

GRADUATE COLLEGE DEVELOPMENT PLAN TOWARDS 2015

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INTRODUCCION

CETYS University is committed to being at the forefront of the formation of individuals who participate in important ways in the development of the community, the region and the country; individuals who have achieved high level academic preparation and have the capacity to align themselves with global, technological, economic and social initiatives and emerging directions. Thus the University is very conscious of the need to engage the new and innovative ways in which education is being developed nationally and internationally. Furthermore, the institution recognizes that it becomes continuously necessary to promote new approaches and different ways of conducting business to be able to meet or surpass the projected enrollment and the quality of service that the University is committed to delivering and that students expect.

In the background to the Graduate College, explained in chapter one, we discuss the reason for the creation of the Graduate College, its organization, and expectation of forming the educational foundation for graduate studies and research. The educational model is also explained in this section.

In the second chapter, an analysis is undertaken of the masters and doctoral programs of the three campuses and their historical evolution, including currently enrolled students and alumni.

In the third chapter, we present the results of a survey that was administered to students and professors of the graduate programs between August and September 2006 and that also included the participation of government and business representatives. This survey asked for the opinions and recommendations of these participants regarding ways in which the CETYS Graduate College can address current and near-future challenges as it moves to achieve the goals of the Graduate Programs during the next nine years, goals that the participants themselves helped define.

Lastly, the fourth chapter describes the strategies that will need to be undertaken in order to achieve the goals established in the mission and vision described in the first chapter.

I. THE GRADUATE COLLEGE

History

The history of Graduate Studies at CETYS University begins on the Mexicali Campus around the mid 1980s with the “specialization programs” (intermediate degrees between the bachelors and masters) with the primary goal of helping CETYS undergraduate students obtain additional degrees. The first major program revision took place in 1992 and thus began the masters in business, engineering and psychology, with psychology only being offered on the Tijuana Campus. Since then, graduate programs have been offered on the three CETYS campuses (Mexicali, Tijuana and Ensenada). In 1997 we undertook a second review and implemented improvements to the graduate programs. By 1998 the doctoral programs were initiated, one in business and another in engineering, on all three campuses under a state-wide group modality. These programs were redesigned by the academic vice-president’s office with the assistance of professors from national and foreign universities such as Arizona State University from the United States, and the University of Toronto from Canada. In 2000 the Doctorate in Psychology was opened exclusively for the Tijuana Campus; this program was designed by the Psychology Faculty of this campus, and its operation is also managed by them. By 2003 the review of graduate academic programs was completed, which resulted in the revision of all the masters programs, and was centered on three fundamental goals: (1) Standardization, consisting in all programs having similar academic parameters (course hours, credits per course, educational model, type of professor, type of student, etc.); (2) Diversification, to increase the masters programs in accordance with the institution’s academic strengths and the interest and needs of the community; (3) Flexibility, to achieve that all masters programs have common courses,

specialization courses and optional courses. The result of this process was a new generation of masters programs that began operations on the three campuses in October 2004.

The management and operation of the graduate programs since their beginnings in the mid 1980s until 2002 was the responsibility of the director of the academic faculty on each campus, who in turn designated a professor from the same faculty as the Graduate Director for management and operation. This resulted in graduate programs being managed by numerous individuals simultaneously, even within the same campus. Although the graduate programs were successful in terms of acceptance by the public for which they had been designed, there was a serious internal integration problem among programs, which manifested itself in various ways, but primarily when trying to align common academic goals.

To resolve this issue and also in the process of looking forward, by January of 2004 the Graduate College was created within the CETYS University System with the goal of developing and managing all graduate academic programs, masters and doctorates, and also implementing applied research projects relating to its academic themes. To undertake this new challenge, a Director was appointed, whose office is on the Mexicali Campus, and the graduate directors of the three campuses became part of the Graduate College.

The creation of the Graduate College was part of a strategy of the president to create an academic entity within the CETYS System that would focus on the college educated people in the state, and that is managed with its own strategies and independent of the campuses. Also, this same entity was to systematically promote applied research among students and professors. All of this was to be

accomplished with a high quality, flexible educational model having an international emphasis.

To implement this strategy, a functional structure was established that is independent of the campuses but with some elements that pertain to the system level and others to the campus level. At the system level, a general Graduate College Director, 4 Academic Coordinator, 1 Strategic Projects Coordinator, and 1 Research Coordinator positions were established. At the campus level, 3 Operational Coordinator (one for each campus) positions were established, each with Academic Support Coordinators. The four academic coordinator positions were defined according to the diversity of the existing programs and the vision of the college to encompass the different needs and interests of the industrial, commercial and service sectors, both private and public. The academic areas are:

- (1) Business Administration
- (2) Engineering
- (3) Psychology and Social Sciences
- (4) Education

For the design, implementation and evaluation of its academic programs, the College defined a series of concepts under which its academic model and operation are supported. This could be accomplished because of the charge that was given to the College by the President of the CETYS System that included being able to define its own norms and rules of operation independent of the campuses. However, for the implementation of the processes it was deemed that the College must coordinate with the different service and support areas of each campus, and to integrate the best professors of the Undergraduate Schools. This

was done so as to take advantage of the experience of the best faculty at CETYS and also of the mechanisms and information systems that were already in place.

Mission since 2004

The Mission of the Graduate College is to be an academic unit of the CETYS University System reporting to the academic vice-president, that has the firm objective of developing specialists of the highest level in its various areas of specialization, as well as the design and development of applied research projects that contribute to the improvement and innovation of the organizations in which students and alumni work, and with that, support the improvement of the state, region and nation.

Vision since 2004

The vision of the Graduate College is to be the best higher education option in the nation to strongly promote social, economic and cultural development, via graduate programs that are linked to companies and organizations, where scientific research and technology are systematically used and focused on the solution of the problems of real organizations.

The Graduate College's commitment regarding scientific research and technology is part of the CETYS University Institutional Educational Mission and Vision which seek the generation of knowledge, through theoretical, methodological, technical and practical means that explore the real and objective phenomena to be able to transform them for the benefit of humankind.

According to the *Institutional Governing Research Plan* [3] the Graduate College has direct responsibility of the following subprograms: (1) Scientific Research, (2) Development of Research Capabilities, and (3) Educational Research.

Structure and Organization

Table 1. Structure and Organization of the Graduate College.

STRUCTURE OF THE GRADUATE COLLEGE			
TOTAL NUMBER OF PEOPLE (21)			
<p>COLLEGE DIRECTOR (1 full-time)</p> <ul style="list-style-type: none"> The Director's primary responsibility is to guide and oversee the work of the College, including presenting to the president and administrative vice-president an annual work plan and budget. The Director must seek research projects and develop special activities and events that enhance the image and positioning of the Graduate College in the greater community. The Director must establish external linkages, including collaborative agreements with governmental organizations and business groups. The Director must also report directly to the president and board members. 			
<p>ACADEMIC COORDINATOR (4 full-time)</p> <ul style="list-style-type: none"> Defines, manages and supervises the operation of the strategies of the academic programs under his/her responsibility. Coordinates student admissions. Supports the enrollment process. Decides which courses will be offered (annually and by trimester). Defines academic requirements for budgeting. Defines equipment requirements for budgeting purposes. Seeks and recruits professors. Provides external linkage. Academic guidance for students. Academic assistance for students. Promotes research projects. Evaluation of professors and learning outcomes. Curricular evaluation and improvement. 	<p>OPERATIONS COORDINATOR (3 full-time)</p> <ul style="list-style-type: none"> Design and management of the budget according to the requirements of the other co-ordinations. Manages and operates the graduate admissions process. Manages and operates the enrollment process. Manages and operates the student billing and payment process. Manages and operates the administrative hiring process pertaining to professors. Provides internal linkage. Manages and operates class logistics. Works with other campus departments and support areas. Spokesman of the Graduate College. 	<p>LINKAGE COORDINATOR (1 full-time)</p> <ul style="list-style-type: none"> Design and organizing of professional community and governmental linkage programs. Defines requirements for budgeting purposes. Manages event logistics. Manages and operates business relations. Manages and operates government relations. Manages and operates the IDE. 	<p>RESEARCH COORDINATOR (1 full-time)</p> <ul style="list-style-type: none"> Manages the presentation of proposals to research funding agencies. Manages research with external funds. Linkage with government, foundations and other research funding agencies. Conducts research projects. Represents the Graduate College in research meetings. Manages the publishing of research reports. Manages the evaluation of research.
<p>ACADEMIC SUPPORT COORDINATOR (4 part-time)</p> <ul style="list-style-type: none"> Reports directly to the Academic Coordinator. Conducts the same activities as the academic coordinator but within the context of one specific program. The programs that have a specific coordinator are: <ul style="list-style-type: none"> Doctorate in Business Doctorate in Education Masters in Taxes Masters in Environmental 	<p>ADMINISTRATIVE SUPPORT ASSISTANTS (4 part-time)</p> <ul style="list-style-type: none"> Each Operations Coordinator has one administrative support assistant. In the case of Mexicali, there are 2 administrative support assistants. 	<p>RESEARCH ASSISTANTS (1 part-time)</p> <ul style="list-style-type: none"> Currently there is one strategic project assistant who provides administrative support for projects. 	<p>PROJECT ASSISTANTS (1 part-time)</p> <ul style="list-style-type: none"> Currently there is one strategic research assistant who provides administrative support for research projects.

Masters Academic Programs.

Table 2. Academic Programs with their coordination support and faculty.

BUSINESS & ADMINISTRATION	ENGINEERING & APPLIED SCIENCES	SOCIAL SCIENCES & HUMANITIES	
		PSYCHOLOGY AND SOCIAL SCIENCES	EDUCATION
<ul style="list-style-type: none"> • Masters in Business Administration (MBA) with 11 tracks: <ul style="list-style-type: none"> ○ Finance ○ Human Resources ○ Marketing ○ International Business ○ Economic Development ○ High Level Management ○ Technology Management ○ Public Management ○ Quality ○ Supply Chain ○ Health Resources Management • Masters in Marketing • Masters in Human Resources • Masters in Finance • Masters in International Business • Masters in Taxes • Masters in Public Management • Masters in Economic Development 	<ul style="list-style-type: none"> • Masters in Science in Industrial Management • Masters in Science in Materials Management and Logistics • Masters in Science in Quality and Productivity • Masters in Science in Distributed Computer Systems • Masters in Science in Networks and Telecommunications • Masters in Sciences in Automation and Process Control • Masters in Science in Manufacturing Design and Processes • Masters in Science in Environmental and Sustainable Development 	<ul style="list-style-type: none"> • Masters in Psychology with 5 tracks: <ul style="list-style-type: none"> ○ Clinical Psychology ○ Family Therapy ○ Special Education ○ Organizational Development ○ Criminology • Masters in Criminology • Masters in Corporate Law 	<ul style="list-style-type: none"> Masters in Education
STUDENTS	STUDENTS	STUDENTS	STUDENTS
Mexicali 300 Tijuana 150 Ensenada 60 BCS 20 SONORA 0 TOTAL 510	Mexicali 150 Tijuana 90 Ensenada 15 BCS 0 SONORA 0 TOTAL 255	Mexicali 40 Tijuana 20 Ensenada 10 BCS 0 SONORA 0 TOTAL 70	Mexicali 120 Tijuana 100 Ensenada 40 BCS SONORA 40 TOTAL 290
ACADEMIC COORDINATORS	ACADEMIC COORDINATORS	ACADEMIC COORDINATORS	ACADEMIC COORDINATORS
1 full-time 2 part-time	1 full-time 1 part-time	1 full-time 1 part-time	1 full-time 2 part-time
FACULTY	FACULTY	FACULTY	FACULTY
TOTAL 50 CETYS 10 EXTERNAL 40 FOREIGN PROFESSORS 5	TOTAL 25 CETYS 15 EXTERNAL 10 FOREIGN PROFESSORS 4	TOTAL 16 CETYS 5 EXTERNAL 11 FOREIGN PROFESSORS 0	TOTAL 20 CETYS 12 EXTERNAL 8 FOREIGN PROFESSORS 0

Doctoral Academic Programs

Table 3. Academic Programs with their coordination support and faculty.

BUSINESS & ADMINISTRATION	ENGINEERING & APPLIED SCIENCES	SOCIAL SCIENCES & HUMANITIES	
		PSYCHOLOGY AND SOCIAL SCIENCES	EDUCATION AND VALUES
• Doctorate in Business	• Doctorate in Engineering	• Doctorate in Psychology	• Doctorate in Education
STUDENTS	STUDENTS	STUDENTS	ALUMNOS
Mexicali 28 (8 inactive) Tijuana 10 Ensenada 4 TOTAL 42 (5 graduated)	Mexicali 8 (all inactive) Tijuana 0 Ensenada 0 TOTAL 8 (1 graduated)	Mexicali 0 Tijuana 22 (all inactive) Ensenada 0 TOTAL 22 (5 graduated)	Mexicali 10 Tijuana 8 Ensenada 0 TOTAL 18
ACADEMIC COORDINATORS	ACADEMIC COORDINATORS	ACADEMIC COORDINATORS	ACADEMIC COORDINATORS
1 full-time	1 part-time	1 full-time	1 part-time
FACULTY	FACULTY	FACULTY	FACULTY
TOTAL 24 CETYS 2 OTHER UNIV. 22 NATIONAL 5 FOREIGN 21 Currently there are three cohorts/generations: Gen 2004, concluded 14 courses. Gen 2005, concluded 10 courses. Gen 2006, concluded 3 courses.	TOTAL 16 CETYS 1 OTHER UNIV. 15 NATIONAL 1 FOREIGN 14 Currently there are no scheduled courses, only dissertation guidance and follow up by student demand.	TOTAL 9 CETYS 4 OTHER UNIV. 5 NATIONAL 9 FOREIGN 0 Currently there are no scheduled courses, only dissertation guidance and follow up by student demand.	TOTAL 6 CETYS 1 OTHER UNIV. 5 NATIONAL 1 FOREIGN 5 Currently there is only one cohort/generation that began in January of 2006 and there are 5 scheduled courses.

Educational Model

The Educational Model of the Graduate College is based on the four essential aspects that the University has established for curricular development and design: (1) Academic Program Structure; (2) Differentiation Elements or “shades”; (3) Pedagogical Principles; and (4) Philosophical Principles. For a further explication and greater understanding of each of these components, please refer to the document titled Institutional Educational Model [1].

In this document the Graduate Educational Model and its implementation will be explained in a brief and concise manner. For a more detailed explanation, please refer to [2].

The Graduate Educational Model is based on application, which means there is a strong emphasis on professional practice. This is achieved by expecting professors to assist students in linking the contents of the courses with the students’ work environment and practice, while also helping them to learn how to develop their own knowledge based on the contents of the particular course. To achieve this, the professor designs activities so that the students may apply the 4 pedagogical principles: learn to learn, learn to do, learn to coexist and learn to be. It is expected that based on individual and group work that is guided by the professor, the student will be able to identify, assess, and solve problems in his/her own specialized and professional context, as well as be able to articulate and discuss his/her ideas with others. Our model takes into account that our students are working adults and that their educational interests come primarily from their work experience. At the same time, our model requires that our professors must have ample knowledge and experience relevant to the

courses they teach and also be knowledgeable of educational/teaching methods so as to be able to function as a consultant and professor to the students.

The focus of the courses is centered on the activities that the students develop, with faculty guidance and review, inside or outside of the classroom. The faculty use teaching-learning systems that are based on innovative practices, such as case studies, simulations of organizational decision making, conferences, project development based on the student's work experience, and always emphasizing teamwork and group activity.

Our model also establishes three differentiation elements or "shades": applied research, internationalization and continuous improvement. To promote these nuances throughout the model, we hire professors with experience in research as well as professors from foreign universities, and a methodology of personalized follow-through with students so they receive much valuable feedback.

A substantial percentage (at least 33%) of the faculty who teach in the masters programs have a doctoral degree in their area of expertise as well as outstanding research projects and publications and/or consulting projects in their fields. The faculty that do not have a doctoral degree, have a masters degree at the minimum and outstanding professional experience in high level administrative and specialized jobs, and also have the ability to transmit/teach their experience and knowledge.

In the case of our doctoral programs, 100% of the professors have a doctoral degree and extensive experience in research and publications.

II. ANALYSIS OF THE GRADUATE PROGRAMS

CETYS University currently offers masters and doctoral programs on its three campuses distributed along the lines of the same academic fields that are part of the undergraduate programs, which are: Engineering, Business Administration, Social Sciences and Humanities. The graduate programs have been designed and structured according to the interests and opportunities that have been identified among university graduates and major employers in the region.

This market of professionals is made up of undergraduate alumni from different universities, private and public, of Baja California, San Luis Río Colorado and southern California. Also, there are interested professionals employed at other universities of the region. The primary reasons that motivate our graduate students to pursue graduate degrees are:

- To increase their educational level because they aspire to better job opportunities.
- To take advantage of educational opportunities offered by the company for which they work.
- Because CETYS University is the best alternative for graduate education in Mexico's northwest.

Enrolled Students

Enrollment in the Graduate College of CETYS System was fairly stable and without much variation between 2000 and 2004, however, in 2005 enrollment increased dramatically so that by 2006 it was already above the projected

enrollment for 2010, as noted in Chart 1 below. Enrollment on each campus varied, largely due to the different physical capacity of each campus and the educational demands of the region.

Chart 1. Graduate enrollment in the last trimester of each year (2000-2006)

Campus	2000	2001	2002	2003	2004	2005	2006
Mexicali	352	385	403	401	345	507	638
Tijuana	175	202	168	194	210	355	433
Ensenada	34	20	8	16	57	99	122
Total	561	607	579	611	612	961	1193

Source: Basic Statistics/ 2010 Plan

The enrollment increase in the last two years coincides with the establishment of the Graduate College. A major factor that determined student increases in these last few years was the diversification of new programs which have been developed in response to the current employment demands for better academic preparation; in 2004 there were 14 masters programs in the entire CETYS system, in 2005 this was increased to 23 and the next year to 25. In regards to doctoral level education, four doctoral programs have been initiated since 1998.

All graduate programs have been designed and opened in response to the needs of the professionals and major employers of the region, and in consideration of the strategic lines defined in the Baja California Development Plan. All programs are designed with the assumption that students are working professionals in local industries and organizations, and that these are individuals who require new knowledge and skill for working in better, more efficient and innovative ways, such that they will have greater opportunities for growth and promotions in the companies in which they are working or to be able to seek new employment opportunities, including the creation of their own businesses.

The Graduate College was structured along three main academic areas (Administration, Engineering and Social Sciences) so as to integrate all degree programs and to cover all professional disciplines in these areas. An academic coordinator was designated for each of these areas; his/her main responsibility is to manage all academic aspects of the actual programs, as well as to seek and assess opportunities for designing and opening new programs.

When a coordinator detects/identifies an opportunity for a new graduate program, he/she appoints a team of three experts to analyze and design the new program, a process that takes approximately six months. Once the program is designed, it is passed through the appropriate internal channels of CETYS University for review and approval. The Office of Education Directive is charged with undertaking the process for requesting external governmental authorization, and only after a proposed program has such authorization is it opened to the public.

An academic program may be closed when there are not enough new students to make it feasible and/or when the coordinator determines that the program needs to undergo a major review and revision. In the event that a program needs to be closed, the Graduate College informs all current students in that program of this fact, and well as of the fact that all courses they may still need to take to complete the program will continue to be offered in a normal fashion until they complete the program.

The percentage breakdown of student enrollment in the masters programs in the three academic areas is as follows:

- Engineering, 22 %

- Business Administration, 46 %
- Social Sciences and Humanities, 32 %. (includes Psychology, Education and Law)

There are currently 90 students enrolled in the doctoral programs of which 38 are inactive (they are not taking courses) and 52 are active. The breakdown by program follows:

- Engineering Doctorate: 8 inactive students.
- Business Doctorate, 42 (34 active students, and 8 inactive)
- Psychology Doctorate, 22 inactive students.
- Education Doctorate, 18 active students.

A student can be “active” or “inactive”. The student is considered as active when he/she is enrolled in a regular course during the actual quarter period, and the student is considered inactive when he/she is not enrolled in a regular course during the actual quarter period. A student also is considered inactive when he/she has completed all program courses but has not yet completed the thesis work for graduation (in the case of programs with a thesis or dissertation requirement).

Alumni

Currently there are a total of 2605 alumni of the entire Graduate College of CETYS University System. The relative number of graduates by campus has been maintained constant, as can be observed in the following chart:

Chart 2. Total number of accumulated graduate alumni by campus

Campus	2004 ¹	2005 ¹	2006 ²
Mexicali	1357 (56.8%)	1447 (56.8%)	1474 (56.6%)
Tijuana	727 (30.4%)	780 (30.7%)	801 (30.7%)
Ensenada	303 (12.8%)	317 (12.5%)	330 (12.7%)
Total	2387 (100%)	2544 (100%)	2605 (100%)

Source: 1. Direction of Institutional Effectiveness. CETYS Basic Statistics August-December 2004 and 2005. 2. Direction of Institutional Effectiveness. CETYS Basic Statistics January-July 2006.

However, looking at alumni by campus during the past three years shows a different picture, especially in the case of Ensenada:

Chart 3. Number of graduate alumni by campus

Campus	2004 ¹	2005 ¹	2006 ²
Mexicali	48 (59.2%)	50 (63.3%)	27 (44.3%)
Tijuana	26 (32.1%)	27 (34.2%)	21 (34.4%)
Ensenada	7 (8.7%)	2 (2.5%)	13 (21.3%)
Total	81 (100%)	79 (100%)	61 (100%)

Source: 1. Direction of Institutional Effectiveness. CETYS Basic Statistics August-December 2004, and 2005. 2. Direction of Institutional Effectiveness. CETYS Basic Statistics January-July 2006.

There are two censuses for gathering statistical data of student enrolled in all graduate academic programs, students graduated, and other important indicators: one in the spring and one in the fall. These censuses are conducted by the Direction of Institutional Effectiveness of CETYS University, and generate two semester reports of statistical indicators, one for January-July and the other one for August-December. The data obtained for the graduate programs conform to the following rule: for the first semester, January-July, the data are obtained from the January-March quarter period, and for the second semester, August-December, the data are obtained from the October-December quarter period. This rule was established because these quarter periods are when enrollments are generally larger relative to the others.

III. GRADUATE COLLEGE DEVELOPMENT PLAN TOWARDS 2015

The Vision of the Graduate College *Towards 2015* was the result of a series of activities; the two most important were:

- Review of the *National Graduate Development Plan* issued by the Mexican Graduate Studies Council (COMEPO) in October of 2004.
- Participative sessions with CETYS University students and professors as well as with representatives of businesses and organizations.

Review of the National Graduate Development Plan

According to the *National Graduate Development Plan*, there is an international concern among the institutions that offer graduate programs to attend to and improve the following:

- Ways of institutional organization,
- The orientation of the programs,
- Quality criteria,
- Requirements for the integration of the faculty,
- Inter-institutional and international cooperation,
- Incorporation of new learning models,
- Regulation of credit equivalency to facilitate mobility, and
- Regional politics.

It is important to note that COMEPO identified some global tendencies that take graduate colleges to new scenarios, which are described as follows:

- The participation of new institutions in the development, improvement and training that were before exclusive to universities, along with the fact

- that there are currently other types of organizations like corporate universities and training centers of large companies at the graduate level.
- The incursion of organizations that are apart from universities in certification processes that surely impact higher education institutions in the development of their graduate programs.
 - The new vision of higher education as a permanent process. This concept of “education for life” (life-long learning) was introduced by UNESCO, which obligates graduate programs to give more value to preparation that goes beyond the academic graduate programs.
 - The technological advancement of information and communication in the new educational models, like distance learning and online education, where space and time constraints disappear.
 - Compatibility between preparation and mobility, both international and work related, meaning the free transit of professionals at an international level.
 - The development of interdisciplinary doctoral programs, for example, the advancement of science is breaking the boundaries between various traditional disciplines.
 - Development of new regulations that are consistencies with the new requirements of flexibility and innovation.

Results of the participative sessions

With the purpose of better identifying and defining the strategies that the Graduate College must undertake to achieve continuous development of its masters and doctoral programs, the perceptions and opinions of those who are involved in this process of preparing high level professionals were gathered and analyzed. These opinions were gathered through meetings held during the months of August and September 2006 with graduate students, professors and representatives of the business, industry, and governmental sectors.

Student perceptions

The purpose of consulting with graduate students was to obtain their impressions about how they would like to see the Graduate College move towards 2015 and what aspects should be addressed to achieve their vision. Following are the most relevant suggestions received from this group:

- Graduate programs whose professors are internationally recognized.
- Extensive research applied to the productivity of the region and with an international outreach.
- More options in graduate programs.
- Professors with professional work experience beyond the academy.
- Scholarships for graduate students.
- Greater foreign student enrollment.

Pertaining to world tendencies perceived by students, some of the recommendations made that deserve attention follow:

- Greater involvement of students in research and its application.
- Development of communication and negotiation skills, particularly for the promotion of new ideas and concepts.
- Integrated preparation: values, professionalism and community services.
- Development of management skills and empowerment.
- More dynamic classes with modern educational techniques.
- Higher scientific and technological development.

Professor perceptions

Some of the ideas of professors regarding how they would like to see the Graduate College move towards 2015 follow:

- A building exclusively for graduate programs.
- National and international acknowledgement/recognition of professors.
- Publishing in well-known, prestigious journals.
- Creation of a graduate research center.
- Agreements with prestigious universities.
- Programs with course options that are aligned with the needs and requirements of business and industry.
- Linkages with universities worldwide and with the option of online courses.
- Annual Graduate College symposium.
- Strong linkages among companies, community and the university.

The following list presents the issues that professors believe need to be addressed relative to the tendencies perceived in the economic sectors:

- Social responsibility.
- Linkage between theory and practice.
- Research skills.
- Project-based learning.
- Self (independent) learning.
- More work in class directed towards application projects focused on the solution of real, current issues and problems.

Business and government sector perceptions

Besides business, representatives of government were also consulted because both sectors are important employment sources for our graduate students. With regards to the 2015 vision, the following relevant ideas were identified:

- Being in the forefront and linked with prestigious and important universities.
- Linked with companies for the development of new programs.
- Absolute involvement with new technologies and tendencies.
- National leader in the preparation of professionals.
- Academic programs that are accredited by international educational organizations.
- Installations (laboratories) that allow practical training as well as technological development.
- An institution that develops a vision that anticipates future needs.

Regarding the actions that should be taken by the Graduate College to respond in an opportune manner to the impacts from the economic sector, business and government representatives indicated the following:

- Project application.
- Values and ethics in business.
- Business development.
- Technological development.
- Linkage between school and industry.
- Modern manufacturing methods.

Goals and Objectives *Towards 2015*

This section describes in general terms the main goals of the Graduate College *Towards 2015* plan, they were defined in the context of three analytical dimensions: (1) Review of the *National Graduate Development Plan* for Mexican Institutions; (2) Results of the participative sessions; and (3) Analysis of our actual situation relative to our organizational structure and student population (all of these were explained in the previous sections).

These goals can be understood as the principle strategic directions our Graduate College will take during the next 9 years. It is important to comment that all of these goals (and objectives) will be reviewed and evaluated annually, and that necessary adjustments will be made along the way.

- **To achieve a population of 1500 students by 2010 and 1700 students by 2015.** The distribution of students should be 45% administration programs, 25% engineering programs, and 30% social sciences and humanities (at most 3% enrolled in all doctoral programs).
- **To open a new graduate program every two years for each of the following areas:** (1) administration; (2) engineering; and (3) social sciences and humanities.
- **To enhance our educational model.** Increase the academic support to students and the number of external professors in each graduate program. For the next 9 years the goal will be to ensure that each program has one academic coordinator (partial or full time) and preferably individuals with doctoral degrees. Additionally, our goal is to increase the number of external professors with doctoral degrees teaching in masters program from 33% to 50%.

- **To integrate applied research in all masters programs.** Promote the realization of applied research projects among our students and the companies where they are working. Additionally, we would like to publish an annual journal of applied research.
- **Internationalization of the Graduate College.** We would like for all of our students to have at least one international experience during their graduate program. Thus, we will promote activities such as international student interchanges, summer courses in foreign universities, foreign professors teaching in our regular courses, and special conferences with foreign speakers.
- **Infrastructure.** Enhancement of our infrastructure (buildings, classrooms, labs and technological tools), all of these primarily in support of programs and other academic activities as well as administrative needs. To accomplish this, we are going to integrate these initiatives with the infrastructure initiatives of each campus.

IV. STRATEGIES FOR THE DEVELOPMENT OF THE GRADUATE COLLEGE

The strategies that are presented and which must meet the general goals of this plan, e.g., offering new high quality academic programs and promoting scientific and technological research, are based on five general governing elements:

1. **Academic Programs:** Strategies focused on ensuring that our programs are flexible, relevant and of sufficient international breadth, with continuous improvement and that employ information technology.
2. **Human Resources:** Strategies focused on maintaining highly qualified professors offering the best programs possible and for achieving national and international certifications and accreditations (CONACYT and WASC).
3. **Sustainable financing:** Strategies focused on achieving a sustainable financial model that includes tuition costs, enrollment, marketing and funds for scholarships.
4. **Scientific and technological research:** Strategies focused on the *Institutional Governing Research Plan*, making applied research systematic.
5. **Services:** Strategies focused on the improvement of infrastructure, information technology, work practices, and linkages with the public and private sectors.

These governing elements generate the following strategic directions, allowing the design of operating programs where the specific activities are detailed along with budgets and timelines:

- Articulation and integration of the campuses.
- Strengthening of educational quality throughout the system.
- Creation of new spaces for the graduate programs.

- Promotion of research and technological development.

1. Articulation and integration of the campuses

Consolidate and unify the graduate programs of the three CETYS University campuses into one Graduate College, reporting to the President, so as to optimize functionality and operation, and in this manner enhance the enrollment and retention of students. The following actions are planned:

1.1 Review of the organizational structure of the graduate programs.

- a. Define the ideal future structure for the Graduate College, independent of the existing structure.
- b. Review and revise the College's operations manual clearly defining the primary responsibilities of all positions, such as: the Director of the College, program coordinators (business, engineering, psychology, social sciences and humanities), research and strategic coordinators, and administrative support.
- c. Hiring academic coordinators for specific masters programs.

1.2 Homologation of programs in the three campuses.

- a. The three campuses will offer the same graduate programs, although not all programs will be in operation at all times on each campus. This will result in the optimization of resources, greater student and professor mobility, higher quality of services, and image enhancement.

- b. The programs of the Graduate College currently offered correspond to the academic fields of Business Administration, Engineering, Psychology, Social Sciences and Humanities.

1.3 Reconfiguration of the programs. It is necessary to review all academic programs every four years to keep them on a common track model and continuously improve them according to academic and technological innovations and the needs of the region. Specifically:

- Review the efficiency and convenience/accessibility (to students) of the graduate programs.
- To maintain curricular improvement, it is necessary to evaluate programs, taking into account alumni follow through and employer opinion surveys.
- Promote the mobility of students, faculty and recruiters for the graduate programs among the three campuses.

1.4 Innovation and regulations management. Promote greater innovation in the Graduate College as well as the review and improvement of policies and practices according to new requirements:

- Elaborate new proposals for integration that include new modalities as well as innovative options for the graduate programs.
- Develop of new ways to obtain degrees.

- Establish a virtual library of scientific and technological journals and other publications.
- Participate in meetings with relevant organizations (SEP, CONACYT, ANUIES, FIMPES, etc.) to help develop new regulations.
- Create a committee that is responsible for the review and improvement of the Graduate College's policies and procedures.

2. Strengthening of educational quality throughout the system

To be an educational institution that offers the highest standards of quality, it is necessary to have the best possible professors, modern and efficient infrastructure, and quality student services.

2.1 Faculty. The following aspects are to be considered:

- Creation and consolidation of academic units whose focus is research and not only teaching.
- Establishing academic and research networks.
- Meet (preferably surpass) FIMPES's requirements regarding the percentage of professors with a doctoral degree in graduate programs.
- Establish mechanisms to ensure the linking of students with industry and the development of research projects.
- Promote the participation of professors and students in scholarly gatherings such as symposiums, workshops, and other national and international scholarly meetings, and also promote that faculty and students publish their work.

- Promote commitment to the Graduate Educational Model of CETYS University.
- Provide professors technologically advanced tools to facilitate and enhance their teaching and research.
- Promote faculty development in the competencies required to improve the learning process and outcomes for their students.

2.2 New educational approaches. Incorporation of new and more flexible educational approaches that are learner-centered. Particularly:

- Development of social programs that are linked to the learning process and focused on achieving holistic student growth and development.
- Emphasis in formative aspects that promote effective learning, group and teamwork, development of initiative, development of specialists and applied researchers capable of innovating and putting into practice their current knowledge.

2.3 Student attention. To achieve the desired exit profile for the graduate student, the following aspects are to be considered:

- Individual and group attention to students, such as tutoring, guidance, and mentoring.
- Strengthening of academic interaction, such as visits to companies where students work.
- Promote a spirit of research throughout the Graduate College.
- Promote academic interchange.
- Strengthening of CETYS pride and spirit.

- Adaptive scheduling according to the needs and interests of the student.

2.4 Infrastructure. It is necessary to enhance and modernize the current support infrastructure for faculty and students for being in accordance with technological advancement pertaining to installations and equipment for teaching, research, and other academic activities (laboratories, workshops, pilot plants, language centers, computers, etc.). In particular, the information technology backbone of the institution and assuring sufficient and modern physical spaces will require attention.

2.5 Differentiating Values. To ensure that the alumni of the different levels of the graduate programs possess a series of competitive characteristics that are more attractive and conducive for their professional development in the productive and social sectors. This can be achieved through the following actions:

- First of all, with the formation of a body of professors that who highly qualified and the design of aggressive financing plans.
- Seeking strong linkages with companies that are receptive to our services and experiences.
- Orienting the graduate programs to the real needs of the region. In order to do this it is necessary to conduct a market study of the professional needs of the region, needs in which CETYS can or wishes to participate through the offering of graduate programs.
- Strengthening linkages with universities, research centers, and any other entities that represent benefits for the educational and professional development of our students. It is important to consider and assess current agreements with national and international institutions.

- Establish a data base of alumni and organizations that permits the follow-up of alumni. Thus, agreements can be made with companies to offer them specialized training programs for the alumni that are in their workforce.
- Promote institutional commitment among alumni. It is important to conduct a follow-up study regarding the development of alumni as well as to maintain ongoing communication with them to facilitate collaboration in the development of research projects, as well as to invite them to participate in the College's and University's academic events.
- Promote internationalization in the academic programs via double diplomas, hiring of foreign professors, student and faculty interchange, joint research, study abroad, summer internships, etc.

3. Enrollment and Outreach

We intend to develop promotional activities that guarantee the consolidation and extension of our enrollment, and guarantee a 5% annual growth. This expansion must attend to the primary and emergent development areas. To achieve this, the following actions must be taken:

3.1 Consolidation of enrollment. It will be necessary to improve and design programs that are flexible and practical, as well as to establish a corporate Internet image where the presentation of these programs for the three campuses is standardized. The communication between CETYS and its graduate students must be strengthened.

3.2 Publicity and marketing. A publicity and marketing plan will be formulated which is specific to the reality of the region. Also, active

integration of APEC in the promoting of the graduate programs is required. Something that would facilitate this initiative would be a periodic bulletin in which alumni, students, professors and administrators could express themselves.

- 3.3 Strategic Alliances.** It is important and prudent to strengthen the interchange with national and international higher education institutions and research centers, as well as to establish agreements with companies that employ our graduates.
- 3.4 Focus of research.** Development of the graduate programs according to local and regional needs.
- 3.5 Needs of regional education.** Expanding educational offerings but always considering the different cultural interests and needs of the community.
- 3.6 Graduate mobility.** Development of graduate programs, particularly of importance and relevance to underserved populations and areas.

4. Promotion of research and development

The *Institutional Governing Research Plan* describes in detail the structure of the research system of the University, including its fundamental policies, its goals, and the participation of its different academic and administrative areas in various operational subprograms. The Graduate College considers within its responsibility the following research goals:

- 1) Promote research as a strategy for the generation and acquisition of knowledge throughout the student's preparation.
- 2) Promote, finance and organize the development of research projects based on the four subprograms that are established in the plan.
- 3) Promote research programs that are consistent with social needs, the curriculum, and the emphases of the programs as well as the interests of the faculty involved.
- 4) Promote and support institutional research that is relevant, organized and collaborative.
- 5) Publish research and when applicable, to obtain the corresponding patent. In general, make known to the larger society the results of research that is conducted in and through the Graduate College.
- 6) Interchange of research scholars with other national and international universities or research centers. Also, participation in various research networks as well as research conducted by business and industry.
- 7) Participation in projects that are undertaken by regional, national, and international organizations.
- 8) Seeking alternatives for the improvement and development of technology with the business, cultural and governmental sectors.
- 9) Promote academic collaboration in both intra- and inter-institutional research programs and projects.

Conclusions

The Graduate College has already started implementing this aggressive but quite feasible strategic plan, *Towards 2015*, which first and foremost focuses on academic quality and its improvement. Other major goals include starting new programs that continue to respond to the region's interests and needs, enhancing the College's applied research capabilities, increasing enrollment at a modest and manageable rate, establishing additional linkages and partnerships with both institutions of higher education in Mexico and abroad and with business and industry, and focusing on upgrading the College's infrastructure, including facilities and technology.

Towards 2015 charts the Graduate College's direction for the next nine years. Achieving all of the goals outlined in this strategic plan is an ambitious undertaking but clearly an undertaking worth pursuing. Furthermore, it is an undertaking to which both the Graduate College and CETYS University are fully committed.

CETYS University and the Graduate College look forward to fully implementing *toward 2015* and to monitoring and assessing its progress annually and, of course, to making adjustment along the way as necessary.

References

- [1] *Institutional Educational Model*. Internal Report. Academic Director. CETYS System.
- [2] *Graduate College Educational Model*. Internal Report. Graduate College. CETYS System.
- [3] *Institutional Governing Research Plan*. Internal Report. Graduate College. CETYS System.