equally independent leadership in international scene and the globalized society.



The last paper of Dr. Licio Yuemen, Dr. Wang Guo An and Han Yuzhu of the Zhejiang Gongshang University at Hongzhou, China emphasized the dramatic increase in gross enrollment rate of higher education in Mainland China since 1999. The popularization of higher education while producing great steps in the democratization of higher education by greater number of students having access to quality higher education, it also posed great management challenges for local universities, the establishment of adequate financial support system specially for poor students, strengthening of scientific research and provision of social services. Though popularization also included greater admission of foreign students and greater opportunity for Chinese students to obtain scholarships abroad or study on their own in foreign universities, there are still management and administrative concerns that must be attended to prior to having a more efficient and effective internationalization of tertiary Chinese education.

Ruben C.Umaly, Ph.D.  
Editor, Academe

ACADEME 2010

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## Constraints and Issues of Internationalization

Dr. Ricardo P. Pama, University of the Cordilleras  
and Dr. Lourdes T. Nepomuceno,  
Angeles University Foundation

### Introduction:

The growing demand for higher education, the advent of information and communication technologies (ICTs), the shortage of public funding and the trend towards the treatment of education as a commodity or as a service to be regulated internationally by trade agreements, are perceived as complex issues contributing to major reforms of the higher education (HE) systems all over the world.

According to Escrigas and Lobera, (2009), the factors that are influencing the current features of higher education in the world are as follows:

- Increase in student demand

Worldwide enrolment in higher education has increased from 92 million in 1999 to 143.9 million in 2006. By now it is probably 200 million.

For instance, China has witnessed unparalleled higher education expansion in the past decade. The gross-enrollment rate jumped from 9.8 percent in 1998 to 23.3 percent in 2008. At the end of 2008, 29.07 million students were enrolled in tertiary institutions, making China's higher education system the largest in the world (Jian Liu and Xiaoyan Wang, 2010).

- Reduction in the role of the state and the emergence of the market

This has caused intense institutional competition for resources from the state and from the market. Thus, universities have been forced to look for newer markets.

- Emergence of private education and diversification of providers

In the face of growing demand, overcrowded higher education institutions could not expand further and new institutions mushroomed, many of them private.

With a few exceptions, new for-profit private providers have neither the com-



mitment nor the ability to perform research and other service roles. They can seldom build adequate facilities.

- Diversification of funding sources

Higher education institutions are forced to diversify their sources of income such as venturing into commercial activities in cooperation with private entrepreneurs.

- Internationalization and cross-border education

Due to lack of places in the home institution, students especially those who can afford have moved to other countries for their education. Constraints and issues of internationalization and cross-border education will be discussed in this paper.

- Accreditation for quality assurance and rankings

Given the diversity and complexity of higher education systems, academic fraud and corrupt practices have also arisen. Accreditation is key to tackling such corrupt practices.

## **Major Constraints and Issues:**

As pointed out earlier, the demand for higher education and the emergence of information and communication technologies have given rise to several key factors that are affecting the whole higher education system all over the world. One such factor is “Internationalization and cross-border Education” as cited earlier.

Internationalization appears to be the focal point in today’s higher education landscape. According to Altbach, (2007, 2010) in the first decade of the 21st century, internationalization may be closer to a buzzword than a deep-seated reality for most colleges and universities. In other words, internationalization is generally acknowledged as an essential fraction of any top university. Knight (2006, 2007) also pointed out that as people progress into the 21st century, the international dimension is a key factor shaping and challenging the higher education sector in countries all over the world. The need for an appropriate response to these demands has generated calls for a strategic approach to the management of international initiatives.

Over the centuries, higher education has given ample proof of its viability to cause change and progress in society. As reiterated by WTO, 1998; World



Bank, 2002; UNESCO, 2003c, the governance of higher education has undergone rapid global changes as governments have began a re-regulatory drive in response to global demands. With the ever-increasing interconnections among all countries in the world, there is a real need for Higher Education Institutions (HEIs) to integrate global perspectives to remain pillars of academic excellence. Some of the ways and means to take into account and thrive in a borderless educational world: in-service training faculty programs compatible with international needs; continuing professional development in lifelong learning; larger range of education service providers; innovations in distance education delivery and cross-border provisions of higher education; wide range of certifications and qualifications being offered; various levels and categories of quality assurance and accreditation; increased levels in private investment in higher education; various kinds of administrative and academic joint ventures among different types of providers; changing forms and purposes of strategic agreements; considerable increase of brain-drain and brain-gain physically and virtually; new forms of intra- and inter-regional higher education programs, especially mobility initiatives; more international competitions; different approaches to branding and market positioning of higher education, and shift from development aid to partnership exchange to commercial trade in education (Nepomuceno, 2008).

HEIs here and abroad have been repositioning to take advantage of the global student market, whether by adjusting quotas on foreign students or encouraging overseas institutions to set up a joint/dual degree program. The buzzwords “international education hub” has permeated the mission statements of HEIs hoping to attract foreign students on our shores. Evidently, foreign students offer a welcome boost for university coffers. Additionally, they represent another stream of talented graduates who may join the local workforce and continue contributing to the economy of their host country after they completed the degree, (Gooch, 2009). According to a UNESCO report released in July 2007, more than 2.8 million students were enrolled in higher education institutions outside their country of origin, a 53 percent increase since 1999.

### **The Implication of the General Agreement on Trade in Services (GATS) in Higher Education**

In today’s world, higher education has turn out to be a massive service industry, evoking an image of a business enterprise. To encourage international trade in education, the World Trade Organization (WTO) plans to provide a regulatory framework as part of negotiating the General Agreement on Trade



in Services (GATS). GATS remains under negotiation and individual countries may agree to some or all of its provisions. When WTO member countries implement the agreement, GATS will focus on facilitating academic mobility. As of January 2006, a total of 36 countries agreed to liberalize access to the higher education sub sectors (Knight, 2006). Educational services are divided into five sub-sectors: primary education; secondary education; higher education; adult education; and other educational services.

Under the GATS framework, trade in education takes place according to four modes: Mode 1 - Cross-border supply (programme mobility) focuses on the service crossing the border, which does not require students to physically move such as distance education and e-learning; Mode 2 - Consumption Abroad (student mobility) refers to the students taking all or part of their education in another country; Mode 3 - Commercial Presence (institution mobility) involves the university establishing a branch campuses or franchising arrangements; Mode 4 - Presence of Natural Persons (academic mobility) means professors, lecturers or researchers traveling to another country on a temporary basis to provide a service.

Table 1 illustrates the four modes in education and the generic constraints from the exporter country’s point of view in greater detail.

**Table 1: The WTO has devised four ways to implement the GATS in education:**

Modes	In Education	Generic Constraints (exporter country’s point of view)
Cross-border supply	Distance delivery or e-education; virtual universities -Primary and secondary education have been fully committed without any limitations; the extent of market access being given in those sectors, e.g. whether there are any restrictions on foreign ownership, etc. - The corresponding share for “higher education” and “adult education” is higher; all commitments are without limitations	<ul style="list-style-type: none"> <li>• Objectionable restrictions on electronic transmission of course materials</li> <li>• Suppliers of the services are sometimes questionable</li> <li>• Lack of opportunity to qualify as degree granting institution</li> <li>• Requirement to use local partners, at the same time a barrier against entering into and exiting from joint ventures with local or non-local on a voluntary basis</li> <li>• Exorbitant fees and taxes imposed on licensing or royalty payments</li> <li>• Restrictions on use and import of educational materials</li> <li>• Domestic laws and regulations are administered in an unfair manner</li> </ul>



Modes	In Education	Generic Constraints (exporter country's point of view)
Con- sumption Abroad	Study abroad program, student exchange - Very rare in all education sub-sectors; - Countries saw less need, or scope, for restricting trade under this than any other modality, given that the consumption of the service takes place outside their natural boundaries	<ul style="list-style-type: none"> <li>• Measures that restrict the entry and temporary stay of students, such as visa requirements and costs, foreign currency and exchange controls</li> <li>• Recognition of prior qualifications from other countries</li> <li>• Quotas on numbers of international students in total and at a particular institution</li> <li>• Restrictions on employment while studying</li> <li>• Recognition of new qualification by other countries</li> </ul>
Commercial presence	Branch or satellite campus; franchises; twinning arrangements, off-shore campus course or program -Primary, secondary and higher education have “no limitations.”	<ul style="list-style-type: none"> <li>• Inability to gain the required licenses to grant a qualification</li> <li>• Subsidies provided solely to local institutions</li> <li>• Nationality requirements</li> <li>• Restrictions on recruitment of foreign teachers</li> <li>• Government monopolies</li> <li>• Difficulty in obtaining authorization to establish facilities</li> <li>• Prohibition of higher education, adult education and training services offered by foreign entities</li> <li>• Lack of transparency of government regulatory, policy and funding frameworks</li> <li>• Rules on twinning arrangements which restrict the development of institution to institution arrangements.</li> </ul>
Presence of natural persons	Faculty exchange, visiting professor, guest lecturer - Almost every country has “unbound” commitments across all education sub-sectors, implying that no commitments in those sectors have been taken	<ul style="list-style-type: none"> <li>• Measures that restrict the entry and temporary stay and work for the service suppliers, such as immigration barriers, nationality or residence requirements, quotas on number of temporary staff, employment rules</li> <li>• Recognition of credentials</li> <li>• Minimum requirements for local hiring being disproportionately high</li> <li>• Repatriation of earnings is subject to excessively costly fees or taxes for currency conversion</li> <li>• Restrictions on the use/import of educational materials.</li> </ul>



Sources:

Toni Verger and Susan Robertson, "GATS Basics: Key Rules and Concepts." *Global Higher Ed.* 19 April 2008. Accessed on 5 May 2010 from <http://global-highered.wordpress.com/2008/04/19/gats-basics-key-rules-and-concepts/>.

[http://www.aic.lv/rec/Eng/new\\_d\\_en/gats/GATS\\_ovw.html](http://www.aic.lv/rec/Eng/new_d_en/gats/GATS_ovw.html).  
Accessed on 5 May 2010.

In the Philippines, the government has declared unwavering support for the GATS, although it has not yet fully subjected itself to the GATS. As pointed out by Verger, et al (2008) certain provisions, structural adjustments and directions are in the works to deal with its eventual implementation. Educators, with global outlook, sees international higher education as a commodity to be traded freely and on as a private good. However, critics strongly opposed commodification of education for profit in the event that the GATS are fully implemented.

### **Constraints and Issues Faced by HEIs in the Philippines.**

The Philippine higher education system is a mixed public-private system with the private sector constituting 88% of the total 1,758 higher education institutions (HEIs) throughout the country and accounting for 62.5% of the more than 2.6 million enrolments in higher education. The public HEIs comprise 109 state universities and colleges (SUCs) with 354 satellite campuses, 81 local colleges and universities (LCUs) and 16 special government schools. The private HEIs consist of 321 sectarian and 1,231 non-sectarian institutions. Given the diversity and uneven development of the HEIs, the Commission on Higher Education (CHED), the government agency in charge of managing the system, is hard pressed to devise appropriate strategies to address the different needs of the different types of HEIs at different levels of development, at the same time make them move towards common goals of achieving excellence and global comparability.

For the public sector, a major concern is how to sustain the increasing number of students and institutions, without corresponding increase in the government allocation for higher education, or how to arrest (even reverse) the proliferation of SUC satellites and LCUs which has been spreading government subsidy too thinly, without prejudicing access and equity goals. One strategy being considered is amalgamation of public HEIs into regional or provincial university systems, pooling resources at the same time allowing for differ-



entiation or specialization among the constituent campuses. Concomitant strategies would be to rationalize program offerings of public HEIs to minimize duplication and prevent crowding out of private sector provision, and to encourage income generating projects/measures.

For the private sector, CHED's concern is how to assist/influence the vast majority of private HEIs to strive for excellence in face of their declining financial base as more and more students migrate to the public colleges and universities and many of their clients sustain dents in their capacity to pay. Apart from rationalization of SUC's programs, another strategy proposed is the direct channeling of government subsidy to students in the form of scholarships and financial assistance, to enable them to enroll in the good private institutions and priority programs. Also deemed effective is progressive deregulation, the grant of autonomous or deregulated status to private HEIs that have consistently shown commitment to academic excellence and exemplary performance in the provision of education, research and extension. As of this year, 44 private HEIs have been granted autonomous status. These include three private universities that have made it to the top 600 in the Times Higher - QS World University Rankings.

Specific issues faced by HEI's in implementing internationalization or cross-border education in the Philippines are the following:

1. Lack of good facilities such as laboratories and housing for foreign students.
2. Lack of well-qualified faculty who can implement international programs especially joint research and joint degree offerings.
3. Very tedious process involved in the issuance of visas to foreign students and visiting faculty.
4. The Philippines is viewed as being an unsafe place for foreigners.
5. Most HEIs have very bureaucratic procedures which discourage faculty members in promoting international programs.
6. The infrastructure in the country is not well developed and travelling from one part of the country to another is problematic.
7. Lack of mutual recognition of degrees.



On the other hand, the Philippine HEIs have inherent advantages also, which are very favorable in promoting internationalization and cross-border education:

1. English is the medium of instruction in schools, colleges and universities. People everywhere can speak and understand English.
2. The Filipinos as a people are very friendly and hospitable especially to foreigners.
3. The country has 44 autonomous and 14 deregulated institutions and they have the freedom to enter into agreements with foreign counterparts for collaborative programs.
4. Fees and cost of living are comparatively low compared with other countries in the region.
5. Affordable airfares and flights to the Philippines and other neighboring countries.

### **Conclusion:**

As we begin the second decade of the 21st century, it is clear that the wealth of nations and the well-being of mankind depend on ideas and knowledge. It is apparent that knowledge is going to be critical in the process of attaining economic growth and social progress. Institutions of higher learning will play a very vital role in the attainment of this goal.

However, internationalization and cross-border education have many constraints brought about by the emergence of market opportunities which turned higher education into a commodity. This should not be allowed and instead higher education institutions should shape the agenda for the direction of higher education so as to capture the opportunities provided by internationalization and avoid the dangers unleashed by market forces.



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## The Paradox of Productivity Measurement in Higher Education

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Productivity and accountability have been intertwined issues for educators for as long as colleges and universities have existed (Brooks, 2005). Ancient records indicate that government officials were concerned about the productivity of farmers who clearly understood that farm output was dependent upon labor input (Hoxby, 2004). Taylor's classic time and motion studies in the industrial age were undertaken to improve the output of the factory worker (Taylor, 1911). The relation between higher education and productivity has been the subject of renewed attention and research among educational researchers and practitioners (Amaral, Meek & Larsen, 2003). For the purposes of this paper, productivity may be defined as the extent to which institutions of higher education meet their stated goals and accountability with transparency of actionable output (Temponi, 2005).

In today's environment, the globalization of the 21st century fuels the current interest in accountability and productivity because the future is tied inextricably to education; this vision is blurred, however, as contending forces support either the Greco-Roman (the individual supports social imperatives) or the Enlightenment model that upholds the efficacy of the individual over the needs of the greater society (Amaral, Meek & Larsen, 2003).

\*The views expressed are those of Dr. Gerald A. Kehr and not the US Department of Education.

\*\*An earlier version of this paper was presented at the International Academy of Educational Leaders annual meeting in Vancouver, Canada, January 2009.

The Greco-Roman and the Enlightenment models beg answers to the same



questions: What makes a higher education organization productive: test-scores, number of graduates, or endowment dollars? Productivity measurements in higher education are very fluid, most often dependent upon the demand for information rather than the best available information (Love & Russon, 2004). There is considerable literature on productivity in higher education, where productivity is taken as the search for patterns of organization that produce the best student outcomes (recognizing that what is “best” is not a self-evident matter) (Cullen, Hassall & Broadbent, 2003). In management terminology, productivity implies a production function--a mathematical expression of the relationship between inputs and outputs in higher education (Baker & Richards, 2004).

As articulated by Drucker (1974), a strident supporter of the Greco-Roman view, the long-range purpose of accountability of higher education is to enhance social productivity. This position posits that productivity permits measurement across individuals, programs, colleges and institutions (Becket & Brookes, 2006). From this viewpoint, productivity is necessary to measure quantitatively the return on investment in higher education because education is about the utilization of human resources for the better good of the greater social order (Laugharne, 2002).

In practical productivity measures, an output represents results. In higher education organizations there often exists an incongruity between the expectations of outside agencies and the realities of educational institutions (Shavelson & Huang, 2003). Higher education institutions can temporarily survive without perfect efficiency; they usually die if they are ineffective (Teichler, 2006); or in system terms, the higher education organizations transmute into wholly differentiated entities (Luhmann, 1995). In both descriptions the end result is that efficiency typically implies a short-term response to productivity measurement, while effectiveness specifies a long-term reaction (Subotnik & Walberg, 2006).

While some educators may be guilty of “suboptimization,” most are encouraged and many are compelled to center on product not process (Rolle, 2004). Higher education has been characterized as a process-centered organization concerned with “how to educate” rather than with what students know when they leave the institution (Grant, Mergen & Widrick, 2002). The array of emerging viewpoints and corresponding research-dedicated learning theories attest to educators seeking systemic verification to support traceable accountability for what they do for students, not what normative-driven politicians



think they should do for students (Kogan & Hanney, 2000). In spite of theoretical evidence to the contrary, the currently accepted model of educational productivity becomes one of political posturing, not one of sound educational practice (Biggs, 2001).

Higher education institutions have been subjected to externally driven demands for productivity that have not proven to be effective (Avdjieva & Wilson, 2002). Irrespective of the ineffectiveness, numerous countries have advocated strong external productivity standards without understanding the low organizational capacity of the higher education institutions to deliver critical productivity (Altbach & Knight, 2007). The size of the current productivity measurement movement indicates that the survival of higher education may very well hinge on the ability of higher education leaders to demonstrate productivity in a chaotic marketplace (Johnes, 2006).

Some higher education researchers argue that productivity gives an educational institution the evidence it needs to make substantial changes to enhance productivity (Bourdieu, 1994; Brooks, 2005; Henkel, 2000; Oliveira, 2001). The key issue is determining how to measure productivity in service organizations like colleges and universities (Al-Turki & Duffuaa, 2003). Numerous higher education leaders have objected to productivity and accountability due to the quantitative nature of most systems that deny the qualitative portions of the education process. Quite often assessment of performance has an inward focus and fails to target adequately the external variables that also impact performance (Bogdan & Biklen, 1998). Although intended to serve as diagnostic/prescriptive tools, accountability instruments can become tools for the justification of punitive actions aimed at higher education institutions (Kogan & Hanney, 2000).

Some higher education institutions have structured, sophisticated approaches to determining performance, while others have a more casual, non-structured approach (Johnson, 2001). Research arguments have supported both approaches, leading back to either the Greco-Roman or Enlightenment models. However, both are plagued by the same critical questions: What to measure? Why it should be measured? Will the results from measurement really impact functional and/or organizational behavior? The answer may very well depend upon the leader's expertise and access to information, not just data (Klein, Kuh, Chun, Hamilton & Schavelson, 2005). Productivity measurement can have very beneficial results for the higher education leader to include the following:



- Improved communication throughout the organization (Bishop & Wobmann, 2004);
- Improved information for better decision making (Subotnik & Walberg, 2006); and
- Improved behavior toward meeting organizational goals (Chen, Yang & Shiau, 2006).

On the other side, progress in productivity measurement has been hindered by the following:

- No real universally-accepted definition of educational effectiveness (Guile, 2001);
- Lack of formal objectives, measures, or performance standards (Ginsburg & Berry, 2000);
- Inaccurate measures or tools for measurement (Klein, Kuh, Chun, Hamilton & Shavelson, 2005); and
- Varying levels of responsibility for productivity (Crissis, Konrad, & Schrum, 2003).

In their haste to become more accountable, higher education leaders may be advised not to lose sight of the capacity of the institution to deal with productivity issues (Popli, 2005). Change is difficult and often produces results that are not intended (Rogers, 1995). Organizational capacity to meet productivity demands must be examined in light of the demands on all higher education employees (Lawrence & McCollough, 2001). Consequently, higher education leaders need to understand productivity linkage to either the Greco-Roman or Enlightenment models (Luhmann, 1995), and know their organizational capacity from within one or the other precept and be able to clearly articulate the role productivity plays in their organization (Hoxby, 2004).

### **Key concepts**

Productivity measurement is here to stay, but it must be understood in relation to contextual reality of higher education and its stance on social agenda (Luhmann, 1995) and not just in the abstract thinking of theorists and the



normative-driven agenda of politicians (Cohen, Nelson & Walsh, 2002). To accomplish these goals, higher education leaders can rely on four key concepts:

**1. Mutuality:** Higher education is a mutual responsibility between leaders and policy makers. Both sides must work strategically to develop a balance in this relationship. Productivity in higher education must be based on high standards (Naughton, Suen, & Shavelson, 2003). Productivity based on minimum standards will not succeed. The purpose of productivity is to increase achievement and accountability within the fundamental goals of higher education: teaching, research, and service (Welsh & Dey, 2002). Competition for rankings and status based on student selectivity, faculty prestige, and similar measures will not insure performance or quality (Dill & Soo, 2005). Pursuing higher rankings on such measures has degraded cost-effectiveness and detracted attention from realistic goals (Henkel, 2000). There is a desperate need to secure rankings that are consistent, free of self-interest and methodologically coherent. Many methodological measures need to be addressed and the unintended consequences or rankings need to be accommodated (Dill & Soo, 2005). Higher education leaders and policy makers must address several issues that will determine the proposed improvement in higher education. Specifically, these concerns: (1) the link between perceived productivity and funding, (2) the anticipated stratification of higher education, and (3) the fact that most ranking systems are based upon perceived prestige (Baker & Richards, 2004). Also, the presence of professionalism in higher education can complicate productivity. Many higher education leaders and faculty members claim that only peers can judge conduct, performance and productivity; hence, the increased role of accreditation agencies (Dietz & Bozeman, 2005). Higher education leaders must balance external pressures because too much productivity creates dependent institutions subservient to society's whims (Fusarelli, 2001). Global higher education institutions have been subjected to externally driven demands for productivity that have not proven to be effective (Mazzarol, Soutar & Seng, 2003). Regardless of the ineffectiveness, politicians and policy makers have advocated strong external productivity without understanding the low organizational capacity of the educational institutions to deliver critical productivity (Odden, 1992). The size of the productivity movement indicates that the survival of higher education may very well hinge on the ability of educators to demonstrate productivity and accountability in a chaotic marketplace (Fusarelli, 2001).

**(2) Equality and equity:** Equality implies equal treatment of everyone and every program. Equity (vertical) refers to the unequal treatment of unequals



(Bogdan & Biklen, 1998). The long-range purpose of accountability is to enhance productivity. Productivity is necessary to quantitatively measure educational investment because education is about the utilization of human resources (David, 2007). Higher education programs and services should address equality, equity and diversity to maximize societal commitment to the organization (Cullen, Hassall & Broadbent, 2003).

**(3) Commitment:** Productivity is also a long process which requires sustainability if real change is to take place. To sustain change, higher education leaders should measure results rigorously and work for improvement (Brooks, 2005). Productivity gives a higher education institution the evidence it needs to make substantial changes to enhance productivity (Chen, Yang & Shiau, 2006). In examining productivity of higher education faculty, Fairweather, 2002 (1995) defines productivity as the ratio of outputs to inputs. In addition, Massy and Wilger (1995) argued that productivity was a different concept than workload and time allocation: “Workload . . . captures how their [the faculty] time is spent, while productivity is a measure of what is produced with that time” (pp. 45–46). Shavelson and Huang (2003) contended that accounting for quality was necessary in any definition of higher education faculty productivity. The implication for higher education leaders is that faculty perceive their productivity in terms of what they produce, not the relationship between what they produce and the costs associated with that production (Widrick, Mergen & Grant, 2002).

**(4) Flexibility:** Flexibility is needed to ensure effective responses to problems. Proponents of the new productivity movement contend that systematic assessment of performance on the basis of clearly identified standards will lead to improvement (Telford & Masson, 2005). With the information in hand, higher education leaders can set performance targets by focusing on three key questions. “How are we currently performing?” and “What do we want to reach for?” will be answered by matching institutional results against standards and stakeholder expectations. The third question, “How do we get there?” is answered by identifying strategies that are likely to move the institution in the desired direction (Srikanthan & Dalrymple, 2002).

### **Efficiency vs. Effectiveness**

Typically, efficiency measures are inwardly focused and effectiveness measures are more outwardly focused. For the most part, environmentally related changes impact the overall effectiveness of an organization, while



internally oriented changes have a more dominant impact on efficiency (Rolle, 2004). Both efficiency and effectiveness are critical to sustainable competitive performance. However, should greater attention be placed on efficiency measures, rather than effectiveness measures in higher education organizations (Shavelson & Huang, 2003)?

According to Kohn (2000), "It is easier to measure efficiency than effectiveness, easier to rate how well we're doing something than to ask whether what we're doing makes sense" (pp. 3-4). Drucker (1974) stated, "Efficiency is concerned with doing the right things. Effectiveness is doing things right" (p. 45).

In determining what should be measured, higher education leaders and policy makers have choices, but typically use only one: standardized data. Some researchers consider productivity to be the interaction of effectiveness and efficiency (Duyar, McNeal & Kara, 2006; Love & Russon, 2004; Oliveira, 2001). In this context, effectiveness could be seen as whether or not a previously established goal or standard was met (Odden, 1992). This relationship can then be defined as a discrepancy: the relationship between the established goal and the actual goal accomplishment (Bishop & Wobmann, 2004). Efficiency would then be defined as the use of resources for attaining the goal. By choosing a certain course of action, a previously established goal or standard can be met. As educational organizations become more sophisticated and complex, new and more intricately tailored means of measuring productivity must be devised and implemented (Srikanthan & Dalrymple, 2004).

In comparing efficiency and effectiveness, Drucker (1974) contends it is more important to do the right things (improve effectiveness) than to do things right (improve efficiency). Thus, if a higher education institution is doing the right things wrong (i.e., is effective but not efficient), it can outperform organizations that are doing the wrong things right (i.e., are efficient but not effective) (Brookes, 2005). Efficiency is defined as the ratio of outcome to inputs and describes the cost per activity to achieve a given outcome; for example, the cost of technology to supply every student in the university with a computer (Schweke, 2004). It can also be used to determine how the university did in reaching predetermined goals. The term effectiveness is defined as the level of outcomes (goals); for example, a graduation rate of 45%. Many higher education organizations exhibiting low levels of effectiveness are pressured to increase their workloads (Dietz & Bozeman, 2005). This does not mean that efficiency is unimportant in public agencies. Efficiency improvements



are important because they result in cost savings that directly contribute to effectiveness (Subotnik & Walberg, 2006).

Efficiency can measure the effectiveness with which the higher education institution uses its resources to accomplish its goals or objectives. The drive for efficiency has produced campaigns for cost cutting, re-engineering, outsourcing (privatization) services, reduction in service levels, and productivity measurements (Laugharne, 2002). Measuring the efficiency of faculty members by the number of students who pass a certain test submerges the stated objectives of education under an iceberg of dubious statistics (Tam, 2002). The productivity measures are not ends in themselves, but means to accomplishing the organization's objectives. Effort does not equal effectiveness. In the long run, where has the short-term efficiency turned into a major liability? Higher education leaders must balance efficiency with effectiveness, without which leaders may fail to satisfy their clients (Popli, 2005). There is no greater waste of resources than spending them efficiently on the wrong thing (Oliveira, 2001).

Efficiency is based on the important assumption that the goal of higher education is not simply to do things well (effectiveness), but also to do those things at some reasonable cost. Again, the goal is effectiveness, not efficiency, if the general public wants convenience (Popli, 2005). Efficiency requires that the educational leader analyze costs related to tasks, but not all educational tasks can be predicted accurately. However, using productivity measurements for specific tasks, the leader may be able to answer the question, what does it cost to transport 25 student athletes on a trip to play a basketball game? Leaders must be both efficient and effective, but are more likely to control efficiency, with little control over effectiveness. The choice between efficiency and effectiveness depends on the purpose of productivity measurement and, in many instances, on the availability of data (Milliken & Colohan, 2004). Efficiency and effectiveness must go together in productive educational organizations (Waite, Boone & McGhee, 2001). The authors argue that effectiveness comes from evaluating, rather than doing the same thing faster and faster. Efficiency is often determined by the relationship between input and output. But in higher education, there are no single outputs, no test scores, no number of graduates, and no other quantitative measures of linearity (Monk, Walberg & Wang, 2001).

## Productivity measures

Broadly, productivity measures can be classified as single factor productivity measures (relating a measure of output to a single measure of input) or multi-factor productivity measures (relating a measure of output to multiple inputs) (Lawrence & McCollough, 2001). Productivity is a measure of the efficiency and effectiveness of an organization in serving its customers (Popli, 2005). It provides a basis for assessing how specified resources (inputs) are managed to produce acceptable outputs. In its most elementary expression, productivity is the relationship between input and output. In the case of higher education, one important input is human capital, but always in terms of social imperatives of either the good of the individual to the group or the obverse (Rolle, 2004).

Productivity is expected to be higher in proportion to the intelligence, knowledge, ability and attitude with which that human capital is applied, i.e., performance. In higher education it should be noted that producing more by consuming more human capital does not result in higher productivity, but in higher labor costs (Srikanthan & Dalrymple, 2002).

The authors of this paper argue that productivity is often seen as a system for reporting accountability, but is often taken to be an end. Productivity requires higher education leaders to give careful attention to both equity and consistency; productivity should report attainment, but also improvement (Lee, 2007). The pressure for productivity can make higher education leaders almost compulsive (Naughton, Suen & Shavelson, 2003). Productivity for many educators is not a clearly defined concept, nor is the definition generally the same in all situations because most definitions of productivity are described in relationship, meaning productivity is defined in relation to something to give it value (Duyar, McNeal & Kara, 2006). Therefore, productivity is very fluid, not always the same because it can be defined in terms of either process or outcomes (Grant, Mergen & Widrick, 2002).

Porter (1998) defined productivity in terms of both value and efficiency; that productivity is both process (efficiency) and value (outcomes). However daunting the task, measurement is one of the most important and significant contributions that a higher educational leader can make to the organization (Naughton, Suen, & Schavelson, 2003). Productivity can help determine the success of any organization, particularly knowledge-intensive organizations like higher education. Traditional productivity measures are based on



measuring the outputs (i.e., products and services) produced compared to the inputs used in producing the outputs (Oliveira, 2001). However, such quantitative methods should be applied to knowledge work because of the qualitative nature of higher education. Therefore, there is a need for new productivity measurement tools and methods that knowledge-intensive organizations could use to determine their productivity (Srikanthan & Dalrymple, 2002). Led by postmodernists such as Bourdieu (1994), higher education leaders may be starting to speculate that bad measurement is worse than no measurement (Guile, 2001).

## **Global view**

Since every country has a different educational system, federal governments have tried repeatedly to influence education for the expressed purpose of holding higher education institutions accountable for performance and productivity (Altbach & Knight, 2007). In most accountability systems, rules and regulations are handed down from the state or federal level (Johnson, 2001). These rules and regulations have little to do with the outcomes of education; but rather, specify quantitative inputs such as: number of graduates, number of faculty and staff, efficient use of financial resources or other bureaucratic practices. Such inputs have little to do with the real world (reality) in higher education (Bishop & Wobmann, 2004; Johnson, 2001; Laugharne, 2002).

There has been a global rise in expectations about the responsibilities of higher education institutions in innovation and productivity (Henkel, 2000). Policymakers define higher education institutions as crucial not only for education but also for research and economic development (Schweke, 2004). The continuing global economic crisis is likely to exacerbate these expectations (Proenza, 2010).

Measuring quality and productivity will continue to be a high priority for higher education leaders throughout the world (Brown, 2008). During the last decade productivity schemes for higher education have been implemented world-wide (Venkatraman, 2007). The trend is toward standards that can be referenced internationally (Mazzarol, Soutar & Seng, 2003). There is a need to move toward mutual productivity measures to provide international validity (Klein, Kuh, Chun, Hamilton & Schavelson, 2005). The growing international mobility of students is driving productivity models as a way to assess and evaluate different educational outcomes (Tam, 2002).



## Conclusions

Despite more than a decade of formalizing productivity programs, many elements of measuring and monitoring quality remain problematic. The idea of exactly where quality resides in higher education remains somewhat elusive. The “commercialization” of higher education has placed considerable strain on higher education leaders to measure the outcomes or productivity of the institution. The debate concerning the primary outcomes of higher education will continue in institutions around the world.

As higher education institutions and systems have become larger and more central to society and individuals, there is a growing need for professional management and leadership. Academic institutions and systems are beginning to collect data about themselves for use in policymaking and improvement. There is a growing need for complete and accurate regional and international data for analysis as well. The higher education enterprise is simply too large, complex, and central to be managed without data and professionalism.



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ACADEME 2010

Journal of Leadership and Management in Higher Education

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# Interrelations of Higher Education, Businesses and Society

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## Abstract

The research paper focuses on the analyses of the growing interest in the higher education by compared different regions of the world and post-Soviet countries including Azerbaijan. The analyses show that higher educational environment in post-Soviet countries is still comparatively closed and mutual relations between education and labor market is limited. This situation requires the establishment of education, businesses and society according to the practice of the well-developed countries in the post-soviet countries including Azerbaijan. The research paper shows the ways and mechanisms of establishment of these relations.

## Keywords

Higher education; business; society; relations; quality; assessment; ability; reform; post-Soviet countries; Azerbaijan.

Enthusiasm and need for education increase in the world. In 2004, the number of students in the higher educational establishments of the world nearly doubled from 68 million to 132 million students compared with 1991. But different regions of the world have different higher educational opportunities. 69 persons from every 100 persons in the age of higher education are able to get higher education in the Northern America and Western Europe. This ratio is 5 persons for the South of Africa and 10 persons for the Southern and Western Asia. This inequality in the educational opportunities affects negatively the development of regions and detains the formation of educational infrastructure. This delay results in the brain flow to the well-developed regions.

In 2007-2008 the number of students in the higher educational establishments of Azerbaijan reached 127 000 students from 91 000 students in 2000-2001. In 2000 the number of trained professionals per 1000 persons of population increased to 32 from 25.

There are three types of higher educational establishment (HEE) in Azerbaijan at the moment: university, academy, institution. Number of active



HEEs in Azerbaijan is 52 including 19 private HEEs. The number of students in HEEs is 136590 (under-graduate and graduate students). There are two types of higher education in public HEEs: free and payable. Those who successfully passed centralized state entrance exams get free education. The total number of population is 9 million. The university-population ratio is approximately 1/173077.

Some figures of Azerbaijan higher education compared with higher education of well-developed countries:

Country	Total number of HEEs	Including		Number of students in the country	Number of population per HEE	Average annual expenses per student	
		Public HEEs	Private HEEs			Public HEEs	Private HEEs
USA	2364	612	1752	18 million	125,1 thousand	Free education 7000\$	Payable 15000\$
Canada	100	100	-	1,5 million	328 thousand	Payable education	
Great Britain	89	86	3	639 thousand	679,1 thousand	Payable education	
France	87	82	5	2 million	697,2 thousand	Free education	
Finland		20	-	150 thousand	261,2 thousand	Free education	
Swiss	21	18	3	400 thousand	192,5 thousand	Free education	
Czech Republic	66	26	40	166 thousand	155,2 thousand	Free education	
Austria	28	23	5	210 thousand	292,3 thousand	Free education for citizens	
Japan	600	175	425	2,5 million	212,4 thousand	Free education	Free education
China	2508	1112	1396	23 million	520,9 thousand	Free education	Free education
Russia	1068	413	655	7 million	134,3 thousand	Free education	Payable education
Kazakhstan	180	43	137	700 thousand	84,4 thousand	Free education for those who successfully passed the entrance exams	Payable education
Azerbaijan	52	36	16 thousand	137 thousand	175 free and	Education is payable sponsored by government for those who successfully passed the entrance exams	Education and sponsored by government



The figures show that the student-population ratio of Azerbaijan is lower than world and member countries of Commonwealth of Independent States (CIS) in spite of recent growth. Some people pretend that number of universities is also low and this results in additional problems. But these pretensions receive different reactions. For example: many people note that number of universities in Kazakhstan was too much during the Soviet period and this caused additional problems. The main issue is the existence of higher educational opportunities and of course, the quality of education. Number of universities may be low, while the number of students in HEEs is optimal. This is not a problem. Therefore, if we organize all effectively 52 HEEs are enough for Azerbaijan.

The main reason of high number of students in the well-developed countries is not only the increasing enthusiasm of local population, but also foreign student flow. Countries like Azerbaijan are still considered donor countries in this problem. This means that the low development of modern educational infrastructure in the CIS member countries results in the student flow to foreign countries.

The researches show that the formation of educational infrastructures in world regions must be one of the leading tendencies of globalizing world education together with penetration of educational models, availability of higher education for all, development and promotion of advanced and effective educational programs and manuals.

Higher educational environment in post-Soviet countries is still comparatively closed and mutual relations between education and labor market is limited. This results in low number of graduating students who is able to find a job matching their specialty and their specialty nomenclature does not meet the requirements of businesses. That is why the businesses of CIS member countries begin to divide more money for prequalification of professionals. For example: at the moment Russian businesses provide approximately 20 trillion dollars for the prequalification of professionals.

Modern businesses are flexible and dynamic. Job seekers face new requirements. They must be trained according to the requirements of businesses, and be ready for prequalification, for activities and decision-making in imprecise situation. At the moment, the employers require the professionals to focus on "to be able", "ability", "to be ready" rather than simple "knowledge". The requirement is high-level professionals who are able to receive perfect



results with his professional skills and qualifications.

The researches show that there is a misbalance between the needs and requirements of employers for employees and the quality of training of professionals in HEEs. This situation is characteristic for countries with transit economy, including Azerbaijan.

Therefore, on May 22, 2009, Ilham Aliyev, President of Azerbaijan Republic confirmed "State Program on reforms in the higher educational system of Azerbaijan Republic in 2009-2013" in order to accelerate the integration of higher educational system of Azerbaijan Republic to European educational environment and to ensure the efficiency of this process, to set the content of higher education to meet the Bologna requirements, to meet the needs for high-qualified national professionals according to the development directions of national economy. The goals and duties set by this Program pave the way for the substantial quality changes in the development of higher educational system of Azerbaijan.

It is clear that, the State Program on reforms in higher educational system of Azerbaijan requires newer and more advanced form of joint activities of HEEs, businesses and society of Azerbaijan. Therefore, the article focuses on some aspects of collaborations of education, businesses and society in the field of personnel training.

The Program shows that this issue is one of the main directions of national development policy of the government. The main goal of the State Program indicates that reforms of education, especially higher education must be carried out in order to meet the requirements of economic and social development and information society on Azerbaijan.

In specific cases, the State Program describes the following development directions of personnel training:

- Adaptation of specialties in higher education to the European specialty classification and requirements of labor market;
- Development of a system for the accreditation and rating of universities and assessment of student knowledge;
- Establishment of efficient system for additional professional training;



- Certification of curriculums of Management, Economy and Law specialties;
- Foundation of strong business relations between HEEs and commercial organizations;
- More active participation of employers and other social partners in the educational field;
- Strengthening of academic research base of HEEs.

Many countries, including Russia implement analogical development programs and this process is not only the need of those countries, but also an urgent requirement of current economic development as a result of integration and globalization. "Delfi-2" program, implemented in Russia by the British Council with the technical assistance of European Union can be an example for this.

The practice shows that formation of groups of qualified professionals in each field by determining specialty training and modernization of education, open and distance learning, administrative personnel training and social collaboration directions as main aspects of activities is more efficient.

In this meaning, the administrative personnel training require the following:

- To develop more efficient collaborative relations between educational establishments training managers and cooperative customers to ensure the training of administrative personnel meeting the requirements of labor market;
- To implement and develop the means of strategic marketing in educational establishments;
- To improve internal relations and to create a mechanism for practice exchange and monitoring in the field of administrative personnel training in order to strengthen appropriate personnel training network and to regularly discuss the market requirements.

But, it is worth to note that, implementation of all the above-mentioned issues requires special preparation of educational establishments, commercial structures and the whole society.



The main factor here is to persuade the large, medium and small companies to focus their activities on the knowledge and to convince them that the way of existence in the complicated and competitive environment is through the collaboration with HEEs and scientific research organizations. It is worth to note that, competitiveness and qualified life in the knowledge-based economy depend on the efficient knowledge exchange between businesses and education. If this field is not efficient and comprehensive enough, the absence of high-qualified personnel meeting modern requirements results in the defeat of most of the basic fields of the economy in the competition and the loss of the experience of years. Professionals and experts with different levels of qualification are involved in the creation, penetration and exchange of knowledge because of the concentration of more knowledge in modern economic activities. Universities are the one with final decisions here. Universities also feel the need of the involvement in the establishment of businesses-society union.

But it is worth to consider that, as the activities of the most of the faculty members of the universities do not meet the current requirements of the businesses, they can not stimulate the development of the relations between businesses and HEEs and therefore in most cases create obstacles.

The existing differences between the missions and goals of the universities and businesses can sometimes limit the development of these relations. In most cases, universities want to issue the results of the scientific research works, but as this may lead to the reveal of commercial secrets of the companies it results in conflicts. Of course, these conflicts must be solved with the participation of the participants of the knowledge creation and penetration process.

As the relations with businesses improve the formation of new directions, foundation of new administrative structures and others result in the difficulties in the university management. In world practice the representatives of businesses participate in the management of universities in different forms to solve this problem. They even take place in the compiling of curriculums and give their suggestions and recommendations. The representatives of the universities also participate in the administration of business structures. Beside this, there is an experience of building relations of universities and business structures either directly, or via existing networks (industry-trade chamber, agencies, associations and so on). The second form of relations is becoming more common. As the marketing and monitoring of the quality of education is carried out more efficiently and detailed in the framework of



existing networks this way is preferred. Here the main factor is the protection of intellectual property. Theoretically all the educational and scientific-research activities are totally the objects of intellectual property and in spite of the commercial importance of the results of scientific research activities they can not be delivered to the potential users because of the existing patent mechanism and low level of issue opportunities. Therefore, as the joint research and commercial activities of the HEEs strengthen, the protection of the research results becomes more important. It is worth to note that, the absence of appropriate protection mechanism may weaken the relations with businesses and the intellectual property of the HEE becomes unprofitable.

In most countries, prequalification of professionals is one of the most perspective ways in the struggle with the global crisis. The amount of the money provided by the world countries for the struggle with global crisis is 14 trillion US dollars including the means of the international organizations. This money is divided between 4 ways of struggle with the crisis: support of real sector, support of bank sector, state guarantees, and support of population.

The support of the population is supposed to be carried out in the following directions which are directly connected with education:

- Prequalification of the unemployed (USA, Canada, Greece, Russia, Italy and others);
- To reach an agreement with businesses not to cut down of work places (Germany and so on);
- More investments on education (France, China and others).

It is clear that, the changes in the structure of the economy caused by the global crisis result in the changes of labor resources including the changes in their structure. This affects in its turn the distribution of labor resources.

One of the main duties of the educational system of the Republic is to ensure the participation of workers of labor process in the improvement of qualification level of these workers. The improvement of qualification level of the workers of official structures, especially state workers in Azerbaijan is organized by training centers and this type of training establishments within the structure of ministries, official bodies and commissions to meet the modern requirements.



But in private sector, there is not a system of specialized improvement and prequalification system of employees created by the higher educational system or employers to improve the level of qualification. Therefore, there is emptiness in this field. It is clear that the government is not able to finance the whole specialty training system. The joint activity of all interested parties is important for more flexible and appropriate reaction to the activities of government in this field.

It is worth to note that, the current relations of businesses and higher educational system does not meet the requirements of the current level of economic development. There is not a council of the Regents with participation of the high-level representatives of large businesses in the public or private universities. The round tables consisting of leading professionals in the field of personnel training are also not common for universities. These bodies are important administrative and organizing structures of the leading universities in the well-developed countries and they have big roles in the strengthening of material-technical base of the universities, in the provision of strategic development, in the improvement of curriculums.

The practice shows that, there must be a prequalification program organized by government to ensure the coordination of important actions to solve or at least to forecast these problems.

After the Azerbaijan Republic gained its independence the legislation and administration of the state allowed 2 parts of state educational policy: public educational system and private educational system. High-level and large-scaled reforms were carried out in this field as well as in other fields during the period after independence and there are positive results.

The analyses show that, the discrepancies in the world educational services market can be classified as following:

- Lack of flexible reaction to the requirements of businesses in the educational system;
- Technical teaching means of educational system are old;
- The adaptation of professional educational standards to the new requirements is low;



- The employers' interest in the suggested quality of graduate students is low.

It is not a secret that, Azerbaijan educational services market also have these discrepancies and in some cases they are more obvious.

The developed countries carry out regular reforms with different levels and scales in the educational system with large amounts of financial resources.

### **Main directions:**

- Foundation of efficient management structure of HEEs by increasing the transparency of the decisions;
- Implementation of student credit system for the improvement of independent monitoring system of educational quality.

“State Program on reforms in the higher educational system of Azerbaijan Republic in 2009-2013” confirmed on May 22, 2009, by Ilham Aliyev, President of Azerbaijan Republic is an important step in this field.

The main directions of collaboration of businesses and education are classified as following in this program:

- joint development of specialty educational standards;
- development of new and enlarged improvement program;
- organization of lectures seminars and master classes with the participation of leading professionals of the companies;
- Participation in the organization of career days;
- Participation in the financing of targeted personnel training analogical to the state order;
- Implementation of business structures their educational programs, organization of their learning centers and financial support to schools.

The attitudes of government and businesses to the education issue got closer in recent years and both sides consider that the education must ensure the high-level labor process. Organization of proper educational network must be



focused on during the process of implementation of State Program confirmed with this purpose.

The practice of well-developed countries show that, high prices of oil and gas in the global market results in the threat of low level of intensity of classification of economy, of delay in the formation of its areal and local structures, and stagnation in the development professional content of labor forces. This can not meet the requirements of innovation economy in any cases.

The scale of above-mentioned threat raises important questions in front of personnel training. The solution of these problems requires the complex attitude based on the joint activity of government, private sector and each individual of the society from the organizational and financing point of view.

The authority of certification of specialty training and creation of the system of institutional requirements through accreditation belongs to the government. But participation of business structures and units in this process is one of the most important requirements of modern development stage and “honest competition” environment.

One of the main points of social-economic development strategy is to forecast the need of economic system and its different fields to the personnel with different specialty groups. This will ensure the harmony of personnel training and prequalification system in the structure-building process of economy.

Joint activities and coordination of activities of the government and businesses is important in the field of prequalification and improvement of professional level, for the provision of necessary conditions in work places and appropriate educational structures.

Much to the regret, the participation of large businesses in the personnel training, their actions in the financing and their relations with educational system is not of the required level. First of all, we must note that, the normative-legislative base of mass attraction of businesses to the educational field is not created yet. Besides, the participation of professional unions and businesses in the assessment of quality of programs with different specialties implemented in higher education is at the lowest level. Nevertheless, there are irrefutable examples of the efficiency of such kind of relations in several well-developed countries.



Nevertheless, the participation of business structures in the improvement of educational programs, in the determination of specialties and learning directions, in the quality assessment of education is as important as their financial support for education.

It is worth to note that, the existing legislative, taxation and administrative norms confines the above-mentioned direction of activities.

Nevertheless, the companies provide 0,7-12% of their income to the education of their employees in the countries with taxation stimulus alone.

It is worth to consider that, the leading companies and business structures already feel the lack of high-qualified labor forces in the delay of economic development. It is also clear that, the incomes of the majority of the population is not sufficiently high to be able to pay for education because of the inequality in the distribution of incomes in the society. This leads to the low level of investment on human capital and decreases the economic development speed. The existing financial-credit system, bank sector and deposit mechanism of the country limits the chances of the population to get educational credit for the payment of learning from the organizational and normative-legislative viewpoint.

The history of collaborative relations of government and private sector is more than 10 years in most fields and they have very valuable experience. The establishment of such kind of collaboration in educational field is also important.

ACADEME 2010

Journal of Leadership and Management in Higher Education

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# **Global Perspectives Higher Education to Enhance Development of Industrial Cluster in Knowledge Economy**

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## **Abstract**

As the knowledge-based economy is emerging, university is seen as a central player in improving competitiveness of an economy through producing relevant graduates, providing social capital, and conducting meaningful research, innovation and technology transfer. This paper looks at features of universities and their relationship with government and industry to enhance industry-based cluster's development. Roles of university in supporting the growth of industrial clusters will be discussed through cases from different regions.

## **Introduction**

Since there are the enormous changes taking place in the globally integrated economy, it is very critical for firms to develop their competitiveness to be able to compete in the global arena. To achieve industrial competitiveness, industrial clusters, conceptualized through the work of Michael Porter, that include institutions, firms and other players have been formed to promote competitiveness of participating industries through interaction, cooperation and competition through strategy at the national, institutional and firm level.

In the knowledge-based economy, university, as a major institution in research, training and social capital, could assume the essential role to serve as a promoter and developer of such industrial cluster. The university's 'third mission' in enhancing economic and social development, along with teaching and research, is a growing phenomenon with academia taking a leading role in an increasingly knowledge-based society. This paper will thus examine the relationship among university-government-industry, while the role of universities in knowledge economy and development of industrial cluster will be discussed.



## University and Knowledge Economy (KE)

With globalization, connections across the world in economic, social and political aspects of life has been deepening, widening and speeding up. Economies across the world have been integrated. Different information technologies have been rapidly developed. And new post-Fordist work practices have been implemented (Waters, 1995; Castells, 1996; in Naidoo, 2003). These developments along with globalization features “the knowledge economy”, in which the capacity to compete in the world depends on the development of value-added products and services. It is obvious that the developments of value-added products and services rely on knowledge and innovation.

Knowledge-based economy was defined by the OECD as a system in which the production, usage and distribution of information and knowledge are essential to the process of economic growth (OECD, 1996). It is an economy in which knowledge is acquired, produced, disseminated and used effectively to enhance economic development. The successful transition to a knowledge economy often involves many elements such as long-term investment in education, development of innovation capability, modernization of information infrastructure and improvement of economic environment for market transitions. The World Bank has grouped these mentioned elements as the four pillars of the knowledge economy: 1) an economic incentive and institutional regime that provides good economic policies and institutions promoting efficient allocation of resources and incentives for the efficient creation, dissemination and use of knowledge, 2) an educated and skilled workforce continuously updating and applying skills to create and use knowledge, 3) an effective innovation system of firms, research centers, universities, consultants and other organizations encouraging creation, application and assimilation of new knowledge to local needs, and 4) a modern and adequate information infrastructure to facilitate the communication, dissemination and processing of information and knowledge (Chen and Dahlman, 2004)

The KE framework thus asserts that investment and interaction among these pillars are essential for the generation, adoption, application and use of knowledge in economic production to add value and increases probability of economic success in this competitive and globalized world economy. With the importance of knowledge and its features in the emerging economy, universities play central role in enhancing economic growth through the four pillars, especially educating workforce and enhancing effective innovation system.



A survey in *The Economist* said “the university is not just as 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 center of the knowledge economy” (David, 1997). Rajani Naidoo (2003) and Carnoy (1994) argued that higher education plays vital roles in the knowledge-economy by the production, dissemination and transfer of economically productive knowledge, innovation and technology.

Among policy makers, academia and public-at-large, roles of universities have been discussed as they have been dynamic to serve the needs of place and time. Most universities, especially those receiving either funds or supports from government are believed and expected to provide some sorts of public goods. There would be no need for public support if the outputs of a university are privately owned (Cowan, 2005).

With emphasis on economic growth since the mid twentieth century in which industrial and scientific revolutions played important roles in society, the priority of university and education has been shift to the contributor to knowledge, economy and innovation, as many argue that knowledge and skill become a key factor of production. As industrial clusters were emerged as a mean to improve competitiveness of industry in global and knowledge economy, it is worthwhile to investigate the roles of industrial clustering and roles of universities in development of industrial clusters.

### **Cluster and Competitiveness**

Michael Porter (1998) defines cluster as “concentrations of interconnected companies and institutions in a particular field...represent a kind of new spatial organizational form in between arm’s length markets on the one hand and hierarchies, or vertical integration, on the other. A cluster, then, is a new way of organizing the value-chain... A cluster of independent and informally linked companies and institutions represents a robust organizational form that offers advantages in efficiency, effectiveness, and flexibility.” (Porter, 1998, p.78-79). Meanwhile, the Department of Trade and Industry (DTI), U.K. (1998, p. 22) defines clusters as “a concentration of competing, collaborating and interdependent companies and institutions which are connected by a system of market and non-market links”. Scottish Enterprise defines clusters as “customers, suppliers, competitors and other supporting institutions such as universities, colleges, research bodies, financial institutions and the utilities” (Scottish Enterprise, 1998).



The cluster framework provides tools for an understanding of regional development processes. Clusters generally lead to increased levels of productivity, growth and employment (Porter, 1990; Feldman, 2000; Steiner, 1998; In Wonglimpiyarat, 2005). Clusters are often viewed as a process for promoting national, regional and local economic competitiveness / development (Brown, 2000).

Saxenian's work (1994) focuses on the concept of regional advantage to promote regional / cluster networks for developing network-based industrial system. The policies on cluster facilitate innovation and support multi-disciplinary research networks among industries and academics through information and knowledge exchange / transfer. Clusters are also a practical means of linking research to marketable innovations (Wonglimpiyarat, 2005).

In addition, Saxenian (1994) asserts the importance of "knowledge externalities" on the economics of regional clusters. The emphasis on knowledge reflects the declining relative importance of material input in various manufacturing industries, the increasing roles of service industries, and their increasing nature of having similar costs everywhere.

In order to explain the continued essence of "localized knowledge spillovers" (Jaffe et al., 1993, Audretsch and Feldman, 1996), most literatures and works invoke the concept of "tacit knowledge". Audretsch (1998) puts it, "The propensity for innovative activity to cluster spatially will be the greatest in industries where tacit knowledge plays an important role... it is tacit knowledge, as opposed to information, which can only be transmitted informally, and typically demands direct and repeated contacts" (Audretsch, 1998, p.23). Tacit knowledge cannot be expressed by words and is highly contextual, unarticulated. It can be transferred only through experiences, face to face interaction or through individuals' physical movement (Cowan et al., 2000; Hakanson, 2003). Tacit knowledge is obtained through local networks that develop "localized knowledge" delivering "codified knowledge" (knowledge in writing or other code and does not require personal contact for transmitting) and "tacit knowledge" (as Polanyi, 1996, puts "we can know more than we can tell-Polanyi, 1966, p.4).

In short, firms and actors within an industrial cluster could be benefited greatly through being belonged to the related or complementary epistemic communities existed around the specific professional practices' exercise. Respected communities share both the explicit and the tacit elements of



knowledge informing their practices. Proximity, with shared codes, tools, theories and understandings, facilitates the exchange and transfer of knowledge, ideas, practices and innovation (Hakanson, 2003).

## **Higher Education and Regional Cluster Development**

Due to the consensuses that the industrial economies have been becoming more knowledge-oriented, there are controversies over the roles universities are expected to play. With the view of universities as “knowledge factory”, many policy makers view universities as reservoirs of potentially commercializable knowledge waiting to be utilized and applied by firms. They expect that this knowledge is transferred to enhance innovation within the firms, to increase the firms’ productivity, to stimulate the emergence of regional industrial clusters, and contribute to national economic growth. However, the task of transferring knowledge from universities to industries is rather more sophisticated than the perspective assumes (Wolfe, 2005).

As I explained in the earlier section on role of universities in knowledge economy, universities fulfill at least two critical roles in the knowledge economy: the performance of research and the training of highly qualified human capital. They serve as primary source of knowledge workers and knowledge itself which have become the key factors of production in the knowledge-based economy. With the notion and practices of industrial clusters, universities could assume vital roles in regional industrial clusters consisting of firms and actors that benefit from belonging in complementary epistemic communities of the specific professional practices’ exercise. Explicit and tacit elements of knowledge or research informing practices are to be shared while proximity of universities and industries (with shared codes, tools, theories and understandings) facilitates the exchange and transfer of knowledge, ideas, practices and innovation, while universities remain the major actor in producing and training highly qualified knowledge workers to serve the needs of industries. In some regions such as in Silicon Valley (CA, USA) and Cambridge (UK), universities (eg: Stanford University in Silicon Valley and Cambridge University in Cambridge’s technological cluster, UK) even play critical roles in providing regional social capital, promoting clusters / industries and attracting firms to join the regional clusters.

## **Research, Innovation and Knowledge Transfer**

The view of social contract for science supported by postwar science policy in the US (reported by the U.S. National Science Foundation) was the “linear



model” of innovation which defined the relationship between basic research and applied forms of technology development as in a linear fashion, involving sequences of stages leading to product development. The final stage in the linear model involves systematic adoption of research findings into useful application. In an ideal linear model, the innovation process begins with basic research conducted without thought of potential application and discovery. These basic research findings rather open up the potential for applications that are pursued (usually by firms) through applied research, development, design, production and marketing. The later stages in the model’s sequence lead to commercialization of the resulting products and processes (Brooks, 1996; Stokes, 1997; Wolfe, 2005).

With the challenges of social contract for science supported by postwar science policy in the US and the linear model of innovation defining relationship between basic science and technological development, universities have come under pressure in the past two decade to expand their dominant role in conducting basic research and to supplement with more activities related to applied research, more frequently based on partnerships between university and industry. There are three trends characterizing the change on the university system: 1) the linking of funding from government for academic research and economic policy; 2) the development of longer term relationships between firms and academic researchers; and 3) the increasing direct participation of universities in commercializing research (Etkowitz and Webster, 1998). Thus, universities are now expected to generate more applied research that are relevant to industry, to diffuse knowledge, and to supply industry the technical support (Wolfe, 2005).

With university-industry partnerships, knowledge and technological flows are to be assumed. Conventional perspective of knowledge flows usually treats knowledge as a universally available commodity (virtually as a free public good) and knowledge transfer as a commercial and legal transaction between defined agents. This view rather simplifies the complexity of scientific knowledge and knowledge transfer processes to enhance firms to absorb and employ the knowledge (Wolfe, 2005). There are evidences and studies suggesting that successful knowledge transfer depends on the type of knowledge involved and how it is exploited.

### **Proximity Effect and Knowledge Transfer**

As the prior analysis argued the fact that knowledge transfer between universities and other players are highly personalized and often highly localized,



proximity to the source of research and training is rather important in technological, knowledge and skill transferred between university and industry, and across developers and users. The most frequently cited explanation for the essence of proximity is the need to obtain access to tacit knowledge (or not yet codified knowledge). In contrast, the role of proximity is less important when useful knowledge is available in codified forms that can be transferred and accessed across distances (Wolfe). Proximity may be even more critical for the transfer of new research in science where personal access to those is essential for the effective transfer of its insights (Feldman, 2000; Adams, 2001, Wolfe, 2005). Feldman and Florida (1994) indicated that the process of innovation highly depends on the technological infrastructure of an area, consisting of both university and industrial R&D. Jaffe et al (1993) used patent citation to analyze the effect of academic research and found that knowledge flows from universities to firms are highly localized at the state and regional level.

As I already explained in the earlier section, firms in an industrial cluster usually share mutual benefit through being belonged to the related or complementary epistemic communities existed around the specific professional practices' exercise. The knowledge and information built up in the cluster can serve an advantage of participating firms if the level of trust is sufficient to generate an easy and mutual exchange of both tacit and explicit (or codified) knowledge. Membership within the cluster allow firms to better view technology trends, enhancing them to capture new market opportunities for product or process development through needs of potential buyers (demand side) and capabilities of new technology available (supply side). In addition, the existence of multiple rivals in the cluster competing for similar opportunities and capacities pressures firm to excel in the innovative process. According to Porter (1998), potential cooperation is however reinforced in these internal competitive pressures.

### **High Skill: A Source of Competitiveness**

There are a number of recent studies indicating the essence of the finding and retaining of talent and highly qualified workforce in the development of clusters and regional economies. Areas with large pool of highly qualified and talented personnel absolutely reduce the firms' cost of search, recruitment and relocation of talent. On the other way, clusters are attractive for talent to be retained because they guarantee successive job opportunities without relocation. In Richard Florida's interviews (2002), many executives confirmed that they "go where the highly skilled people are". Highly educated and talented people usually go after the places where the most interesting works in the



fields is being done (Florida, 2002). Thus, universities that train high-skilled workers and conduct influential research often attract both firms and talented people, which are critical factors for clusters and regional development, to the involved clusters. With partnership between universities and firms, exchange of knowledge and capabilities enhances competitive advantages of both firms and universities within the respective clusters. We could now view universities as a magnet and enhancer of different players to the formation of clusters and regional development.

Since the development of human capital theory in the 1960s, human capital theorists rejected the notion that labor could be treated as homogeneous category as in classical political economy. High skills, knowledge and know-how of workers have been proved that they have direct impact on productivity and economic growth. Then, education, training and other preparations for work are viewed as investment, rather than consumption. To develop the society of high skills enhancing capacity of industrial clusters, Phillip Brown, Andy Green and Hugh Lauder (2001) suggest the creation of a number of complementary conditions, namely the “seven C’s of high skills”. The seven C’s of high skills include 1) Consensus referring to the extent to which the major players agree to a commitment to upgrade the skills of the workforce, 2) Competitive Capacity referring to the potential for productive innovation and change, 3) Capability referring to the dominant model of human capacity that informs the way people think about their abilities and those of others, 4) Coordination referring to the coordination of the supply and demand for labour, 5) Circulation emphasizing attention on the way nations, regions, and industrial clusters diffuse skills upgrading beyond companies, R&D institutes, research centers and universities, 6) Cooperation referring a feature of all forms of economic cooperation of organizations on a large scale, and 7) Closure addressing social inclusion and exclusion in education, training, and the labor market (Brown, Green and Lauder, 2001). As a central player in providing skills and knowledge of the regions, university needs to develop capacity and cooperate with other players to attain the complementary conditions for high skill development.

### **University as Social Capital Provider in Collaborative Network**

Many clusters enjoy the access to useful knowledge and research infrastructure that are necessary for the development of innovation, but they differ in their capacity to mobilize these valuable assets to pursue their developments. Henton, Melville and Walesh (1997) argue that social capital is an important



element to determine the success of regional clusters. Social capital can be created through the development of collaborative networks among various elements, institutions and communities.

Competitive and successful clusters are established through network and collaboration of both formal and informal organizations that facilitate the information and knowledge exchange, and enhance coordination and cooperation. They improve competitiveness and create social capital within regional clusters by building relationship and trust, accommodating collective actions and collective institutions that benefit members of clusters. Thus, a key factor for the clusters' success is the mechanism to engage key players of the cluster to collaborate and develop competitiveness (Wolfe).

Benefits of network are often referred to in the literatures (Hamalainen and Schienstock, 2000; Akkermans, 2001). First, networks are likely to reduce transaction costs of firms due to information exchange among firms and benefits from shared language and communication channels. Relevant information about partners and agents are shared while networks reduce uncertainty and discourage opportunistic behaviors. Second, networks facilitate the access to strategic knowledge and information of concerning technologies, markets, products, materials and processes. Third, networks may direct to rationalization of production because networks are as a structural element of the supply chain, obtaining advantages from economies of scale, variety in production, competency range provided by participating players that exceeds the capacity of an individual player (Alves, Marques and Saur, 2004). In addition, Morgan (1997) mentioned that inter-firm networks establish one of the most efficient learning mechanisms.

Even though universities are viewed as a source of scientific ideas and workforce training, many research universities also play an important role in cluster development as leaders of the local community and attractors of talents and firms. However, firms and players around the research institutions cannot simply rely upon the presence of successful university as the economic driving force providing innovation in the region. They must exhibit both 1) the capacity to absorb and utilize the knowledge and the skilled workforce produced by the university (or so called "regional absorptive capacity") and 2) the social cohesion to develop an economic community around their research infrastructure. With this perspective, the university also greatly contributes to the developmental process of firms by providing talent or high skilled workforce for firms and different players to increase their absorptive capacity and



capacity to utilize existing research infrastructure for economic purposes.

In short, universities play vital roles in many regional economic and cluster development as provider of innovation, technological transfer mechanism, highly skilled workforce and social capital. To be a competitive cluster, firms, universities and government must develop their capacity to foster innovation and utilize skilled workforce efficiently. In addition, university and other players within cluster must actively collaborate and develop network to enhance technological transfer, knowledge sharing, skilled workforce production, and to attract firms and talents.

### *Universities and Emergences of Regional Clusters*

The followings are examples of regions that universities perform their third mission and play significant role in economic and regional development.

### **Cambridge Cluster, United Kingdom**

Cambridge has become one of the most important models of local economic development based on commercialization of university research in which firms have played an essential role (Keeble, 1999). Due to the scientific strength of Cambridge University (noted by the number of Nobel Prizes for science), the cluster development was formed in the late 1960s when the region contained less than 30 high-technology firms. From 1972 to 1984, the number of high tech firms increased from around 100 to 300; while in the period of 1980-1985, company's establishment growth rate was at 30 new firms per year and even 50 in 1985-1988 (Garnsey and Lawton-Smith, 1998).

The development of Cambridge cluster was often viewed as a direct result of functional connection between high-tech firms and the university. The first Cambridge Phenomenon report (SQW, 1985) reveals that slightly more than half of firms have linkages with local research bodies, mostly university's departments and research center. These links were rather informal and spontaneous, as many firms are established by graduates and staffs of the university.

Trinity College of Cambridge University established Cambridge Science Park in 1975 which was the university's direct entrepreneurial activity becoming the symbol of the phenomenon. With other actions contributed to the regional development such as Barclay Bank's activities supporting high-tech ventures (e.g. loans, business advisory), formation of network/club of business managers, media campaign, collaborative culture of the university-town and entre-



preneurial activities of entrepreneurs and the university have been the main driving forces in Cambridge Phenomenon

Cambridge University has been recognized by an open and supportive approach to the exploitation of research. It encourages and supports collaborative research programs with industry while it enables easy access to its expertise through transparent regulations and policies. To support the university-industry linkages, the instrumental forces are the university's Industrial Liaison and Technology Office (ILTO) to promote the links through responding to external enquires and providing advice on research contract/consultancy agreement, Cambridge Research and Innovation Ltd. and Quantum Fund to provide investment funds for university scientists willing to commercialize their research, The Cambridge foundation with fund raising capacity, positive attitudes of the university toward industrial development noted in the establishment of the science park, reputation of the university with its world-class research, and high quality workforce (Stoerring, 2005).

#### • **Waterloo, Canada**

All accounts of the birth of the information and communications technology (ICT) cluster in Waterloo relate to the vision of a group of key business leaders to develop a new university in the region in the late 1950s when the post-secondary education system was expanded through the government's grants. Subsequently, the university was designed to focus the core strengths in sciences and engineering while establishing one of the most successful cooperative education programs in North America. The founders and entrepreneurs of many firms populating the cluster are graduates of the university, while many founded their companies with technologies developed during their years at university. Many of the firms have become internationally-regarded, as they maintain their primary research in Waterloo area because of their access to highly trained science and engineering graduates from the university.

From a study conducted by Wolfe (2002), industry feels that specific instruments of university such as the coop program effectively moving students into industry setting, the university's research infrastructure as a source of new idea and reputation generator for such cluster are very important for development of the cluster, as it has brought significant inward investments (eg. Cisco, Alcatel, Bell Canada, Nortel Networks) to the regional cluster. Many firm expands their investments in the university research through direct funding for basic research, affiliation with governmental schemes or partnering on



more applied research initiatives. The strong entrepreneurial culture at the University of Waterloo and the encouragement that faculty obtain to develop and exploit their innovation is cited by industrial sectors as a critical factor for the growth of the ICT cluster in Canada's Technology Triangle.

• **Heidelberg, Germany**

The German story is redefining the university system to be both more active in regional development while being required to be prepared to generate higher levels of income through commercializing its teaching and research activity (Etzkowitz, H. et al. 2000: 323). The division between the pure academic research and the more applied work of traditional universities is unlikely to persist in the future in practice since new networks linking basic and applied R&D that cut across institutional structures are developing. In response to the Hoechst's US\$50 million dollar contract with Massachusetts General Hospital in 1980, Germany founded the 'Genecentrum' research centres in Cologne, Munich, Heidelberg, and Berlin. The objective was to create a critical mass of research activity in molecular biology, a field in which Germany lagged despite its strong commitment to biochemistry (Etzkowitz, H. et al. 2000: 323).

In Heidelberg, Heidelberg University is the country's oldest university with strong reputation in science bases for biotechnology. Along with other institutes in the region such as German Cancer Research Center, The European Molecular Biology Laboratory, three other universities (Mannheim, Ludwigshafen and Kaiserslautern) and a number of leading pharmaceutical firms; Heidelberg University and the region successfully draws entrepreneurs to establish their firms. A central element to this was entrepreneurial activities of Heidelberg Innovation GmbH which is commercial consultancy taking company equity in exchange of market analysis, business and financial plan, assistance in capital acquisition and support for start-ups. It is rather a network organization, revealing information, partnering organizations seeking contact with biotechnological firms, and connecting to research institutes, universities and local authority. In addition, Heidelberg Innovation has managed BioScience Venture, considered the key financing element of the cluster established by leading pharmaceutical companies and banks that seeks international venture capital to finance developments. The heart of the cluster containing more than thirty biotechnological firms is at the Heidelberg Technology Park, the adjoining Biopark on the university's science campus. With the proximity, linkages between firms and university have emerged. An



evidence is a joint-venture by local firms and university to establish the Post-graduate Bio-business Program designed to provide scientists with hands-on experience of business administration through three months of coursework and nine months of practical training in industry (Cooke, 2001).

### • **Strait of Taiwan: Zhangjiang, China and Hsinchu, Taiwan**

Zhangjiang Hi-Tech Park was established in 1992 as a national park for high-technology development through Shanghai Municipal Government's Focus on Zhangjiang policy to accelerate development through one-stop service for interested enterprises, venture capital, tax/financial incentives, special funds for entrepreneurs, education and R&D. Through these efforts, the high-tech industry has emerged and the park now houses more than 250 international and domestic enterprises. With proximity, Shanghai Jia Tong and Fudan Universities, advanced academic institutions in China, have played essential roles in supplying high-quality human resources, on-job training (eg: Executive MBA), focusing on research closely related to industrial needs, and establishing star-ups in the park (Lai and Shyu, 2004).

Hsinchu Science-based Industrial Park was established in 1980 to engage high-tech enterprises, develop new technological industries, and improve industrial technologies through the critical support of The Industrial Technology Research Institute, National Chiao Tung and National Tsing Hua Universities, and three national laboratories. With governmental policy and support, this park has employed public land, publicly funded infrastructure facilities, one-stop service, on-the-job training, a domestic and international network, and investment incentives and benefits (Lai and Shyu, 2004).

Both Zhangjiang Hi-Tech Park and Hsinchu Science-based Industrial Park were the efforts of governmental with strong policy guidance, financial support and staffing whilst attaching to higher education and research institute for high-quality workforce, resource sharing and industrial technological development (Lai and Shyu, 2004).

## **Higher Education and Regional Clusters: Success Factors**

Regional industrial clusters in different regions such as those I mentioned in the previous section have been studied to find factors determining their level of success. Timothy Bresnahan, Alfonso Gambardella and AnnaLee Saxenian



(2001) conducted a two-year research project on the sources of success in regional clusters of innovation and entrepreneurship like Silicon Valley, and emerging clusters in Ireland, India, Israel, Taiwan, Northern Virginia (U.S.) and Cambridge (U.K.), most of those have shown remarkable rates of growth of ICT-related activities during 1990s. They find that the factors giving rise to a cluster can be very different from those keeping it going. After the rise of a regional cluster, agglomeration economies, externalities (external effects) and social increasing returns often naturally occur. The most difficult part of a cluster is rather to get it started. At the initial stage, conventional factors like firm-building capabilities, managerial skills, supply of skilled workers and connection to market were rather essential in taking a cluster off. In each element of factors enhancing regional cluster's development, there are roles of higher education and research institution to play accordingly to the outline of the research project done by Bresnahan, Gambardella, and Saxenian (2001).

### **Agglomeration Economies and External Effects**

Many literatures and theories related to clusters of innovative activities concentrate on external effects and the resulting agglomeration economies. An important feature of industrial clusters is external effects that benefit particular firms located in a region as a result of the location of other firms and institutions in the same region. These external effects have implication on both regional economic growth and private return to participating firms and institutions (such as venture capitalists, supplier industries, universities, etc.).

As I discussed in the previous section, clusters' external effects and the resulting agglomeration economies enhanced by the work of universities are knowledge transfer—both explicit and implicit—between firms and university, increase of research absorptive capacity of firms via network of researchers and skilled workforce, commercial research done by cooperation between universities and firms, network of institutions and firms that reduce transaction costs (including those of knowledge transfer and relocation of skilled workforce), information exchange among actors, and development of high skills. In the knowledge economy in which knowledge is a critical factor of production, university could be an active player in developing “knowledge externalities” (Saxenian, 1994) on the economics of a regional cluster to benefit those belonging to the cluster. “Localized knowledge spillovers” (Jaffe et al, 1993; Audretsch and Feldman, 1996) and tacit knowledge earned by interaction and experiences, easier within proximity, is what universities and firms must exchange and transfer for the mutual benefit of strengthening the competi-



tive of the cluster and both players leading to a “regional advantage”.

### **Firm-building capabilities**

Bresnahan, Gambardella, and Saxenian (2001) find that the processes of starting and sustaining a cluster and firms have different economics. Starting a cluster and firms involves economic fundamentals for an industry or technology, and finding the spark of entrepreneurship to get it running. Both of these are supported by a number of common elements found in the examined regional clusters.

A similarity that the authors find across the examined clusters is that they have taken advantage of a new technological and market opportunity that had not been exploited. Examples are the integrated circuit industry in the Silicon Valley of the 1960s, the internet and network security markets in Ireland and Israel, software demand following the Y2K or the Euro problem in India, and the hardware and equipment opportunities in new devices like mobile phones and PDAs in Taiwan and Scandinavia. With new technological capacity and new demand for technology in market, entrepreneurs have exploited technology and market opportunities while making their relationship with existing technologies and clusters complementary for their competitiveness. In addition, the authors find that the clusters they examined are complementary to ICT technologies, mostly sold by US-based firms or US-linked multinational firms. Interactions of examined clusters (especially Ireland, India, Israel and Taiwan) with U.S. market and U.S. demand for ICT products, services and components in the 1990s rather fueled the growth of such clusters.

Another similarity across the examined clusters is the level of investment, effort and infrastructures necessary for an innovation and technology that take clusters off. The long-term investment in education for a high skilled workforce, as a key factor of production for the knowledge-based economy, has been essential in a number of regions, notably Taiwan, Ireland, India and Israel. The supply of highly skilled workers needs to be available to enhance the growth of the regions, as I will discuss in the later section.

The study suggests that the growth of firms, not just the growth in the number of companies, signal the clusters' success. These are the firms that are one of the sources of increasing returns for the growth of clusters in the form of training for potential spinouts, development of technical and managerial capacities, etc. Supply of technology and skilled workforce, in which university is assumed to be a major player, are the most frequently cited sources of



comparative advantage for firms and clusters to be grown.

Economic fundamentals for developing clusters that universities actively involve are at least to develop “knowledge externality” of the region and infrastructure for innovation and supply of highly skilled workforce. In addition, a few universities with their infrastructure and pool of talents have attracted firms to their regions because regional advantage they develop to reduce costs of acquiring R&D capacity, innovation, skilled workforce and other productive resources. Successful universities that have attracted firms to their regions due to their capacity and industrial relevance are Stanford in Silicon Valley and Cambridge, U.K. Besides attracting firms, these universities also encourage and provide supports for their graduates, researchers and affiliates to establish spin-offs.

### *Managerial Workforce*

Firms in new clusters and sectors develop their non-technical workforces in many ways. In the early stage, Silicon Valley has produced a strong supply of scientist managers by having scientists and engineers learn management skills through both experiences and training. As Silicon Valley matured, it has employed a number of different models to create “dual-knowledge-base managers”, including more experiential training, mentoring by experienced entrepreneurs or venture capitalists and career mobility from established firms into new entrepreneurial firms. In later clusters, technical workers in their native regions can obtain trainings in a variety of ways to introduce them to management and the world market. Potential engineer-managers can work in multinational enterprises in their home region while gaining experiences / trainings for managerial skill sets and learning about world markets. In addition to conventional managerial training in university’s setting, multinational enterprises play an essential role in this aspect of many regions including Taiwan, Ireland and Israel. Another source of managerial human capital comes from the movement of engineers and managers working in established clusters elsewhere, especially in Silicon Valley. These individuals bring with them experiences and knowledge of management in similar sort of firms.

In developing managerial workforce, university must employ multidisciplinary or “Mode 2” (Gibbon et al., 1994) approach into their curriculum and provide technical students some exposure to management issues relevant to their field. Industrial engineering is an example of dual-knowledge base field that trains graduates to become industrial managers with engineer-



ing background. Dual degree programs and professional trainings are also university's feature for developing managerial skills for workforce. Furthermore, some universities have access to clusters to provide them management courses including degree programs such as executive MBA.

## **Supply of Highly Skilled Technical Workers**

All examined regional studies indicate the essence of highly skilled workforce as a precondition for the growth of a technological based entrepreneurial cluster in countries like Taiwan, Ireland, India and Israel. Some of studies further reveal that there is a critical role for universities as a source of both highly skilled workers and technologies that are utilized for export and growth. Remarkable examples are found in stories of Cambridge, UK and Silicon Valley in the 1960s.

However, there must not be encouraged to view university and higher education as only provider of skilled labor in starting clusters. The study shows that there are clusters' players, besides university, that can provide such skilled workforce. Large firms are cited as an actor playing a critical role in skilling workforce. "While the role of universities like Stanford or Berkeley has been widely emphasized in the Silicon Valley story, one should not neglect the potential training provided by established firms like Hewlett-Packard or Intel", Bresnahan, Gambardella, and Saxenian said (Bresnahan et al., 2001, p. 846). Large firms frequently provide technical competencies; for example, researchers can utilize equipments and form research teams that would rarely be available outside the leading firms. Many firms also offer managerial trainings and possibly managerial connections. Furthermore, these technical and managerial trainings often encourage spin-offs.

Besides universities and large firms, there are other sources of training such as research contract for the U.S. governmental defense in North Virginia, military training in Israel. In addition, the supply of skills can come from outside the region such as American-educated Chinese and Indian engineers in Taiwanese and Indian clusters, and competent engineers from over the world in Silicon Valley.

To remain relevance in producing highly skilled workers, universities must develop their relationship with industries and understand markets' and firms' need in order to skill graduates accordingly. Strategic partnership between companies and universities through research, curriculum design



and cooperative education enhance knowledge transfer, resource sharing and graduates' preparation for participation in workforce. Commercial, "Mode 2" and applied research of university provide relevant contents for developing graduates to work with companies in related research and field.

## **Connection to Market**

As already mentioned, emerging technological clusters in Israel, India, Ireland and Taiwan had relationship with market in the United States, which helped them to exploit the US's ICT growth in the 1990s. It was important for these clusters to complement their products to the major source of demand (namely Silicon Valley and the US), rather than competing with them.

In addition to the connection with the major market (the US) and the complementarities of the emerging clusters' products with the existing technologies (especially those produced in the US), the other pattern of connecting to market and sources of demand can be found in Scandinavian countries. The key of success is to position the firms in areas not covered by the existing leading companies or the U.S. enterprises. In ICT, the leading firms, especially the U.S. firms, have produced full range of products and occupy entire vertical markets, leaving little room for other global players to occupy even parts of market. The opportunity for other global players was to occupy other potential vertical markets (globally and at least continentally) that had not been occupied by the leading players (Richard, 2001). Some leading companies in Scandinavian, such as Ericsson and Nokia, were very successful in pursuing the mentioned strategy. Besides the highlighted factors for clusters' success -namely highly educated workforce, supply of technically and managerially skilled people and connection to demand-, leading Scandinavian firms focused on the wireless hardware segment of the ICT that was not occupied by the leading U.S. companies. Furthermore, the business opportunities were furthered by European institutional accomplishments in the last decade such as the establishment of the GSM standard for communication throughout the continent. This was the key event that created a continental demand and enhanced the growth of participating companies.

Thus, it is very important for universities to be connected to the market in order to understand and serve firms and clusters well in providing innovation, skill formation and other external effects accordingly to market opportunities. Opportunities to connect with market and industry can be through cooperative education program, joint-research, seminars, membership of



organizations, etc. Features of university to remain relevant are connecting with firms and markets in order to understand and serve their demand, being an active player in more interdisciplinary, pluralistic, networked innovation system, and assuming entrepreneurial tasks such as marketing knowledge, establishing spin-offs for academic dimensions, knowledge-sharing and trainings.

From the findings of research project on the sources of success in regional clusters of innovation and entrepreneurship done by Bresnahan, Gambardella, and Saxenian, I find that university could serve the necessity for clusters' success and play an essential role in the clusters' development. The role of university in knowledge-economy and regional development—namely provider of innovation, commercial research, highly skilled workforce, network and other social capital—rather benefits the clusters only if universities provide relevant and cutting-edge contents while actively develop relationship with industries.

## **VI Conclusion**

With the knowledge-based economy in which knowledge become a major factor of production, in addition to conventional roles of university as provider of public goods, good citizenship, reflective space and knowledgeable workforce, universities must respond to the changing environment and need by producing scientific and technological information, equipment and instrumentation, skills or human capital, networks of scientific and technological capacities, prototypes for new products and processes. Certainly, university has an important role in economic, innovation and regional development system.

The concept of cluster has been formed to improve competitiveness of firms and players within such clusters. Firms and actors within an industrial cluster could be benefited greatly through being belonged to the related or complementary epistemic communities existed around the specific professional practices' exercise. Universities perform at least two critical roles in the current economy: the performance of research and the training of highly qualified human capital. They serve as primary source of knowledge workers and knowledge itself which have become the key factors of production in the knowledge-based economy. Explicit and tacit elements of knowledge or research informing practices are to be shared while proximity of universities and industries (with shared codes, tools, theories and understandings) facilitates the exchange and transfer of knowledge, ideas, practices and inno-



vation. Universities are also the major actor in producing and training highly qualified knowledge workers to serve the needs of industries while some universities even play critical roles in providing regional social capital, promoting clusters / industries and attracting firms to join the regional clusters.

Drawn from experiences of such clusters in different regions such as Cambridge (U.K.), Waterloo (Canada), Heidelberg (Germany) and Strait of Taiwan (Zhangjiang, China and Hsinchu, Taiwan); universities could play significant roles in developing sources of industrial clusters' success, including positive externalities (external effects), firm-building capabilities, managerial workforce, and supply of highly skilled technical workers in which universities could play vital role in each element through their research, training, social capital and entrepreneurial spirit.

To achieve high level of competitiveness of an industrial cluster, firms, universities and government must co-develop their capacity to foster innovation and utilize skilled workforce efficiently. University and other players within cluster must actively collaborate and develop network to enhance mutual trust leading to technological transfer, knowledge sharing, highly relevant skilled workforce production, and to participation of firms and talents.



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ACADEME 2010

Journal of Leadership and Management in Higher Education

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# **From Localization to Internationalization to Globalization or Vice Versa?: Direction of Campus Leadership in the 21st Century: A Dynamic Campus Leadership**

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## **Abstract:**

University like any other system includes a set of components and mutually dependent variables. It aims to promote intellectual capabilities of students, educate them and prepare them to meet the needs of society. It holds a near, far and farther environment. Campus Leadership needs to be directed at strengthening system components primarily at local environment and maximize local factors to be able to adapt itself with the world standards, walk and interact with others in an international environment and establish a win-win relation in a globalized world. This article is an attempt to discuss the importance of maximized localization as a pre-requisite for a dynamic campus leadership in international scene and the globalized world.

## **Introduction:**

Universities throughout the world try to improve their institutional capacity and leadership for success in a globally mutually dependent society. If they are to succeed, more efforts are needed primarily at local level to guarantee that their graduates will be prepared for this challenging world.

The phenomenon of globalization is a fact which can not be ignored and has its own specific challenges in particular for developing countries. This process has effects on the environment, on culture, on political systems, on economic development and prosperity, and on human physical well-being in societies



around the world. It might be an opportunity or a threat and what is important is the type of reaction towards it. Some responds to this phenomenon passively and think there is no way to resist against it and it should be accepted and followed fully. At the other side, there are scholars who reject it and try to build a wall round their own local campus and avoid any external impact. But what is really the logical approach towards this. What is the relationship among these three concepts of localization, internationalization and globalization?. Can each of them be discussed separately or they should be seen in a sequence?

### **Campus Management and Capacity Building**

In an ideal form, university is an open system and it is expected to be so, because a closed system is relying only on local factors and ignore external environment. The result of such a trend is a static condition, disruption, waste of resources whereas in an open system, there is a tendency towards dynamic equilibrium, receiving input and increasing output. At such an open system, the body not only adapts itself with external factors of environment but also with local changing factors. A closed system is being disrupted in the course of time because it does not receive any new energy from environment whereas an open system can receive it and develop further.

Developing countries gradually realize the importance of internationalization and globalization phenomena but this does not necessarily mean that they should fully surrender to that passively. They have many values that if properly be presented can have positive impacts. In other words, there are deep ethical and moral values and traditions which can enrich the world.

Science and acquisition of knowledge has a long history in many developing countries. Even new higher education centers are in fact the continuation of the old-established tradition of pursuing knowledge. The experiences of the world shows those nations who have built walls round themselves have not been successful to protect themselves and those walls have been signs of their weaknesses. The products of universities and campuses being encircled with local walls have been proved to be fragile and ineffective when being exposed to the world. So, emphasize on localization in this article does not mean to have such a wall around the campus, but it simply means that universities should first reinforce their capacities and infrastructures locally including professors, students, classes, labs, facilities , etc and then try to attend to the international arena.



They are expected to enhance their potentials while using the successful experiences and best practices of other countries which have already been promoted in those local environments. "People live in their local environment. The local community is a part of an integrating world. The local is part of the global and the pattern of globalization is influenced by what happens locally. In order to strengthen the linkage between the local and the global, there is a need for a proactive and positive agenda focusing on local government, the local economic base, local values and cultural heritages. ... The response to globalization can be said to begin at home. This reflects the simple but crucial fact that people live locally within nations. (P.78, 2004-A Fair Globalization)".

The aim of active presence in international area is not to remove others from the scene but to create a balanced relationship in which each local system can interact with others and have a mutual impact on others. This will not lead to a win-lose relation but a win-win relation which is beneficial to the world as a whole. Globalization is associated with the programs that function for multiple cultures whereas localization is the process of customizing a function for a given culture and locale. Local management is critical since a correct assessment of the primary surrounding of universities will pave way for a strong presence in wider environments.

Belief in internationalization and living in a globalized world should be properly understood and institutionalized within the above-mentioned context in order to present it at global scene and prepare graduates to compete with others in such a context. There is a need to a capacity building process to achieve that goal. However, sometimes too much emphasize on being highlighted at international scene might make higher education administrators ignore their local surrounding environment. In such a situation, all sources will be directed to promote the international image which is a superficial mask hiding the local weaknesses and neglect responding to the public needs.

### **The Necessity of Having an International Voice**

Universities are trying to find a voice in international scene. What does it mean? Does it mean to have international students and faculty, courses in foreign language, having foreign teachers, video conference classes with foreign universities? The answer might be all of them while keeping an eye on the local environment as the base of start of these efforts. There are many stages which they must pass such as traditional resistance against any change, and



there is a need to laying down infrastructure in place to build capacity for training global citizens.

One of the mechanisms being considered in developing higher education system is to define a series of missions at national, regional and international levels while there is a possibility for each designated university to enhance its ranking to a higher rank. The 21st -century campus with all those spectacular features such as modern facilities, international programs, wireless technologies, access to university and its components, international curriculum, equipped labs is a vision , not reality but it is achievable and will take place in a long term context. Student, teachers and community needs are changing, and it is important that campuses respond to these changes properly.

Universities in all countries face a tension between choosing the global and the local when building a dynamic international campus environment and it is natural. In fact, gglobalization and internationalization are forcing universities to act and they are challenging universities across the world. Universities have to implement a new study-system. Due to international orientation and competition for students, staff and external funds, universities have to reorganize and consolidate their organizational structure. “The environment in which organizations operate is no longer stable and predictable. It has become hyper-competitive. Now, at the start of the 21st century, this is bringing us into a knowledge economy. (Navarro and Gallardo, 2003).

In the global society of the 21st century , there are many steps to lay down a strong campus management as initial steps to have a dynamic presence in the world including: high level research, trained human resources, international cooperation networks, openness and accessibility, precise assessment of the surrounding environment, agreements with various partners in the world, having strategic planning, using geographical location, joint research programs, promoting international liaison offices, receiving top students and scholars , increasing the number of sabbatical leave, using the experiences of graduates of foreign universities, active interaction with the world. “ International institutions can bring new standards, methodology, teaching materials and practice that can improve local higher education, providing students with learning experiences and opportunities they would not have otherwise and breaking down artificial barriers to access to higher education...”.(Schwartzman,2003).

The political, economic, social and cultural relations of the world have found



a new arrangement. Some believe that globalization is hidden in the nature of modern culture. It is an uninvited guest who will come whether being invited or not. It collapses geographical borders. The paradigm of change is an inevitable fact in the age of globalization. In the light of these changes, the mission of universities in local and national levels has changed and has to be re-conceptualized.

World is constantly changing. If universities do not acquire necessary skills to promote their situation, they will face many problems. An effective education will help with the reconstruction of institutions. It is not achieved through prescription but it is a gradual process. Confronting the challenges of today's world needs peace and thought and not emotion. Isolation has no benefit to local higher education institutions. Of course, it should be noted that what is practiced in other countries may not be easily practiced in another country with the same results. They are only examples of similar conditions and may only be used as guidelines and not the details, so that our program should be based on indigenous strategies.

It is essential to implement global theories only within local conditions and to be reconstructed with due attention to various local factors. Development will take place by provision and promotion of education and research system for everybody and a real or virtual network of communication. All external factors have impact on international and global relations.

The success and efficiency of a university as an organization is dependent on the rate of its ability to adapt itself with the needs of its surrounding environment. As the external environment of developed countries is different from that of developing countries, many theories will face limitation in practice within the conditions of developing countries. The imported concepts should complete and help with the local views. Efforts toward the establishment of local management do not mean we should disregard knowledge and technology but is an alert towards the pitfall and dangers of blind imitation.

Higher education has always been a dynamic and changing institution and has changed in harmony with changes of social, cultural and epistemological structures. Universities are becoming customer-oriented and life long learning, using cyber space, has become a necessity. All universities are not international but they are under the influence of that phenomenon. Massification of higher education has disintegrated the elite oriented universities. Knight (1997: 13-14) believes that globalization is an ideological concept which refers



to the impact of communication new technologies, world policies and their impacts on economy, culture and policy in the world whereas internationalization is an strategy and option which governments use to face and utilize global phenomena. Alladin (1992: 12) is in the opinion that even education is the fourth dimension of foreign policy. Educational cooperation is a kind of investment not only for the sake of knowledge for knowledge but for the future diplomatic relations. As political elites are selected out of graduates of universities, so it is a kind of introducing the culture and society to them through granting scholarships. Academic relations are ways to reduce tension and enmity when the political relations are not stable. Internationalization can speed up scientific growth and help with the national economy. It intensifies competition and help with the enhancement of quality standards.

Every university wishes to be regionally rooted, nationally influential and globally respected. This is a desire which is seen in the vision statements of many prestigious universities throughout the world.

### **Common Visions and Missions:**

When a university is founded, it is based on a vision and certain missions are defined to fulfill that vision. Reviewing the vision and mission of universities throughout the world, many common motifs are observed which indicate they all wish to be the best in the local environment and to have a global respect. Some of these common visions are as follows:

- Striving constantly to sustain and enhance quality in teaching, research, public service and economic development by educating, creating knowledge and putting knowledge to work on a large scale and with excellence.
- Creating a brilliant future
- Intending to be the prominent university linking the people of the surrounding community to the nation and the world
- Preparing students to create future
- Being the leading university dedicated to the pursuit of academic excellence by fostering, disseminating and applying knowledge and intellectual values to ensure an enriching future for the student community and preparing them for the ever changing global economy
- Educating the whole person, to professional formation, and to empowering leaders for a just and humane world
- Being a promoter of change, engaged in the comprehensive education of individuals to enable them to use studying as a self-development tool and to build



their skills to face and solve fundamental problems inherent to the human being and to society.

- being a bold and dynamic community, with a “no walls” culture and a spirit of enterprise which strives for positive influence and impact through our education, research and service
- Being a national university of choice, being a nationally prominent and internationally recognized university,

Based on such visions, various missions are defined such as the following:

- Putting knowledge into work
- Promoting a campus environment
- Being a leading university dedicated to the pursuit of academic excellence
- Nurturing and developing the talents of students and to create applicable knowledge in order to support social and economic advancement

What is common is the desire to be nationally chosen and internationally recognized to produce dynamic graduates who could interact with the world constructively.

As the science of Genetics tells us couples who are related by blood have a higher chance of having children with genetic diseases or birth defects, this can be applied to the case of too much emphasize on local environment while ignoring the broader and international scenes. Localization should be seen within the broader concept of internationalization and globalization. As also John Donne, the British poet (1572-1631) says, “No man is an island entire of itself; every man is a piece of the continent, a part of the main...”

The direction of campus management in the 21st century should be such that it could encompass the three concepts of localization, internationalization and globalization in a harmonious way.

## **Conclusion:**

One of the remarkable features of university management is its flexibility and power to adjust itself with the changing world. Local action is as important as national and global actions. University as an open system is supposed to respond to the needs and specific conditions of its surrounding environment primarily. There is a need to promote the means and instruments available to university management to participate in the gains of globalization effectively.



Each local situation is different and there is no universal policy blueprint but at the same time there are certain common basic values and mechanisms recognized globally. One of the pre-requisites of a strong presence in international scene is to maximize the local environment. A realistic assessment of existing situation of universities in each country will pave way for a gradual progress and success in internationalization scene.



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ACADEME 2010

Journal of Leadership and Management in Higher Education

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# The Operation and Management of Higher Education under the Popularization Background in Mainland China

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**Abstract:** The Gross enrollment rate of higher education has grown rapidly since Mainland China began the implementation of the expansion plan of the higher education enrollment in 1999. Three years later, the development of China's higher education entered the popularization stage. "Popularization" not only brings about radical changes in higher education, but also poses great challenges. This paper, by citing Zhejiang Gongshang University as an example, states the operation and management of higher education in Mainland China under the popularization background by ensuring and improving the quality of higher education, implementing the reform in the internal management system, establishing the financial support system for poor students, promoting internationalization and strengthening scientific research, social services and attaching importance to the management by law and other aspects.

**Keywords:** Higher Education; Popularization; Operation; Management

## I. The Popularization of Mainland China's Higher Education and its Reasons

### 1. The development process of the scale of higher education in the Mainland China (1998-2008)

Since the reform and opening-up policies were adopted in the Mainland, remarkable achievements in higher education have been made. In particular, since the expansion of enrollment in 1999 higher education has been developing very rapidly. The number of admitted students reached 1.08 million in 1998, and expanded to 6.07 million in 2008, an increase of 4.99 million. The number of educational institutions of higher learning increased from 1022 in 1998 to 2263 in 2008. The total number of college students in educational institutions of higher learning of 3.4087 million in 1998 and jumped to 20.2102 million, an increase of 6.8015 million (Section Table 1). The scale of higher



education in China has exceeded that of Russia, India and the United States as it now ranks the first in the world.

With the rapid growth of the number of college students, the average number of students in each institution of higher learning grew from 3335 in 1998 to 8679 in 2008. In recent years, college students have increased in large numbers on campuses. There were 1908 educational institutions of higher learning in Mainland China in 2007, in 482 of which the number of students ranged from 10000 to 20000, and in 101 of which another number of students ranged from 20000 -30000, while 32 others the number of students each amounted to more than 30000.

Table 1 The number of Admitted College Students, the Growth of Higher Education Scope and the Gross Enrollment Rate of Higher Education since 1998

Higher education	year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
The number of admitted students (10,000)		108	160	221	268	321	382	447	504	546	566	607
The number of educational institutions of higher learning		1022	1071	1041 <sup>o</sup>	1225	1396	1552	1731	1792	1867	1908	2263 <sup>o</sup>
Total No. of college students (10,000)		340.87	413.42	556.09	719.07	903.36	1108.56	1333.50	1561.78	1738.84	1844.90	2021.02
The average number of students of each educational institution of higher learning		3335	3815	5289	5870	6471	7143	7704	7666	8148	8571	8679

*Because of the reform of the management system and the readjustment of the structure in higher education, there are 1041 educational institution of higher learning in 2000 with a decrease of 30, in comparison with that of the previous year.*

*The number of the state-run secondary colleges relying on the mother school and social forces were not included statistically until 2008. In 2008, with the promulgation and implementation of "The Methods of Establishing and Managing Independent Educational Institutions of Higher Learning", 315 independent colleges emerged, resulting in the increase of 315 educational institutions of higher learning, in comparison with that of the previous year.*

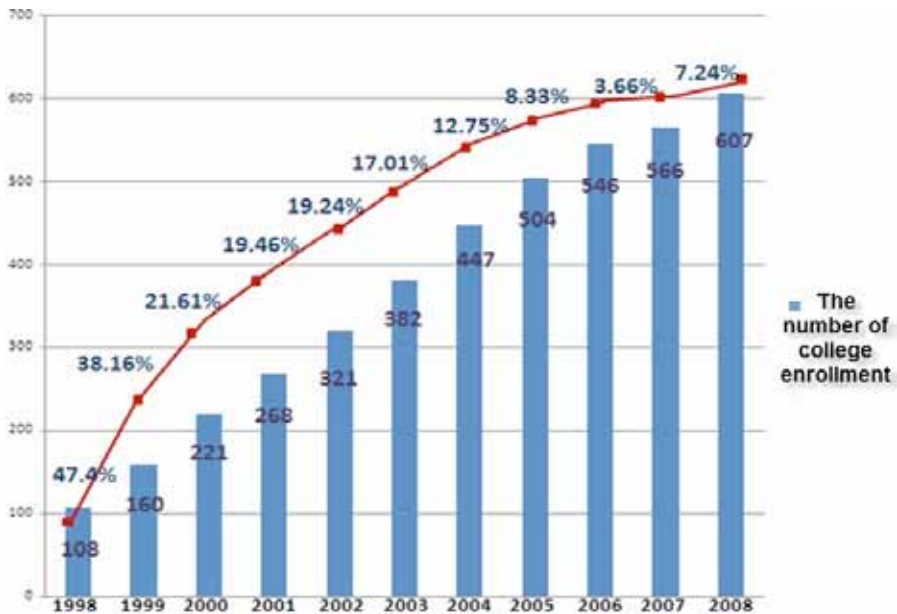


Figure1. The average growth rate of college enrollment during 1998-2008 (%)

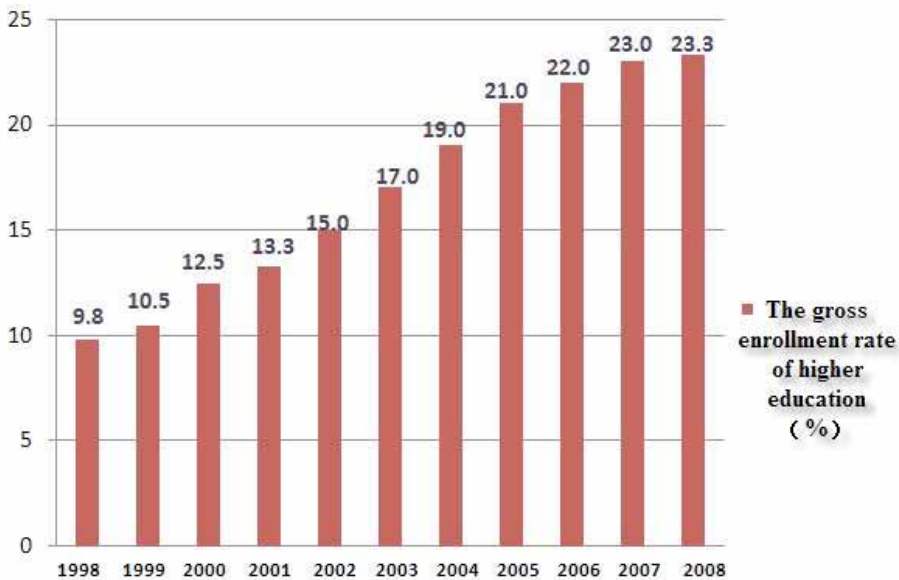


Figure2. The growth of gross enrollment ratio of higher education since 1998(%)



From 1998 to 2005, the number of admitted college students increased with a double-digit speed each year (see Figure 1) and the gross enrollment rate of higher education grew rapidly from 9.8% to 23.3%, which has an increase of 13.5 % (see Figure 2).

The above data show that since 2002 the higher education in Mainland China has entered into a popularization stage of development recognized internationally.

## **2. The reasons for the popularization of higher education in the Mainland China**

2.1 Parents' expectation, the Chinese tradition, of parents has always attached great importance to the education of their children so that they will have good jobs and good careers. Since the reform and opening-up policies were adopted, the Chinese people have been getting more and more prosperous so that they strongly hope their children will enjoy access to higher education in order to raise their social status and improve their quality of life. Though the number of educational institutions of higher learning reached 1022 and the gross enrollment rate grew to 9.8% by the end of 1998, these were still not able to meet the population's strong demand for higher education. The Chinese parents were eager to expand the enrollment of higher education.

2.2 The requirements of science-education development strategy. With the in-depth development of the reform and opening-up and with the modernization drive going on, there is more awareness that the low quality of the labor forces and the incompetence in scientific and technological innovation have posed a major obstacle to economic development and participation in international competition. The essential way to implement the strategy of making China strong by relying on science and education is to change the mode of economic growth by turning the burden of the dense population into the advantage of human resources, vigorously developing higher education and improving the overall qualities of the whole nation and turning out a large number of high quality people with innovative capabilities.

2.3 The requirements for the development of higher education. After the enlargement of enrollment, the scale of higher education is the main bottleneck restricting the development of national education. There was a great imbalance between the social demand for higher education and the supply of higher



educational resources in Mainland China. There were such increasingly serious problems in Mainland China of the inconsistency between the higher education system and the socialist market economic system; the inadequate funding for the investment of higher education and the small size of university campuses. In comparison, higher education in the increasing number of countries has entered the popularization stage of development, which is the general development trend of higher education all over the world. Therefore, we need to speed up the development of higher education in Mainland China by leaps and bounds through the popularization of higher education. The enlargement of the college enrollment is a necessary requirement for the popularization of higher education in this specific historical stage.

2.4 The needs for stimulating domestic demand and economic growth. Affected by the Asian financial crisis, a trend of deflation, sluggish consumption and decreasing investment appeared in our national economy after 1998. In order to provide strong intellectual support for developing our economy, to promote consumption, expand domestic demand and delay employment to combat the Asian financial crisis, it was necessary to implement the policy of the enlargement of higher education enrollment. On the basis of the above situation, in June 1999 the Central Committee of Communist Party of China and the State Council made the important decision on “The Expansion of the Scale of Higher Education and the Development of Higher Education through Various Positive Forms”.

## **II. Great Changes with the Appearance of Popularization**

Since the reform and opening policies, especially since the enlargement of college enrolment, the following great changes have taken place in higher education in Mainland China: from the state-owned education system to the diversified one; from the central leadership system to the central and provincial leadership system, from the highly centralized management system to the self-operated system; from the nationally unified enrollment and dispatch system to the market-oriented enrolment and employment system. The change of the micro-environment in higher education brought great changes in the internal management and operational systems in the educational institutions of higher learning.

### **1. Rapid expansion of university campuses**

With the rapid increase of the number of college students, universities had to expand their campuses, some from one campus to two campuses or more. As



the education minister, Mr. Zhou Ji said in his article entitled “On the Development and Scientific Management of Universities”: “Some universities have expanded their campus size as much as 10 times before. Many universities have very large campuses with excellent infrastructures.”

In order to achieve the leap-forward development in higher education, some local governments have explored a new model known as Higher Education Park or University Town. As most of the educational institutions of higher learning were located in downtown, which restricted their expansion, the local governments started to build their Higher Education Park or University Town to develop higher education in order to break the bottleneck for higher education development. For example, six higher education parks have been constructed in Zhejiang Province since 2000, covering an area of 2633.33 hectares with a floor space of 11.38 million square meters and the total investment amounting to RMB ¥ 21.9 billion (3,206,532,300 US dollars). These six education parks hold 36 educational institutions of higher learning with a student population of 335,000. As one of the 36 educational institutions, our Zhejiang Gongshang University has expanded from 26.27 hectares to 129.6 hectares in area now, with an increase of its floor space from 242,000 square meters to 874,800 square meters. Now we have the Xiasha campus in the east of Hangzhou city and the Jiaogong Campus in Downtown Hangzhou. The new Xiasha campus covers an area of 113.33 hectares.

## **2. The appearance of the state-owned faculties runs by the private sectors**

The state-owned faculty or college run by the private sector is a sub-college in a state-owned university, but it is operated with the market mechanism. It first appeared in Zhejiang Province and Jiangsu Province, which are two very prosperous and affluent regions in eastern China. Since the 3rd National Conference in Education was held, Zhejiang Province was the first to introduce the market mechanism into the state-owned universities on trial basis and founded the “state-owned faculties or colleges run by the private sectors”, considering its objective requirements and its feasibility from the social and economic point of view. As a new creative program and project, it enjoys the trust from students and their parents as they are owned by government, and it also enjoys high efficiency as it brings the market mechanism into full play. So it is quite an active and vigorous system during this period of development of higher education and it has made great contributions to the popularization of higher education in Mainland China. There are 20 state-owned faculties



run by the private sectors in Zhejiang Province now. The undergraduate students recruited by them account for 40% of all the undergraduates in Zhejiang Province. Our Zhejiang Gongshang University is a state-owned educational institution of higher learning. Hangzhou Institute of Commerce in Zhejiang Gongshang University is a secondary faculty which is operated by the private sector, but owned by Zhejiang Gongshang University. It recruited 2104 students in 2009.

However, the state-owned faculty run by the private sector is confronted with series of micro-problems. For example, its objectives are not very clear and its operational system has much room for improvement. Its financial management, infrastructure use, and human resources management and allocation are far from satisfactory and clear-cut. In 2008 the Ministry of Education of Mainland China worked out "The Suggestions on Standardization and Strengthening of the New Mechanism and New Model of the Independent Faculty Management System", which has paved the way for the further development of state-owned faculties run by the private sectors.

### **3. Diversified channels for funds**

Since the expansion plan for higher education was carried out, the proportion of self-raised funds for universities has been increasing gradually. Most of the funds of the state-owned universities used to come from the governmental allocation. Now their funds come from various financing channels. The financial allocation from the government has accounted for no more than 50% now in the financial structure. The funds in state-owned universities are mainly from the following sources: government financial allocation, students' tuition fees, research and service income, the revenue of university-owned companies or subsidiary enterprises, donations, loans, etc. In addition, the revenue from the replacement of the old campus, supplementary service income and the societal service income from the logistic department are their financial sources, too. Compared with the year 1998, our university's total funds increased 9.3 times in 2008. We are financially stronger and our operational ability is better than before. Take our new Xiasha Campus as an example, its total investment amounts to about RMB ¥ 2.2 billion (322,117,400 US dollars). By the end of June 2009, we had already spent RMB ¥1.891 billion (276,874 547 US dollars) on the construction of the Xiasha Campus. The investment mainly comes from the revenue from the replacement of our old campus which is RMB ¥1.052 billion (154,030,684 US dollars) and accounts for 55.63% of the total; the government's financial allocation which is about RMB ¥0.36



billion (52, 710,120 US dollars) and accounts for 19%; the bank loan which is about RMB¥0.175 billion (25,622,975 US dollars) and accounts for 9.3%, and the tuition fees from the previous years which is about RMB¥0.304 billion (44,510,768 US dollars ) and accounts for 16.07%.

#### **4. Strengthening the student-oriented concept**

The increasing popularization of higher education has brought about great changes not only in the form of expansion in enrollment and scale, but also in the reinforcement of student's self-autonomy, the student's management and the mode of students cultivation. In the 1970s', students were regarded as consumers in US universities and there appeared the concept of "Student Consumers First". It is true that students pay for their schooling and share all the costs of the university. Therefore, students truly have the consumers' nature and characteristics. Especially the students from state-owned faculties run by the private sectors or independent colleges each have to pay the annual tuition fees varying from RMB¥ 8,000 (1,171 US dollars) RMB¥ 10,000 (1,464 US dollars), to RMB¥ 15,000(2,196 US dollars) or even to above RMB¥ 20,000 (2,928 US dollars). From the basic theory of the market economy, students and universities have established a kind of contractual consumption relationship. Once they pay the tuition fees, they are entitled to satisfactory educational services. Educational institutions of higher learning provide educational services to them. Students have become not only the objects to be educated and managed, but also the target customers to be served. Universities should improve the cultivation and management patterns and teaching approaches to the students' satisfaction as universities and students are equal in their relationship. For this purpose, universities adopted the students-oriented approach through the slogans of "All for Students, for All Students and for Students' All". The mode of students' management turned from the "manager-dominated" approach to the "student oriented" approach. In addition, faculty members' teaching is monitored and evaluated by students and experts at regular intervals in order to get students feedbacks and measure the students' satisfaction so that teaching quality may be secured and improved.



### **III. The Operation and Management of Higher Education under the New Circumstances**

#### **1. Ensuring the quality of higher education against the slip due to the enlarged enrollment**

The core of the operation and management of higher education depends on the improvement in educational quality. In order to ensure the quality of higher education while the scale of higher education is expanding, the Ministry of Education launched the Project of Undergraduate Teaching Quality and Teaching Reform by carrying out the undergraduate teaching evaluation, issuing Outstanding Teachers Award for Teaching, setting up National Excellent Courses, Establishing The Model Center for Experiments, publishing Hundreds of New Textbooks and constructing the platform to share resources among universities so that the teaching contents and methods were improved and the quality of higher education is ensured.

In order to ensure the teaching quality against its slip, the following measures have been taken. Firstly, the new education philosophy established and constructing the cultivation framework of multi-specialization, multi-channels and modularization, such as practiced of the minor system (the students can choose a major and a minor.), double major system (the students can choose two majors.), and dual-degree system (the students can get two degrees.) and the mutual recognition of credits and transferable major system (the students can move from one major to another major and their related credits can be recognized in different colleges or departments.). Secondly, we reformed and establishing some courses and new majors. Thirdly, the students' evaluation of teaching carried out and satisfactory degree in addition to the experts' and peers' evaluation of teaching. Fourthly, the new evaluation system for students was set up. Fifthly, we attached importance to the establishment of a strong faculty. For example, in the last three years, our university employed 322 new faculty members from home and abroad. In 2009 was scheduled the employment of 200 outstanding Ph. D. holders and outstanding professors from all over the world. Sixthly, a favorable academic environment was created on campus for students and faculty.

The above-mentioned measures have resulted in initial success. In recent years, three majors at Zhejiang Gongshang University have been recognized nation-wide for their own distinctive features and the Project for National Training Model for the Innovation Experiment has been approved. In 2006,



two international second prizes and one national first prize in the Undergraduate Mathematical Modeling Contest were offered. In the National Challenge Cup Contest 2007, we got 3 second prizes and 3 third prizes in the Extra-curricular Academic Science and Technology Contest, and the group ranked 52nd among all the educational institutions of higher learning all over Mainland China and No.1 among all the universities in Zhejiang Province. In the national Challenge Cup 2008, we got one golden medal in the business plan competition. The CET4 (the College English Test-Band 4) passing rate of the 2006 grade students hit as high as 92.07%, which ranked Top 10 among all the universities in China. The pass rate in TEM4 (Test for English Majors-Band 4) reached 99.20%, which is 37.37% higher than that of the national average level. Among the graduates in 2009, 702 students were admitted to graduate schools at home and aboard, 131 students passed the national exams for public servants. With both added up, the number amounted to 833. In the last few years our graduate employment rate has kept above 92%.

## **2. Carrying out the reform of the internal management system with its focus on the improvement of the operational mechanism between the university and its colleges**

Before the enlargement of enrollment in 1999, most of the universities in Mainland China were not large in size and all the management duties were taken by the university administration. With the expansion in campus size and the enlargement of the enrollment, the number of faculty members, students and department majors increased rapidly. Therefore, it became difficult for the university administration to make all the decisions covering all the affairs of the colleges and their related departments. It was necessary to change the centralized and unified university management system into the college management system with the university administration making only the major decisions regarding the university's strategic plan for its long-term development and shifting some of its management duties and power to its colleges.

During the reform of the internal management system, the university adopted the following practices: The university administration maps out the internal organization structure, fixes the number of positions for each college or department and decides the number of faculty members or staff for each college or department, signs the contract of employment with all the faculty and staff, and clarifies the management duties and responsibilities between the university and its respective colleges. According to the university's



long-term strategic development plan and objectives, the university assigns tasks to each college or department at the beginning of each year and evaluates its accomplishments at the end of the year. The promotion and demotion of the college deans and the department directors, the allocation of the funds all depends on the results of the evaluation. The university administration takes charge of only planning, guidance, financial allocation, coordination, serving, supervision and evaluation. Within the national law and the university policies, the colleges have their own decision-making powers in the fields of teaching, scientific research, courses or major's construction, faculty members' allocation and employment, and students' management. The colleges are authorized to grant their faculty and staff the funds and allowances for teaching or scientific research at their own discretion.

### **3. Establishing the financial assistance system for the poor students**

To ensure that no students will drop out of school because of their financial difficulties, most of the educational institutions of higher learning have set up the financial assistance system for the poor students. The students are provided with financial support in the form of scholarships, bank loans, part-time jobs, subsidies and deduction of tuition fees. After entering colleges, poor students can get funds to cover their living expense by applying for national financial aid, which ranges from RMB ¥ 1500 (220 US dollars) to RMB ¥ 3000 (439 US dollars) annually. One year after poor students are admitted to universities, they can apply for the national Ji Zhi scholarships amounting to RMB ¥ 5000 (732 US dollars) each; or for scholarships available to all the college students, amounting to RMB ¥ 8000 (1,171 US dollars) each.

At the Zhejiang Gongshang University, 49 students got the national scholarship, 734 students got the national Ji Zhi scholarships and 2979 students got national financial aid in 2008. We provided RMB ¥ 1.8 million (263,550 US dollars) to poor students in the form of part-time jobs in our Work-Study Program. At the same time, the active users search for part-time jobs off campus for our students. Every year the Work-Study Center in the university provides over 300 part-time jobs off campus to our poor students. Since the enlargement in enrollment, no student has dropped out of school in the university due to financial difficulties.



#### **4. Strengthening international cooperation and promoting globalization on campus**

Educational institutions of higher learning in Mainland China have been going through rapid globalization and internationalization with its global economic integration. Zhejiang Gongshang University for an example, in the last 3 years, has made breakthroughs in its globalization drive. The University has signed Agreement of Cooperation with more than 40 universities in the United States, Britain, Canada, Australia, Japan, Korea and others, covering faculty and students exchange, scientific research and cooperation, joint academic programs and conferences, and mutual recognition of credits. In the Spoken English Promotion Project (SEPP) over 500 students from over 10 countries have been matched to the campus for a two or three-week visit. They were provided with free accommodation, free food, free local transportation, free local sightseeing and free classes. In return, the University has sent 93 short-term exchange students to overseas universities with the same terms and conditions. About 193 exchange students have been sent to the universities in Britain, the United States, Japan, Korea and Germany for one-year study with tuition fees waived. The number of long-term and short-term foreign students studying in our campus has amounted to over 500 in one year and has increased almost four times in the last three years.

#### **5. Strengthening scientific research and offering social services**

In addition to teaching, universities should undertake scientific research projects and provide social services to the communities to demonstrate the university's competitiveness and competence. Educational institutions of higher learning in Mainland China have achieved great success in scientific research and social services in recent years. For example, during the period of 2006-2008 the educational institutions of higher learning in Zhejiang Province obtained 36 national scientific awards accounting for 55.4% of the total in Zhejiang Province, and 316 Zhejiang Science and Technology awards accounting for 38% of the total in Zhejiang Province, 59 of which are the first prizes, accounting for 77.6% of the total first prizes in Zhejiang Province.

Zhejiang Gongshang University has also achieved great success in scientific research and social services. In the last 3 years, the University has undertaken 347 research projects from the provincial and ministerial level, 60 of which are national projects. The faculty members have published 5825 academic papers in domestic and international journals, and 683 academic books. The



research funds have grown steadily and amounted to RMB ¥190 million (US\$27.82 million US dollars) in the last three years. The University obtained one second prize of the National Science and Technology Progress Award, two first prizes of the Provincial Science and Technology Award, two first prizes and one award from Zhejiang Province for the outstanding academic achievements in the field of philosophy and social sciences.

The University professors were entrusted by the Ministry of Commerce and some enterprises concerned with the development of the Yiwu China Small Commodity Index (YIWUINDEX), the China Keqiao Textile Index (KEQIAOINDEX), the Shanghai Nonferrous Metals Price Index (SMMI) and the Beijing Zhongguancun Electronic Products Index, which release related information to the world and provide the government, business managers and consumers with information, data and statistics for their decision-making.

The College of Food Science has invented the first electronic tongue named “Smart Tough I” in China, which is a breakthrough in the research of the marketable electronic tongue. The College of Information and Electronic Engineering has set up the international standard for the new generation networking equipment named IETF ForCES in cooperation with some world famous enterprises such as Intel, IBM, Nokia and others, and they are one of the research departments in the invention of the world’s first next-generation router prototype system with some international relative research institutes. The router with the independent intellectual property rights is about to be put into production.

## **6. Managing universities by law**

With the deepening of the reform and opening up and the popularization of higher education in Mainland China, it has become an inevitable trend to manage universities by law. Only by law can universities be managed from disorder into good order, from arbitrariness to standardization so that we can build outstanding universities in order to better serve the society and to turn out higher-quality creative talents. However, there is still a long way to go before the rule by law in universities can be realized. The “rule by man” phenomenon still exists in varying degrees on campus. It still lacks set of effective operational mechanism for university students to protect their rights. The legal framework to regulate government investment, private investment and social investment in higher education is yet to be established. How to regulate the contract management system regarding the universities’ logistic services



remains a problem to be solved. All these issues need to be adjusted and regulated by law. Educational institutions of higher learning, the cradles for the younger generation. The college students are an important force to contribute to the construction of a country ruled by law. Managing the universities by law may imbue students in such a legal environment that no doubt would help them cultivate the sense of law, to build their faith in law so that they will conscientiously abide by law.

In recent years, Zhejiang Gongshang University has attached importance to the rule by law by working out a set of documents and regulations, such as “Measures to Manage the University by Law”, “Procedures to Work out Rules, Regulations and Documents”, “On Contract Management”, “On Hearing”, “On the Solutions to Faculty Disputes”. Moreover, the university has set up a committee of witnesses hearing and built the first witnesses hearing hall among all the educational institutions of higher learning in Mainland China. The operation and management of higher education is a great task to undertake in the context of popularization of higher education. We have a long way to go both in practice and in theory. Many issues have yet to be addressed and many problems have yet to be solved. We would very appreciate the valuable experiences, comments and advice from our peers and experts



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# ACADEME

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September 2010

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ISSN 1906-7275