A STUDY ON ORGANIZATION FOR FUTURE UNIVERSITIES

Asst. Prof. Dr. Ergun Demirel

Piri Reis University, Tuzla Istanbul/Turkey

edemirel@pirireis.edu.tr

Abstract: The role, vision, mission, objectives and tasks of universities are changing to meet the new requirements of society in the 21st century. Although education is the primary mission of universities, application of science and technology in support of businesses and industries has become quite important as well. The innovation which is the driving element of the economy also shapes the structure of the universities.

Although some major changes have been made in the organization and management systems of the universities in the last quarter of the 20th century, most of the universities are still insistent to keep their orthodox structure.

This study aims to investigate possible organization and management systems approaches to balance the education functions of the universities with other challenging missions in particular the research activities in support of the economy and society.

Key Words: Future University; Organizations for University; Management Systems for the Universities; Innovation and University; The role and mission of the universities

INTRODUCTION

The world is changing rapidly. The high technology makes the world such a small town which everyone may reach the others easily. The new world order has also changed the requirements and expectations of society. This new situation started to affect strongly the social life, economy, politics and technology. The role, vision, mission, objectives and tasks of all institutions are also changing to meet the new requirements of society in the 21st century. The 19th and 20th centuries were the "invention era" but the 21st century will probably be called as the "innovation era". Innovation needs continuous changes and challenges, and it needs more dynamic improvements in all fields of life to be successful in a challenging world.

The education systems are also changing. The primary and secondary education system is not compatible with the 20th century. The tertiary education institutions, universities are also in a transition period to adopt themselves for new expectations. Although education is the primary mission of universities, application of science and technology in support of business and industry has also become quite important. The innovation which is the driving element of the economy also shapes the stricter of the universities.

Although some major changes have been made in the organization and management systems of the universities in the last quarter of the 20th century, most of the universities are still insistent to keep their orthodox structure.

The number of the research centres and institutes is now more than academic units on the organization charts of the most universities. Universities are now playing a major role to support technological improvement of society.

The university is now an important element of the economy. In order to survive in today's competitive environment of the economy, the business and industry need more support from universities. Today the cooperation between university and industry is a vital issue for both parties and they are reorganizing themselves to create better opportunities in the challenging global economy.

Ernst & Young's made a study on view is that the higher education sector in Australia. This study covers undergoing a fundamental transformation of the universities in terms of its role
in society, mode of operation, and economic structure and value. To explore these themes and future directions, they conducted an industry-wide study of the main forces impacting
the higher education industry globally and locally, and the opportunities, challenges and implications for Australian universities (Ernst & Young, 2012).

Today universities should improve a Strategic Plan and the following questions need to be answered to achieve that;

- Is our current model going to be successful in the future or needs proof
- Can our organisation survive and thrive in its current business model and mode of operation?
- Where to play?
- What student, industry or other customer segments should we focus on?
- What will be our point of difference and how do we sustain this?
- How to play?
- Who should we partner with?
- What workforce capabilities and structures do we need?
- How do we optimise our assets?

All above mentioned issues are closely related to the organization and management system. In order to establish a new university model to meet the requirement and expectations of the future, firstly we need to review the classical university organization and modus operandi.

2. RESEARCH METHOD

The aim of this study is to do a research on the organizations and management systems of the universities to fulfil their existing and future mission and to define key areas which may introduce some solutions.

The research is conducted in three steps. In the first step it is intended to understand the new role and missions for the universities mission.

The eligibility of the existing organization system to meet the existing and future missions will be discussed in the second step under the organization and management principals. The problem areas including human factor are clearly defined and summarized as findings at the end of this step.

In the final step the findings of the second steps are categorised, grouped and associated if possible and a further study has been made to formulate possible/probable solutions to be proposed.

3. EXISTING SYSTEM

The following standards are considered essential elements to identify the existing organization and management systems of the universities;

- Mission, aim and objectives
- Governance and administration
- Management of quality assurance
- Learning and teaching
- Research
- Student administration and support services
- Financial planning and management
- Institutional relation with the community

The main mission of universities is education and training. Research is the second mission of them which also covers relations with the community. The aim is to deliver the upper level knowledge to the community and provide research in support community in particular for science and technology. The one important objective of the tertiary education is to provide qualified manpower for the business and industry.

The universities can be classified in two main categories which also affect their organization and management systems. These are state and private universities. The state universities are under the control of the government and serve for government policies. Although they may have some level of autonomy the state universities have a limited manoeuvre freedom due to limited funds. The private universities are also operated in accordance with government established rules. They have more freedom but are limited by economic considerations which are vital for them to stay alive.

The organization and management systems of the state universities are generally stereotype throughout the country. The organization is generally orthodox and based on academic departments and some additional units for research, post graduate studies and continuous education. There is a significant effect of the government policy

and bureaucracy on the system which hampers any improvement attempts. Although they have been led by the academics, their role is very limited in decision process.

The private universities are led by the board of trustees. The board members are generally the founders or relatives and ex-high level managers from the private or government institutions and they are generally well aware of the existing policies and economic considerations but not so well on the procedures, rules, regulations and working styles of the academic world. Their decisions on the management application are generally well designed but hard to apply due to challenges with the rules and regulations of the universities.

The government effect in the state universities and shareholders effect on the private universities are generally the main drive which shapes the strategy and plans and sometimes create problems when the other layers of society such as the government, local authorities, NGOs etc involves. Sometimes this underestimated outsider factors badly affect the plans and programmes.

The existing organizations of the universities are based on functions such as academic units, research and innovation centres and administrative support units. The academic units are mainly organized as faculties or postgraduate institutes but the number of the faculties has been extremely increased end too many derivatives from a major science are created. The number of the faculties are now beyond the control capacity of a vice rector responsible for academic units. Although the optimal number varies from one firm to the next, many management writers agree that top management should directly supervise no more than four to eight people (Boone and Kurtz, 1987). This situation also hardens the coordination between the academic units.

The research units are named as research, innovation, technology transfer centres or institutes and sometimes techno parks. The number of these units is increasing and the both internal and external coordination becomes difficult. Additionally most of these units are headed and/or manned as twin mandate or part time and that reduces the effectiveness of these research units

Learning and teaching methods have drastically changed. The new system is based on satisfaction of learning outcomes which force both students and lecturers spend more time for independent studies based on researching different sources rather than classical course books. More visual aids are used during guided learning hours and laboratory hours are increased. On-the-job training becomes an important element of learning and teaching under the control of academician. More radical changes are expected in the future decade following new improvements in technology, in particular IT.

A handful of new surveys, outlined today by TIME magazine , show that employers are challenged by much more than just finding talented software developers and engineers. In fact, a lack of interpersonal skills like communication, collaboration and creativity, and a disregard for punctuality, appearance and flexibility seem to be much bigger problems among the latest crop of entry-level job candidates (Baverman, 2014). Universities also need to improve to produce a solution to fix this crucial problem.

The research activities were a secondary mission of a university historically. But today it becomes an essential role competing with the education. The research and education are now inseparable functions in particular for postgraduate studies. The number of the research units in university organization is more than academic department and lecturers are spending more time for research rather than teaching. The research activities are also increasing the quality of the lectures delivered.

The lifelong learning and new teaching methods have changed the demography of the students. The young and older students are taught in the same classrooms. The teaching hours enhanced out of the working hours. E-learning needs too much tutor support. The libraries became learning resource centres with digital information availability and serving 7 days 24 hours uninterrupted. All these factors enforce universities to change their existing structure and operating system of the student administration and support services.

The number of the private universities is significantly increasing against the state universities. These universities need a perfect financial system to enhance their capabilities and more importantly to survive. The state universities are not able to improve themselves depending only state provided funds and they also look for new financial support by enhancing their cooperation with business which provides financial sources for both sides

The quality assurance became rather important after the 1980s. Approximately all of the universities are looking for accreditation by an internationally reputable accreditation body and also an awarding body to facilitate the employment of their graduates in the related sectors. The accreditation also facilitates cooperation and student/lecturer exchange among the universities.

Most of the improved even improving countries have established their vocational qualification systems which cover accreditation and awarding procedures. This situation enforced the universities to establish links with awarding bodies which is closely related to the business world. Thus the programmes delivered at the universities became very closer to the real world applications.

Most universities are assuming a critical role in the techno parks established by the industry and companies are establishing permanent liaison offices in the universities to ensure best coordination and cooperation. An effective on-the-job training system should be matched to academic system to understand existing practices, procedures, applications in the real world. The part time or even short period full time deployment of some academicians in the industry should also be considered to update the existing information and knowledge.

4. ANALYSES OF THE FUTURE ROLE AND MISSIONS:

In many different studies the roles and missions of the universities are discussed and introduced. The significant findings in these studies are described in the following paragraphs.

The Bologna Declaration is the most credited and recognized document concerning higher education policies and applications. The declaration states the following objectives:

- adoption of a system of easily readable and comparable degrees;
- adoption of a system essentially based on two main cycles, undergraduate and graduate;
- establishment of a system of credits – such as in the ECTS;
- promotion of mobility by overcoming obstacles to the free movement of students, teachers, researchers and administrative staff;
- promotion of European co-operation in quality assurance;
- promotion of the necessary European dimensions in higher education.

The first European-level 'Work Programme for Education and Training 2010' is agreed in 2002 covering next ten year (European Council, 2002). In this plan for modernising education systems in EU confirmed the three overarching objectives adopted in 2001: "improving quality and effectiveness"; "facilitating access"; and "opening up national education and training systems to the world" (Education Council, 2001). As a follow-up the European Commission has extended its involvement in the higher education sector by two additional routes: firstly, "through its research policy" — as an aspect of the EU's Lisbon Strategy for growth and jobs — and, secondly, by supporting "institutional and structural" reform of the tertiary education sector under the intergovernmental umbrella of the Bologna Process (Keeling, 2006).

The EU Heads of State and Government, meeting in Lisbon for the Union's Spring Council of 2000 pledged to work towards making the EU the most 'dynamic knowledge-based economy in the world' by 2010 (European Council, 2000). This new strategy (Lisbon Strategy), also made an emphasis on the "research" activities in the community through the EU Lisbon Strategy for "economic growth and employment the EU". This new policy objective stimulated the European Council in Barcelona in 2002 to commit the EU to the goal of raising overall expenditure on research and development to 3% of GDP by 2010 (European Council, 2002b). These strategy documents recognised higher education institutions among the 'key stakeholders' in European research: according to the Commission, European universities employ one-third of European researchers and produce 80% of fundamental research in Europe (European Commission, 2005). In its Action
Plan, the Commission stressed the need for coherence in research policies, for increasing public support and resources for research and for improving the framework conditions for research and development in Europe in order to contribute to the Lisbon goals.

All above mentioned facts may be resumed as follows:

- Universities have a crucial role for "economic growth and employment the EU" by the way of "research",

- Universities are now a "stakeholder" of the economy and business and that require further cooperation and cooperation among all concerned parties,
- International cooperation and collaborations is the key factor to be successful in the challenging world economy,
- The" improving quality and effectiveness";is the main aim and that could be achieved by "facilitating access"; and "opening up national education and training systems to the world"

OECD CERI (Centre for Educational Research Institute) has organized an Experts Meeting on "University futures and new technologies" and a Discussion Paper has been submitted at the end of these meeting which mentions Six Scenarios for Universities (OECD/CERI, 2004). In the Discussion Paper, the six variables selected for constructing the five scenarios are: 1) the type of population covered by tertiary education, as well as correlated variables; 2) the nature of funding (predominantly public, mixed, predominantly private); 3) the integration of missions offered; 4) the international dimension of the system, 5) the homogeneity of status of faculty and institutions, and 6) the degree of take-up of technology (e-learning, e-research). The six scenarios are based on the following issues; Tradition, Entrepreneurial universities, Free market, Lifelong learning and open education, Global network of institutions, Diversity of recognised learning – Disappearance of universities

The analysis of six scenarios dictates that:

- The universities should revise their Student Affairs related departments and procedure considering big changes in the students' demography (mid-age new comers, professional courses) as well as working hours,
- More PR activity is required to establish a strong link with society,
- An improved financial system and coordination units to secure cooperation and collaborations with business and industry,
- Flexible rules and structure to respond continuously changing requirements

In the light of these findings the roles of the universities are;

- To provide knowledge for the policy makers and leading groups of the business and industry
- To provide technologic support for the business and industry to improve the life quality by academic research
- To provide qualified manpower in support of the business, industry, government and local authorities.

The new requirements raised in the 21st century which needs the support of universities:

- Specialization on a definite subject to create a sound effect on the policies and procedures by way of scientific research
- The close cooperation with business, industry, government, local authorities and NGOs in particular occupational issues to provide well-qualified manpower for them
- To improve the human quality during and after higher education stages as a part of lifelong learning in particular completing the missing educational and cultural skills of the previous stages of the education period.
- To create a holistic education and training system matching academic and vocational requirements

The academic freedom can be summarized under two headings: freedom, freedom of learning and teaching. This freedom also covers freedom of research. Similarly, the proposed European Union Constitution explicitly states in Article II-73 that '[t]he arts and scientific research shall be free of constraint. Academic freedom shall be respected' (European Union, 2005). But there is another fact that more management and control means less freedom. It is the same in the university. Surprisingly, scholarly articles on ''academic freedom'' rarely mention freedom from management as an important feature of academic freedom' (Kernel, 2009). As a result of this fact, the organization and management structure of future universities should be set up as a flexible system which provides freedom for movement for both education and research activities.

Leaders of all institutions and programs, to be effective in this era of digital competition, need a strong rationale and framework for organizational change. This rationale will provide a foundation for organizational adjustments and even transformations necessary to respond to the opportunities and risks presented by increased worldwide demand for learning, advancing learning technologies, and growing competition among multiple providers, all seeking to gain competitive advantage. This rationale can be enhanced by an understanding of organizational change theory and might include such factors as:

· The relationship of universities to social purposes and goals
· Higher education as an open system
· The powerful influence of external factors
· The importance of multiple points of resistance
· Alternative means of achieving similar results
· The complexity of system-wide adjustments
· The role of competition in fostering innovation
· Collaboration and communication as vehicles of change
· Technology as a lever for transformation

Clearly, all universities have the potential to become the educational equivalent of global multinational corporations that operate across national boundaries (Hanna, 1998).

The owners/shareholders were the only authority leading an organization up to the last quarter of the 20th century. After that many other factors started to play a significant role on decision process when leading a company as a result of new world order. Now worker unions, NGOs, sector institutions, NGOs and local government play a significant role on decisions as government policies shapes strategic plans of the all types of institutions.

A new strategic management concepts has been introduced, namely Stakeholders Approach. The stakeholder concept can be useful in integrating some of these issues (plans and systems of the plans for business level entities, role of the corporation in the social systems, social responsibility of the business, behaviour of the large group of the populations of the organizations and their environments) around the concept of organization strategy, that is around the issues of how organizations can configure themselves and take actions to align themselves with the environment (Freeman, 2011). Unfortunately the universities have no intention of adopting new strategic concepts. This will create a negative impact on the success of universities when they cooperate with the business world.

The new application is called "stakeholders concept" which became important for the strategic management of the organizations. The term was meant to generalize the notion of the stakeholder as the only group to whom management need to be responsible. The concept was originally defined as "groups without whose support the organization would cease to exist". The list of the stakeholder originally included shareholders, employees, customers, suppliers, lenders and society (Freeman, 1987).

Today all organizations are under the effect of their stakeholders when they make their strategic plans. In order to prevent any negative impact on their organization, the managers should take into consideration all these effects. The stakeholder influences are grouped as economic, technological, political, social and managerial. Any decision in particular related to a new course of action needs to be reviewed under the above mentioned five effects.

As far as concerning the effects of the stakeholders, some examples related to the university are as follows;

- Economic: To handle a university with only student fees and government financial aids is not sufficient today. The research activities needs more financial support and this can be achieved by close cooperation with other parties require research and innovation for improving their work.
- Technological: To handle research projects are generally costly. To overcome cost problem the university needs to find partners which may support the research activities. So the university should follow the technological improvements and match its research activities with the technological expectations of the industry.
- Political: The area of manoeuvre of the state and private universities is limited by existing legislative and administrative rules and regulations which are generally not flexible. In order to enhance their freedom of movement they should follow all political improvements even they should create an influence on society when the new rules and regulations are shaping. The acquis in the hand of the universities is sufficient to achieve that but needs to be organized for that.
- Social: The NGOs has a great influence on the society to shape a new social order. Any cooperation, institution should be very sensitive to understand the new social approaches introduced by NGO to be able to redefine their new roles and responsibilities.
- Managerial: The new role of the manager is to keep an eye on society and the economy in addition to existing functions. A manager cannot estimate new course of actions without taking into account the new expectations of the people and economic developments.

To this end, today the presidents, rectors, deans are not only a manager to direct their academic units. To provide better opportunities for their universities they need to work as a businessman or CEO of a company. If the new area of interest is the use of the business strategies and techniques, the marketing becomes highly important to

survive. Beyond everything a business must have customers, for without them there is no business (Lloyd, 2007). Finally it would be better to say that the university needs to add some people with business skills into their organization.

The deterministic operating system is applied for the universities by the 1980s. This is a system which the attitudes are well known and generally static and based on definite rules and regulations. The new roles of the universities concerning condense research activities, cooperation with industry and this caused a drastic change on the operating system. The new system approach is probabilistic which the attitudes of the system cannot be predicted (Oygur, 2004). It would be better to consider a holistic solution. All the elements of the system should be reviewed and the solutions should be created on this analysis.

It is proposed that the whole existing and future functions of the universities should be carefully analyzed and holistic solutions which provide a management system which meets overall requirements should be created.

The organization culture is highly important when establishing strategy, because appropriate strategies may be negated by incompatible culture (Mathis & Jackson, 1988). This enforces the universities reconsider their organization culture. And managerial level should be well prepared to assume risks.

The structure of the formal organization is based on analysis of three key elements of any organizations; human interactions, goal-directed activities and structure. Management must coordinate the activities of workers to accomplish organizational objectives (Boone & Kuntz, 1987). That means the management should carefully analyze these three elements and direct all elements of the institutions to reach the objectives with a well organized coordination effort.

The small firm is driving force in innovation in innovations observes Edward Roberts, a management professor at the Massachusetts Institute of Technology. It is only reason for existence is to bring a new technology or product to market, but the small company forces a big company to take notice and compete (Boone & Kuntz, 1987). The universities should be very careful when they establish research groups and the large research groups for development of innovation may be avoided.

Henry Fayol defines the activities in organizations under six groups; technical (production), commercial (sales, purchase and procurement), Finance, Accounting, Safety (Security) and Management (Kocel, 2007).

The functional organization is the most common structure used in the practice. This functional organization is based on putting the works and tasks considering their essence (qualification). As an example an organization can be grouped as accounting, marketing, production, personnel management departments putting all related jobs under these functions (Kocel, 2007). The education may be assumed main production of the university, research activities may be grouped under a single block and all other administrative activities may be grouped as a support group.

The cooperation with business and industry is vital but needs additional studies and creation of a suitable mechanism to achieve it. The following issues should also be considered for getting more benefit from the cooperation:

In order to get benefit from the experiment of the government, business and industry inclusion of teaching staff from this organization to academic system and combining these augmenters into the existing academic structure should be formulated.

a. An effective on-the-job training system should be matched to academic system to understand existing practises, procedures, application in the real world. The part time or even short period full time deployment of some academicians in the industry should also be considered to update the existing information and knowledge.
b. The universities should take a more important role for development of innovation and transfer of innovation. The cooperation with abroad universities will be a better tool for transfer of best practices in the other parts of the world.
c. All above mentioned activities need establishment of a cooperation and coordination mechanism in the universities. But this mechanism should have a background and expertise on the business and industry world to establish a suitable coordination.
d. Each university should select a specific subject to be focused on rather than diversifying his efforts on many different subjects. And they should participate into all related local and international activities

including the media. This will provide a reputation for the university and the university will be a key player in this field.

5. A SURVEY ON THE MISSION AND ROLES OF THE UNIVERSITIES

The academicians are the key element of the universities. Any study on the review the new roles and missions f the universities should cover the situation and expectations of the academicians which will play a crucial role to fulfil the requirements to achieve new expectations. The aim of the survey is to understand the academicians' view of the mission and the roles of the universities.

The survey is conducted in the IMLA 22 (2013) (International Maritime Lecturer Conference) conducted in China, ICQH 2013 (International Conference on Quality in Higher Education), ICQH 2014 XII. LM-SCM (2014) (International Logistics and Supply Chain Congress) and ERPA 2014 (International Education Conferences) conducted in Turkey. The academicians from different countries are selected as target group.

The main hypothesises of the survey was:
- H₁: The teaching is the main function of the universities
- H2: The academicians prefer teaching is rather important than research
- H3: The research capabilities of the universities are still limited
- H4: The research activities are important for industry rather than universities
- H5: The research activities improve the quality of teaching in universities

Considering time constrains during the conferences questions in the questionnaire are prepared very simple and could be answered in a short period. The questionnaires are applied in form of face to face interviews. Total 62 academicians from 14 countries are participated. 32 academicians are teaching science and 30 are teaching social science.

The responds to questions are as follows;

What is the priority task for the university?

Academicians	Teaching	Research
Science	24	8
Social Sciences	28	2
TOTAL	52	10

Is your university capable to conduct research activities sufficiently?

Academicians	Fully	Partly	Not
Science	6	24	2
Social Sciences	2	15	13
TOTAL	8	39	15

Do you have sufficient sources to conduct research studies?

Academicians	Fully	Partly	Not
Science	6	24	2
Social Sciences	2	15	13
TOTAL	8	39	15

Are you able to find sufficient time for your research studies?

Academicians	Fully	Partly	Not
Science	4	10	18
Social Sciences	8	10	12
TOTAL	12	20	30

Do research activities contribute your teaching quality?

Academicians	Fully	Partly	Not
Science	15	12	5
Social Sciences	10	14	6
TOTAL	25	26	11

Do you have sufficient opportunities to cooperate with industry/society?

Academicians	Fully	Partly	Not
Science	8	14	10
Social Sciences	6	8	16
TOTAL	14	22	26

Do you believe that your institute is apply matrix organization to conduct both teaching and research activities in balance?

Academicians	Fully	Partly	Not
Science	4	16	12
Social Sciences	3	10	17
TOTAL	7	26	29

Who gets more benefit from research activities?

Academicians	University	Industry/Society
Science	8	24
Social Sciences	6	24
TOTAL	14	48

In according to results of the survey; the hypothesise H₁ (The teaching is the main function of the universities), H2 (The academicians prefer teaching is rather important than research), H3 (The research capabilities of the universities are still limited) and H4 (The research activities are important for industry rather than universities) are proved. H5 (The research activities improve the quality of teaching in universities) could not be proved.

The evaluation of the survey results which reflects the view of the academicians may be resumed as follows;

-   The priority task of the universities is still teaching (84%). But there is a new approach to assume the research as a priority task among the academicians teaching science (27.6%).
-   The academicians believe that the universities are not fully capable to conduct research studies (87.5%). Most of the universities are partly capable to conduct research studies in science field (62.9%). The universities not capacity to conduct research in social sciences (43.3%).
-   The universities have not sufficient sources to conduct research (90%). They have very limited sources to conduct research in social science (93%).
-   The academicians have not sufficient time (80%) and opportunities (77.4%).
-   The science lecturers mostly (59.7%) but social science lecturers partly (33.3%) believe the research activities contribute their lecturing quality.
-   The academicians assume the cooperation with industry/society is low (80.6%). 34.3 percent of the science and 53.3 percent of the social science lecturers believe there is no cooperation between university and industry/society.
-   Most of the lecturers (88.7%) believe that it is not easy to apply matrix organization to match teaching and research activities in the university.
-   Most science lecturers (75%) and social science lecturers (80%) believe the industry gets more benefit from the university and industry cooperation.

To this end it may be stated that the academicians have many queries on the research activities and university and industry/society cooperation. Any work requires manpower, time and sources. Being the major manpower, the academicians are the key element of the universities. They need time and sources to achieve their mission. Unless they have been contented it would not be so easy to achieve an effective cooperation between university and

industry. The success of any organization is depending upon the satisfaction of the human element that will be deployed.

6. CONCLUSION

As a result of this study it is understood that most of the universities are not adopting contemporary business and management practices. Success depends upon correct decisions to provide smooth operation of the organization. It is evident that all institutions should adopt new business management techniques and practices to survive in a challenging world.

The followings are suggested for the universities to improve their business organization and management system for the future role and missions:

Board of the Trustees and/or Board of the Managers

An enhanced Board of the Trustees and/or Board of the Managers are proposed under the "stakeholder" concept. The members from focused sectors, government institutions, high level managers, experienced financial experts, even related NGO representatives should be included. The business development should be a main area of interest like corporation and some members should have commercial, management and financial background to achieve that.

President or Rector

The president or rector should be capable of assuming the role of a CEO in a company. That dictates that the highest officer of the university should have a managerial experiment not only in the university but also in the business world. The president should be supported by full or part time legal, financial, strategic planning and commercial adviser. Existing advisers are expert on the education related systems but new generation advisers should have experiment on the commercial management.

Academic Units

The faculty, community college, postgraduate schools will be still key elements of the academic units. But the programme development became a continuous job to meet the requirements of new qualification framework and close cooperation with business and industry. A new department responsible for programme development is now needed to improve contemporary faculty programmes as well as responsible to improve double major, distance learning and personal development programmes. A task oriented flexible departmental system for academic and research units which secures control of the system effectively and also allows freedom of thinking is proposed.

Research Units

The key actors of the research in the university are academicians. But the industry needs more specific and elaborate research studies which should be supported by external researchers. The experiments proved that small research groups are fairly effective for innovation projects. This increases the number of the independent research units. To provide better coordination and easy the management procedures a coordination and control unit is required. The research units should be provided administrative support to facilitate their studies and this function may be placed under coordination and control unit dedicated only for research teams. The control of too many units under a single manager is not preferred and grouping of the similar- resembling research activates under a group leader is advised.

Twin mandate of academician in both lecturing and research roles is inevitable. The most universities have applied matrix organization for teaching and research functions. But it is evident that this application may reduce the effectiveness of both functions. In order to secure the research studies every research team should have a coordinator who has not a lecturing role and is devoted only for research. Each research units should be manned with permanent core staff and augmented with the academic staff related the subject under the matrix organization concept.

The financial support of the research projects and coordination and cooperation with industry are the key element to achieve a research project. Many research projects have been hampered due to lack of wrong pricing, insufficient finance and lack of coordination. These functions are generally irrelevant for the researchers and should be assumed a strong team in the support units.

Supporting Units

The composition of the students is radically changed. Now we have elder students, people who take distance learning, visiting students, professional students taking professional studies in the continuous education centres which each needs different treatments. The classical working procedures of the Student Affairs department should be revised taking into account new demography of the students.

The universities produce and sell "goods" like a commercial company. That requires establishment of a commercial system including "marketing", "pricing", "public relations", "advertisement", "budgeting", "financing", procurement", purchasing" etc. These are the functions need special professionals with market experiments.

Total Quality Management and Quality Assurance is vital to ensure the quality of the job and correction of the system to achieve perfection. The production of the university is not only education but also technology which each requires application of different quality management procedures.

The coordination, cooperation and collaborations with national and international institutions, universities, business and industry and sector have the ultimate importance.

The management of the facilities such as buildings, laboratories, simulators, open areas, social facilities is highly important to effective and feasible use of the existing properties. The new requirements also dictate sharing these facilities with other organization and using the assets of the other institutes. That requires deliberate planning and conduct.

 A full spectrum supporting unit which fully supports academic and research units and achieves close cooperation, coordination and collaboration with business and industry will secure the mission of the universities providing qualified manpower for the society and meeting the academic research requirements of the business and industry.

Basic Organization Diagram

Every organization represents its organization diagram in according to its own requirements. The diagram proposed here is a simple example which supports all above mentioned issues.

- The management board covering a large spectrum containing all respective shareholders as well as related stakeholders
- A directorate with adviser in particular for finance and commercial management and vice directors responsible for three main functions which are education, research and support
- Academic units such as faculties, community colleges, postgraduate schools and academic institutes responsible for specific area of interest and professional studies. A new department responsible for programme developments
- Research units generally consist of small teams specified on a definite research area, but all related teams are grouped under a group leader to facilitate control and coordination
- Supporting units for student affairs, commercial management, facility management, TQY and QA, IT, coordination, cooperation and collaboration. A unit responsible for finance, accounting and budgeting is highly important to manage all commercial activities.

Final word

Any change in the organization and management system directly affects and is affected by the organization culture. University culture is based on a tradition rooted and strong ties with history of civilization. To this end all changes should be actualized taking into account the cultural habits and acquis of the university and any major conflict must be refrained.

The academicians play a crucial role to achieve new roles and missions of the university. So it is important to content academicians to assume the new tasks eagerly.

One of the big mistakes during application of a new strategy is creating interim plans which generally may seriously crate a negative impact on the success of overall plan. To avoid that a full plan should be prepared and applied gradually instead of applying interim plans. Interim plans may cause diversion of the main aim and objectives. A strong decision should be obtained and a full scale plan should be applied without any compromise to make a fundamental change for organization.

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