

CHAPTER 15

Research Intensive Universities in a Globalized World

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INTRODUCTION

As president of a German university and chairman of the League of European Research Universities (LERU), it is my special interest to discuss the role of research intensive universities and their impact on global sustainability from a European point of view. One may wonder why the perspectives of European universities should be particularly interesting in terms of globalization. Another question would be what impact Europe's research intensive universities have on promoting and progressing sustainability as a goal that must be pursued? Looking at the numbers, Europe represents one of the largest economies in the world; it is one of the richest areas in terms of per capita income. And, it is also one of the largest higher education and research areas in the world. In 2009, almost 20 million students were pursuing a degree in higher education in one of the 27 member states of the European Union. For 2008, the EU member states had 1.3 million researchers (Eurostat, 2011). At this point, one may note that the differences from the United States and China are only minor — in 2006, Europe ranked third in total numbers, counting 1.33 million researchers compared to 1.4 million in the U.S. (as of 2007) and 1.6 million in China (as of 2008) (European Commission, 2011). To understand the current situation and the perspectives of European universities in an increasingly globalized world and their influence on global sustainability, it is helpful to have a brief look into the recent past.

DEFINING GLOBALIZATION AND RESEARCH INTENSIVE UNIVERSITIES

Since the end of the last century, globalization has become one of the key-words on the international agenda. The term was first introduced to describe the rapid increase in world trade and the higher mobility of production factors across the world. Similarly, the process of globalization was accompanied by a decline in transportation cost and rapid improvement of international communications. Today, products that indicate “Made in Germany” might also contain parts that were manufactured in China, Brazil or Turkey. The same applies, for example, to the food industry — globalization allows customers to buy typical groceries from Italy or Japan all across the world.

The term “globalization” is often used more broadly these days, to describe the enhanced interdependence of national states in the fields of economy, politics and culture, especially induced and boosted through the internet and other technical achievements regarding communication and information. One effect is that the world is seemingly moving together, and even getting “smaller”, as long distances between people and countries no longer matter. Events in one part of the world affect other parts more than in the past, simply because all information spreads almost in real time. A good example for the triumph of the World Wide Web and fast communication are the recent revolutionary movements in the Arabic countries. Without smartphones, twitter or facebook, the protesters would have had more difficulties organizing rallies and protests, and these would not have spread to other countries so quickly or at all.

The ongoing globalization process through enhanced communication and easily available information (e.g. through television or World Wide Web) is a great chance to learn about and acknowledge the diverse cultures, habits and everyday lives of the world’s population. But at the same time there is also the danger that by the dominance of some leading economies and cultures, this diversity is lost, and the economic and political forces at work lead to a homogenization of cultures and lifestyles across the world.

However, globalization influences the way the topic of sustainability — which can be defined as one of the grand challenges of our time — can and must be discussed. The positive outcomes of globalization as mentioned above create a framework within which sustainability can be tackled the best possible way. An ideal and at the same time responsible use of all available resources — be it food and water, energy or the creativity and innovative potential of the world’s brightest minds — can be communicated to the world’s population more efficiently with the tools that globalization is offering. Then, finally, people’s well-being worldwide can be tackled, achieved and maintained. To sum it up, one can say that globalization can be used to edu-

cate people, therefore a well functioning system of higher education is the key to a sustainable management of the available resources: A higher education system that enables the best brains to do research and come up with innovative solutions brings the world forward and needs to be used to ameliorate the lives of the world population.

THE RESPONSE OF EUROPEAN UNIVERSITIES TO GLOBALIZATION

Although the term globalization has only become popular in the last century, globalizing tendencies have always existed. Universities, research and researchers have always had a “global” impact. One could say that the universities of the Middle Ages were already truly international institutions with scholars from many parts of the world attending them or at least corresponding with each other. By doing this, they were working beyond countries’ frontiers and across language barriers, with Latin being the lingua franca of the age. The truly international approach driven only by the desire to exchange and enhance knowledge has always been a trait of universities until the present day.

For various historical and other reasons, the term “European universities” used in my contribution refers only to the institutions in continental Europe, as the situation in the United Kingdom differs in many respects from the rest of Europe.

European universities are among the oldest in the world; there are proud, old institutions like the Sorbonne or the universities in Bologna, Prague, Heidelberg and Geneva, to name just a few. Nevertheless, one must say that ten years ago, at the beginning of this century, European universities were in deep crisis. For reasons that will not be discussed in detail in this contribution, the higher education system had become highly sclerotic, underperforming and non-competitive on a global scale — thus not sustainable any longer. The situation of European universities at that time could be described as performing badly with not much funding. This picture has, in my view, dramatically changed over the last years. In many countries, we have seen sweeping reforms at universities, a process of modernization has been set in motion and far-reaching initiatives have been undertaken. In the next paragraph, some of the key steps will be highlighted.

On the one hand, there is more autonomy and less bureaucracy at European universities. For example, Germany and recently France have introduced reforms which drastically reduce the dependence on the state. To give you one example for such a reform at Ludwig-Maximilians-Universität München: A key step for higher education in Europe to become more open and more international was the introduction of a system of common degrees across Europe.

This is the so-called Bologna process that facilitates and thereby increases the mobility of students and graduates. Consequently, a student with a Bachelor degree from the Netherlands can now do his master's in Germany.

In addition to this massive change for European higher education, in 2009, the right to appoint professors was delegated to the universities, so now the presidents/rectors directly appoint professors, whereas, before, the government had this right and could also reject appointments submitted by the universities.

One of the most important steps has been to introduce competition into the university system. For example, Germany has introduced the so-called excellence initiative. Similar programs are now also run in Spain and in France. At the European level, the ERC (European Research Council), which funds world-class research on a competitive basis across Europe, has been established. And we have experienced a significant expansion of the system of higher education and research. For example, in Germany, it used to be the case that 25% of a cohort attended higher education institutions. This proportion is now nearly at 45%. We have more than 2.2 million students in Germany, and this number will increase to almost 3 million over the next years. Similarly, the number of researchers has increased to more than 300,000 today from 240,000 a couple of years ago (Hochschulrektorenkonferenz, 2011).

Summing this up, one can say that the university landscape has undergone some wide-ranging changes: universities gained more autonomy, the degrees have been harmonized, competition between the institutions has been strengthened, and an overall expansion can be observed. All this is, of course, part of an effort to make Europe globally competitive and a place that is attractive to both people and businesses. In return, this also serves sustainability.

WHERE DO WE STAND NOW?

It is then natural to ask — where do we stand now? From a global perspective, we observe what you may call a catch-up process. Consider for example international rankings of universities. As an academic I should add that this kind of league tables raises various difficult methodological issues. Keeping this in mind, rankings nevertheless reveal some interesting tendencies. One well-known league table has been developed by the *Times*. Their current ranking for 2010 shows that only 14 universities from continental Europe are among the top 100 (Times Higher Education, 2011).

This reflects the deficiencies of European universities in the past that I have mentioned above, and it also shows that catching up to the top positions takes time. But I am confident that when the full benefits of the recent reforms kick in, one will make out a significant improvement of the position of European universities in these ranking tables. For example, the potential for

improvement can already be deduced from the fact that more than 40% of the universities in the positions 100 to 200 in the ranking are from continental Europe (Times Higher Education, 2011).

If you consider the current situation from a European perspective, my view is that higher education and research in Europe are “moving together”. A common European Research Area is being formed which brings together the triangle of research, innovation and higher education. But in this regard, one also has to mention that not all of Europe’s universities perform in the same way. It is mostly the western European states that contribute powerfully to this triangle.

From a national perspective, one can say that the increased competition has induced a process of differentiation across universities in many member countries. Some universities are on the way to become truly internationally oriented, research-based universities while other ones are developing their strengths in a national or regional context; others are focussing on their role as teaching institutions. One must be clear about this process of differentiation: the procedure is not easy, as it raises various difficult and sometimes painful issues. But it opens the perspective for a highly competitive and successful system of higher education and research that can support the efforts to achieve and maintain global sustainability.

WHERE DO WE GO NEXT?

What lies ahead for the future of research intensive universities? How will their performance contribute to global sustainability? In my view, the answer is clear. Europe has to further strengthen and improve the performance of its system of higher education and research. It needs to be emphasized that the benefits of higher education, research and innovation are not only key drivers for innovation, economic growth and prosperity. Investment in universities and research goes beyond economic considerations. We need more research and thus more innovation to tackle the great challenges of our time — like food, energy, climate change and health. In short, all of these challenges come down to one major challenge that mankind has to face together: sustainability. In my view, European universities can make a significant contribution to these issues and therefore serve global sustainability.

Higher education in Europe has become more open, more international, by, for example, introducing a system of common degrees across continental Europe. As already mentioned, this is the so-called Bologna process: In order to homogenize degrees to make them more comparable and to allow students to fulfil part of their studies at institutions Europe-wide without losing precious ECTS points or seminars at their home institutions, the “new” Bachelor and Master system facilitates and thereby increases international mobility of

students and graduates. Even if the current results of this reform leave room for discussions and critique, there is one trend that has gained impetus over the past decade and more so over the past few years. According to the OECD, more than 2.7 million students of the higher education system were attending universities abroad (OECD, 2007). Recent evidence indicates that this figure has further increased over the last few years: Many students consider a stay at a university abroad not only as an intellectual challenge and an asset to their academic transcript, but also as a rewarding personal experience, or, as a clear step into an economically better future; this applies especially to students from developing countries who take the knowledge gained at foreign universities back home to ameliorate the situation there. A truly globalized profile of a student today includes at least a stay abroad and an internship in a country other than his or her country of origin. International and transnational companies are looking for staff who are not only well trained, but who have already gained intercultural experience, speak several languages and are prepared to easily work in a multicultural environment.

For all non Anglo-Saxon states, this leads to major strategic considerations regarding their teaching and also their research output in form of publications: In what language will classes be taught? Are the staff willing and able to teach in a language other than their native tongue? Can they write their research papers in English with the same quality as in their mother tongue? Today, English has become the *lingua franca* in science. But in the humanities, the situation is often still quite different, reflecting the specific cultural background of the various subjects. Globalizing the student body and the faculty and serving an international market will then require countries like Germany to offer a larger part of their curriculum in English.

But globalization does not only affect teaching, it has a deep impact on research as well. Internationalization through attracting the best researchers and students from all over the world is the outspoken goal of many universities and even states. With declining birth rates and an economy that needs well educated employees, most developed countries have a keen interest in preserving their standard of living by being at the forefront of economic and social innovation.

But what are the potential risks for the future of research-intensive universities? One point that is worrying is the future role of basic or so-called blue sky research. There is always a certain tendency among politicians to support research which promises directly applicable results and immediate benefits. Blue sky or basic research often looks less attractive from a short-term perspective. But, let us be clear, in the long run, the innovation process is driven by the results of basic research. One brief example: CERN in Geneva is one of the leading research institutes pursuing basic research in the field of physics. The prototype of the World Wide Web which has changed the daily lives of

all of us was developed at CERN in the early 1990s as a project to facilitate the sharing of information among researchers. Only a few years later, the World Wide Web has revolutionized the way we work, the way we consume media, the way we discuss openly and communicate with each other beyond borders — nearly every aspect of our lives. This example underlines that we need to make sure that research policy and funding policies leave ample room for basic and blue sky research which is so crucial to develop the unthinkable.

Finally, there is one more aspect that needs to be stressed when discussing the future of research intensive universities in a globalized world. Our understanding of the role of universities has changed over time. Today, we emphasize the contribution of universities to qualify young people, to research and innovation, and to sustainable economic growth and prosperity. This is legitimate. But let us not forget the cultural and societal dimensions of the role of universities. This concerns in particular the role of arts and humanities at universities. The departments of arts and humanities are not a by-product or a luxury, no — arts and humanities are crucial to understand ourselves, our history, our culture, our society. Therefore, we have to take care that arts and humanities remain an integral part of our universities. I think that this is one of the elements that make sure that our universities and, as a result of the universities' contributions, our societies face a bright future and the prospect of global sustainability.

REFERENCES

- European Commission, Directorate-General for Research and Innovation (2011). *EUR 24211 — Innovation Union Competitiveness report*. Luxembourg: Publications Office of the European Union, p. 88.
- Eurostat (2011). *Tertiary students (ISCED 5-6) by field of education and sex [educ_enrl5]*. Available at: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=educ_enrl5&lang=en (Accessed 15 June 2011).
- Hochschulrektorenkonferenz (2011). *Hochschulen in Zahlen 2011* (pdf). Available at: http://www.hrk.de/de/download/dateien/Hochschulen_in_Zahlen_2011.pdf (Accessed 15 June 2011).
- OECD (2007). *Number of foreign students in tertiary education, by country of origin and destination (2005) and market shares in international education (2000, 2005)*. Available at: <http://www.oecd.org/dataoecd/17/10/39308963.xls> (Accessed 15 June 2011).
- Times Higher Education (2011). *The World University Rankings 2010*. Available at: <http://www.timeshighereducation.co.uk/world-university-rankings/2010-2011/top-200.html> (Accessed 15 June 2011).