CHAPTER 16

The Organizational Challenge for European Universities Facing Globalization

Patrick Aebischer and Jean-François Ricci

INTRODUCTION

The academic world is more global than ever: competition for talents, international mobility both of students and faculty, diversification of funding are some of the main features of this changing environment faced by universities. International rankings are blooming and contribute — despite their obvious limitations — to globalization as well as competition.

Nowadays three main markets are predominant: North America, with most of the world's leading universities, Asia, the fastest-growing and changing academic environment with a huge potential in the near future, and Europe, with a long academic tradition. Three different backgrounds, three challenging environments, and a global competition framework.

Europe is made up of nations with very heterogeneous cultures, traditions, languages and political systems. This multiculturalism has to be fully taken into account in the way academic organizations are defined and managed. But, however strong their academic roots, these academic structures and organizations need to evolve in order to accommodate this new context and challenges in education and research. This paper summarizes some of those main academic challenges and proposes some general principles in reforming the organizational structures of European universities.

CHALLENGES FOR EUROPEAN UNIVERSITIES IN A GLOBAL WORLD

Academic institutions have defined various ways to respond to new challenges and position themselves in the changing global academic environment. Swiss universities are also affected by this evolution. In fact Switzerland is quite a special case: a population of 7.5 million inhabitants, less than 20% of whom have a university degree, but 12 universities, five of which are ranked in the top 50 according to the Newsweek Ranking 2006. In this sense Switzerland is definitely a global player and has to take these global trends into account.

This chapter gives a broad — and non-exhaustive — view of some of the main challenges facing universities and institutes of technology, as well as some specific measures and initiatives developed by academic institutions worldwide.

Recruit the best students

Recruiting first-rate students is and will remain one of the main competitive advantages of universities in the global education world. Some universities like Imperial College base admission on interviews and performance evaluations. Partially due to the current legal framework in Switzerland which allows all students with a Swiss baccalaureate degree to enter EPFL (end of high school degree), it is a deliberate option at EPFL to base the selection on a first "propédeutique" (preparatory) year to give all students a chance to meet the selection criteria. Students with a foreign high school degree are admitted on dossier, but they have to pass their first-year "propédeutique" exam to move on. But, for both approaches, the dilemma is to find the right process to attract and select the best students who will become the leaders, scientists, engineers or entrepreneurs of tomorrow.

Due to this global competition, financial aid is on the agenda of most universities. As an example Cornell, Duke or Yale claim that education programmes have to be accessible whatever the financial circumstances of students and their families. Princeton has developed a broad system of financial aid grants calculated on an individual basis. Despite low tuition (approximately $1,000 a year), recent surveys in Switzerland show that there remain social inequalities in accessing universities. There is an urgent need for a constructive debate and concrete solutions in order to give better and fair access to higher education, both in Switzerland and in Europe. Fellowships for students from low-income families need to be further developed in order to ameliorate the situation.

Europe is pursuing the reform of education according to the Bologna Declaration. However, a lot of work still needs to be done in order to effectively

transform the wide range of higher education programmes into a consistent framework for Bachelor, Master and Doctoral studies. As part of this reform, European universities should consider the development of true graduate schools covering both Master and Doctoral programmes.

Along with the success of the Erasmus programme, this new educational framework will greatly contribute to promote and reinforce the international mobility of students in Europe. As a consequence of this internationalization of education, more and more programmes will be taught in English, especially at the Master and Doctoral levels. Universities will therefore have to enhance their creativity and to find niches to emphasize their "génie propre" and specificities. Again the development of fellowships at the European level will be crucial to promote the mobility of European students.

Flexibility of the curricula is another key issue in the implementation of the Bologna Declaration. One of the most distinctive characteristics of educational programmes at the University of Cambridge is their breadth in the first years. In fact, many students do not have a clear idea of the options and topics they want to follow. The "Tripos System" gives students the opportunity to explore some topics in a very wide way, to delay specialization or to select some other fields according to new areas of interests. Yale University provides some vertical flexibility within the programmes. In addition to being able to enrol in advanced-level courses, students with exceptional preparation in certain areas may be eligible to accelerate — that is, to complete their degrees and graduate early by acquiring sufficient acceleration credits.

Providing the students with an opportunity to expand their knowledge is also on the agenda of many institutions. Beyond scientific and technological competences, courses in the Humanities offer the opportunity to study subjects which can make an important contribution to science and engineering students' general education and social awareness. As an example, the Imperial College Humanities courses include topics like philosophy, ethics in science and technology, history, modern literature and drama, art and music. A very similar offer has been developed at EPFL within the SHS — Social Sciences and Humanities programme. University College London aims at promoting social responsibility, global citizenship (including sustainability) and leadership in the student body, through both the formal curriculum and extra-curricular opportunities. The strategy of Duke University aims to infuse the campus with expanded opportunities to participate in and enjoy the arts. The University of Toronto aims at developing some understanding of the histories, cultures, values and epistemologies that shape the world we have inherited, in which we live, and which we shape. It should also be noted that this open-mindedness and flexibility also include the opportunity for the students to complete part of their curriculum abroad.

Attract and retain the best faculty

Beyond statements like "our staff is our most valuable resource", universities have to innovate in order to attract and retain their best staff, especially faculty and researchers. As a consequence of globalization and international recruitment, institutions have to benchmark their start-up and hard money packages in order to be competitive worldwide. This also includes considering spouse programmes together with competitive salaries.

But European universities should also develop a clear framework for academic promotions. Together with ETHZ, EPFL has adapted the US three-level faculty system, including developing a true tenure-track approach aiming at giving young scientists the autonomy and academic freedom to develop their own research and teaching.

As part of their motivation, retaining the best faculty should also include a scheme to reward the best contributions, especially for teaching. Beyond "bean-counting" procedures, universities should define some very simple processes aimed at identifying outstanding performance. But such an approach is also crucial for detecting local problems in teaching and providing suitable corrective measures, including teaching clinics.

Promote innovation and reinforce technology transfer

Innovation is a key driver for the economy and society, and universities play a crucial role at the very origin of the economic and industrial pipeline. Many institutions have therefore developed specific initiatives to support knowledge and technology transfer projects in their very early stages. The EPFL Vice Presidency for Innovation and Technology Transfer has recently developed several tools in order to close the innovation gap: science translator officers as a bridge between business technology needs and scientific research potentials and, as an additional component to the more traditional technology transfer activities, new schemes for the management of IP, creation of Innogrants as tailored supports to the best EPFL intrapreneurs, increased plasticity for the interaction with industry, increased SME access and support to universities, etc.

Interdisciplinarity is a buzzword in all institutional visions and strategies. Beyond cutting-edge research within scientific domains, more and more discoveries occur at the interface between disciplines. Many institutions like Imperial College, Yale University, KTH Stockholm, Duke University and MIT are promoting such interdisciplinarity beyond structural organizations through dedicated centres and programmes. EPFL has recently launched new initiatives in the field of design, information security, global health, cognitive neuroscience, space research and energy: these initiatives aim at bringing together scientists and researchers from various fields and domains in order to

develop innovative solutions and ideas. Beyond developing new scientific topics at the interface between domains, such initiatives are also very successful in providing concrete results for the economy and industry.

Develop strategic partnerships

Strategic partnerships are increasingly becoming part of the academic environment. Academic alliances are expanding beyond countries and continents, but national collaborations both with other academic institutions as well as with industries are also relevant.

Partly due to the results of most rankings, Europe has been used to looking west. But the current global trends and developments mean that European universities also have to learn to look east in order to develop new partnerships with Asian Universities: developing joint degrees, creating joint research programmes and joint laboratories, offering courses and programmes in Asian studies as well as providing incentives for these developments.

Become less dependent on state funding

The current constraints of public financing for higher education and research put a major pressure on universities. Beyond rationalization programmes and efficiency increases — typical economic approaches — European universities have to find new ways of financing.

The Bologna reform and increased student mobility have raised the question of tuition fees, which are today quite heterogeneous around the world. Another issue is the development of fundraising and sponsoring for chairs, fellowships or even buildings. Such external funding should greatly contribute to create real endowments, which would significantly increase the flexibility and agility of European universities. Despite significant successes for some rare European institutions, a major culture change will be needed to give the universities significant financial leverage.

Improve the management of universities

Due to the complexity of both the internal academic world as well as the external political environment, managing a university requires strong commitment and leadership. But such leadership is also needed at all levels of any institution, partly due to the need for rapid changes. So promoting, developing and even training professional university administrators should, more than ever, require great attention.

As part of the necessary change management, internal communication is a key component of any corporate culture. But this notion is often quite difficult and complex to manage in an open academic environment. Some institutions like the University of Cornell or UC Berkeley have created an Employee

Assembly — a mechanism for the informal exchange of information and views between employees and university administrators. But whatever the ways for such internal communication, this should never been taken for granted. Universities should therefore consider duplicating and multiplying communication channels in order to reach a majority of the institutional community.

European universities often have deep roots in history. Over the centuries they have developed well-respected traditions which are definitely part of their corporate culture and identity. But these traditions could also strongly restrain university management from undertaking the reforms needed due to external changes. Beyond keeping their corporate identity, universities should therefore develop a more flexible organization.

Together with this evolution the university management will have to integrate more and more characteristics and tools derived from the economy and business world. Through the Workforce Planning Initiative, the University of Cornell has been developing a global strategy in order to achieve sustainable improvement in both the effectiveness and the efficiency of campus wide support functions. At Yale University the Senior Management and the Unions agreed to launch and support a strategic initiative aiming at improving the overall quality, efficiency and workplace culture. Within the UK national context VfM — Value for Money is the term used to assess whether or not an organization has obtained the maximum benefit from the goods and services it acquires and/or provides within the resources available to it. Here once again staff commitment, awareness and participation are crucial for real success and implementation.

Data management and information systems have become unavoidable components of any university management good practice: finance, human resources, student management and academic information, but also research grants and contracts, as well as governance indicators, belong to this data management portfolio. The integration and combination of these large amounts of data and their use for competitive advantage is another step and challenge for the university senior administration. But this information is also required for the purpose of public reporting. Within the framework of the four-year performance contract the ETH Domain — ETHZ, EPFL and the four Research Institutes — reports its performance to Parliament on a yearly basis.

Provide modern infrastructure

The quality of infrastructure is definitely a crucial factor for attracting excellent students as well as top faculty and scientists. EPFL has a long tradition of providing first-rate facilities to the academic community. This is the result of a long-standing investment policy over decades. But this effort needs to be

constantly renewed: this is the aim of the Campus 2010 project. As a central part of this concept and the future point of entry to EPFL, the Rolex Learning Center will be a place of learning, information and living. A place where virtual and physical components combine for facilitated access to knowledge. It will offer flexibility and development potential in order to adapt itself to pedagogical, social and technical evolution.

The EPFL Campus 2010 project also includes a significant extension of student housing capacity, the creation of a hotel on campus, an extension of the Sport Center on the lake, as well as new infrastructure for industrial developments, including incubators. Additionally, a conference centre is to be planned near the EPFL campus.

Local Responsibility and Commitment

Last but not least, universities have important social responsibilities towards local and regional communities. Many North American universities have developed significant commitments for a number of years: the University of Duke through the "Duke-Durham Neighborhood Partnership", Caltech through its Office of Public Relations, and Princeton through the Office of Community and Regional Affairs (CRA) are a very few examples of this culture of openness. Despite very different backgrounds and history, European universities will increasingly have to play a significant citizen role towards local and regional communities.

ORGANIZATION, STRUCTURES AND MANAGEMENT

Many of these challenges require special efforts in shaping and re-organizing academic institutions and the way they are managed. Due to this fast-changing environment, European universities have to reflect on their mission and role in and for society, develop strategies and define goals, as well as adapt their structures and management.

University organizations are "people" structures: students, faculty and researchers, as well as technical and administrative staff, belong to the same complex and changing academic environment. Together with sometimes very deep historical backgrounds, they all contribute to creating a unique organization in size, networks, competences, leadership and culture. Despite a very broad range of organizations, one may ask which are the common organizational features of institutions like Oxford University, MIT or Nanyang University. Or, in other words, are there any organizational criteria that could contribute to success and international recognition?

In order to move towards these objectives, structure and organization need to be carefully defined. But the first question to be asked relates to the notion of structure. According to Laurie J. Mullins (2004), structure is the pattern of

relationship among positions in the organization and among members of the organization. Structure makes possible the application of the process of management and creates a framework of order and command through which the activities of the organization can be planned, organized, directed and controlled. The structure defines tasks and responsibilities, work roles and relationships, and channels of communication.

Within this very general and global framework there are obviously structures and structures. A study by Burns and Stalker (1966) described two extreme and divergent systems of management practice and structure: the mechanistic system (a more rigid structure with similar features to bureaucracy) and the organic system (a more fluid structure appropriate to changing conditions). Whereas the former pattern is more appropriate to stable conditions, the latter is more suitable to tackle new problems and situations. Actually most of the organizations combine some of the characteristics of both extreme patterns of mechanistic and organic systems.

Universities are a very typical example of such a hybrid organization. The unique combination of academic and administrative staff creates a very interesting — but complex — pattern. On the one hand, academic staff often feel that organic structures are the only framework they can effectively work within. Loose coordination and as little bureaucracy as possible are the most suitable organizational features, along with the academic freedom that faculty are granted. On the other hand, technical and administrative staff have a central function in keeping the organization operational. But they often have difficulties in integrating a real customer-oriented culture towards specific academic needs. This dilemma is a potential source of tension and misunderstanding, and a perpetual challenge for universities.

Defining a structure and an organization is a first step, but it is not enough. Synergies, collaboration and interactions need to take place within a form of integrated system. Lawrence and Lorsch (1969) described the parameter of integration as the quality of the state of collaboration that exists among departments that are required to achieve unity of effort by the demands of the environment. It is the degree of co-ordination between different departments with interdependent tasks. The mechanisms used to achieve integration depend on the amount of integration required and the difficulty in achieving it.

- In mechanistic structures, integration may be attempted through the use of policies, rules and procedures.
- In organic structures, integration may be attempted through teamwork and mutual co-operation.
- As the requirements for the amount of integration increase, additional means may be adopted, such as formal lateral relations, committees and project teams.

In every system and organization, achieving the right balance and level of integration is crucial. Redundancy and unnecessary complexity as a result of too much integration may easily lead to frustration and additional costs. But too low a level of integration could on the contrary result in loose and inefficient coordination, which could finally lead to waste of resources at the global level of the organization. Every institution has to define and find the right balance which mostly depends on historical background and academic tradition, political governance and the legal framework, as well as its corporate culture and internal structure.

EUROPEAN UNIVERSITIES FACING THE FUTURE OF GOVERNANCE AND ORGANIZATIONS

The structure is never the whole story. According to Birkinshaw (2001), structure is not an end in itself, but a means of improving organizational performance. Structure is also a way of managing the economic and efficient performance of the organization and the level of resource utilization. In this context, structures need to evolve and to accommodate the various challenges universities are facing.

Global competitiveness sets the framework for alternative forms of structures and systems of governance. Ridderstrale (2001) suggests some trends and ways of improving organizations and structures:

- More decentralized and flatter structures allow quick decisions to be taken near to where the critical knowledge resides.
- The use of more than a single structure in order that knowledge may be assembled across the boundaries of a traditional organization chart.
- Converting companies into learning organizations and giving every employee the same level of familiarity with personnel and capabilities.
- The broader sharing of expertise and knowledge, which may be located in the periphery where little formal authority resides.

European universities have to (re-)create flexible structures and organization models in order to accommodate a moving and globalized academic environment. They have to find the right level and degree of integration, i.e. the right balance between internal regulations, rules and procedures. They have to find the right procedures in order to be accountable to the political governing bodies. But they also have to find the right approach to informal group and teamwork in order to achieve a real and efficient collaboration as well as dynamic synergies among all groups and components of the academic community.

As far as governance is concerned European academic institutions have to gain autonomy in relation to politicians and stakeholders. But in parallel to these increased responsibilities and competencies at all levels of the institu-

tion, senior management has to reinforce the accountability framework towards these politicians and external bodies. The current four-year performance mandate of the ETH Domain is a good example of a clear separation between politicians and academics. But there is a fine line between increased bureaucracy, internal regulations, entrepreneurship and institutional agility.

Innovation is a key mover which needs to be part of every academic organization. New opportunities resulting both from increased mobility in Europe and the globalization of higher education worldwide, new ways of teaching and access to knowledge, new scientific and human challenges calling for new solutions, new ways of collaborating with academic and industrial partners. Innovation should be present at all levels of every institution. Moving forward and pushing the limits is the best way not to lag behind the rest of the academic world.

But people are definitely the key success factor and remain at the centre of each organization. People stay beyond all structures. As the latter put organizational emphasis on some institutional missions, individuals give life and movement to this structure. Any winning organization will always depend on the effective use of talented people. The internal connections, interactions and synergies of people together with a clear definition of objectives and structure will noticeably contribute to the success or failure of the organization as well as its effectiveness. Responsibilities, sharing of expertise and knowledge, informal networks, corporate culture and communication — a real and constant challenge within the academic environment — are some key factors providing the motivation and innovation spirit which will give every European university the strength and internal dynamism to face future challenges in the global academic world.

ADDENDUM

A sample of 15 universities has been considered in this paper. Ranging from a little over 2,000 students (Caltech) to tens of thousands of students (University of Toronto), nine of these are located in North America, five in Europe and one in Asia. One of the main common features of these institutions is their excellent performance according to the Newsweek Ranking (2006).

University	Country	Ranking Newsweek '06	Nb students
CALTECH - California Institute of Technology	USA	4	2'200
Princeton University	USA	15	6'600
MIT - Massachusetts Institute of Technology	USA	7	10'200
Yale University	USA	3	11'400
Duke University	USA	14	12'200
Imperial College	UK	17	12'200
KTH Stockholm	Sweden	–	13'000
TU Delft	Netherland	–	13'400
UCL - University College London	UK	25	18'300
University of Cambridge	UK	6	19'000
Columbia University	USA	10	20'200
Cornell University	USA	19	20'400
Nanyang University	Singapore	71	24'300
UC Berkeley	USA	5	30'300
University of Toronto	Canada	18	62'800

REFERENCES

Birkinshaw, J. (2001). "The Structures behind Global Companies", in Pickford, J. (Ed.), *Financial Times Mastering Management 2.0*, Financial Times Prentice Hall, London.

Burns, T. & Stalker, G.M. (1966). *The Management of Innovation*, Tavistock Publications, London.

Lawrence, P.R. & Lorsch, J. W. (1969). *Organization and Environment*, Irwin.

Mullins, Laurie J. (2004). *Management and Organisational Behaviour*, Financial Times Prentice Hall, London, seventh edition.

Newsweek Ranking (2006). http://www.msnbc.msn.com/id/14321230/site/newsweek/

Ridderstrale, J. (2001). "Business Moves beyond Bureaucracy", in Pickford, J. (Ed), *Financial Times Mastering Management 2.0*, Financial Times Prentice Hall, London.