

New Concepts for Higher-education Institutions in the Europe of Knowledge

H.G.Büttner, TU Delft, The Netherlands

Abstract

Five leading technological universities in Europe (the IDEA League) set up a strategic alliance in response to the increasing competition in higher education. They actively promote the development of joint activities, in particular with respect to internationalisation of education, common research-interests, human-resource developments, and other strategic policy-issues.

The establishment of common educational quality management principles leads to mutual recognition of degrees giving students the flexibility to move between the partner universities. Joint master courses are also set up within the alliance. Not only education is on the agenda of the League, but also the scientific and technological needs of Europe in its research and collaboration with industry. This paper discusses how to face these challenges and the experience gained working in a cross-border collaboration.

Higher Education in Europe

Europe experiences major changes in its higher-education landscape in response to its ambition to provide a common European Higher-education Area by 2010. The major driving force in this is the Bologna process which started in October 1999 with a conference of the European ministers of education setting out the objectives. The key points of the Bologna declaration are:

- harmonisation of structures and organisations: e.g. two-cycle degree structure with bachelor and master,
- quality assurance in education,
- stimulation of student mobility,
- transparency of curricula: European Credit Transfer System (ECTS), diploma supplement,
- development of international study programmes.

This has the aim to increase the attractiveness of European higher-education and making Europe more competitive. Subsequently, there were conferences in Prague in 2001, Berlin in 2003, and in Bergen in 2005 (Bergen 2005) taking stock of the realisations accomplished over the 2-year period and discussing the follow-up for the next round. The 2007 conference is planned for London.

In educational matters there is not really a common European policy, because the European Commission (EC) does not have a mandate by the national ministries, but it encourages the Bologna process with a great number of support actions. This reaches from facilitating the set-up of frameworks between national bodies, e.g. of quality assurance in education, to a grant scheme for student mobility within Europe and the Erasmus Mundus programme (Erasmus 2004) fostering the establishment of joint master programmes across borders.

The Bologna process is now reaching out further, firstly by increasing the number of signatory countries, and secondly concerning the number of topics addressed. For example, in addition to the original objectives, the Berlin and Bergen Communiqué (Bergen 2005) aim at an integration of the doctoral level by proposing a three-cycle structure. The implementation of the Bologna features broadly depends on national (federal) legislations and therefore, the Communiqué also acknowledges

that higher-education institutions need more autonomy if they want to accommodate the changes proposed by the Bologna process.

Overall, the Bologna process can be seen as part of Europe's goal "to become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion" (Lisbon 2000). Competitiveness and marketing are also encouraged in higher education.

Why setting up an alliance of universities?

Whereas the US has a long tradition of marketing and service-providing in higher education due to their system of tuition fees, this is a rather recent concept in Europe, where a great number of countries still do not ask fees, or if they do they are rather small compared to the US. The idea of students as customer is slowly settling in European higher-education. As a response to dealing with these recent developments, university alliances have been established: they collaborate to become more competitive and through this European education becomes more attractive and appealing. This is not only a European phenomenon, but it can also be observed that over the last years a great number of university alliances were founded not only in Europe, but also world wide.

The creation of a network of higher-education institutions provides the possibility to work strategically together in internationalisation of education, to benchmark with partners, learn from each other and better positioning in the international market. It can also be understood as one of the steps taking entrepreneurship into academia. Whereas Kitagawa (Kitagawa 2005) sees academic entrepreneurship more under the sign of university-industry interaction, Shattock (Shattock 2005) takes a wider viewpoint indicating that this "entrepreneurialism stimulates external collaboration notably with industry and commerce, but not exclusively so, and reinforces academic performance by attracting additional resources and widening the research and teaching agenda". Also Rinne and Koivula (Rinne & Koivula 2005) criticise that knowledge society is frequently referred to from economical aspects only and not taken in a wider concept. Taking the term knowledge society with a broader view, we can consider the setting up of a university alliance as entrepreneurial because it leads to innovative academic behaviour. This is a pro-active way of taking part in recent European developments concerning higher education. In the following I present an example of an alliance of European technological universities and discuss the accomplishments of this alliance, how it developed an identity, and how it can be situated in the current European landscape of education, research and innovation.

Educational collaboration in an alliance

Collaborating is easier when you have a number of commonalities. In the case of the IDEA League this is the type of institution: all partners are technological universities and are ranked first in engineering in their respective country (THES 2005). The institutions participating in this consortium are Imperial College London, UK, Delft University of Technology, the Netherlands, ETH Zurich (Swiss

Federal Institute of Technology), Switzerland, RWTH Aachen University, Germany, and recently ParisTech (Grandes Ecoles de Paris), France. Actually, the signature of a Memorandum of Understanding to mark the foundation of the IDEA League came about at the same time as the Bologna declaration, in autumn 1999. ParisTech is joining as fifth member of the alliance in 2006.

Initially, the alliance focussed on educational matters. The collaboration in quality management of education resulted in the establishment of a set of quality management principles (Büttner 2002), but the collaboration went further with the comparison of study programmes not only in engineering disciplines, but also in natural-science subjects. The partners established joint competence-profiles of the qualifications and skills of their graduates in a number of subject areas. This development generated a joint format for the diploma supplement which is now part of the degree papers of the graduates. Thus, graduates not only have the details of one university, but the diploma supplement gives reference to comparable institutions in other countries which can be an important factor of employability for science and technology graduates. In addition, this outcome fits well with the Bologna process which required the introduction of diploma supplements in order to provide for more transparency when comparing higher-education institutions.

The educational comparison offered other opportunities of intensifying the collaboration of the partners: investigating the possibilities of setting up joint master programmes. We tackled this undertaking from two sides, on the one hand by looking into the administrative aspects of such a joint venture, and on the other the academic aspects of putting a curriculum together using the complementarities of the institutions. In autumn 2007, the first students will enrol into this 2-year master programme in applied geophysics, starting with their study in Delft, subsequently moving to Zurich and Aachen. It is an ambitious programme not only from its academic content, but also aiming at a coherent implementation, jointly administered. The programme unites admissions regulations, quality management of the programme, course and examination regulations, and it aims to award one joint master title to their graduates and not a multiple degree of the participating universities. A major step was the agreement on joint course and examination regulations taking into account the regulations of three institutions in different countries. However, one more hurdle needs to be overcome concerning the award of one joint degree. For this, it will be required that parts of the legislation in the countries of the participating universities need to be modified to accommodate this. The process of initiating this change in legislation has started and it is expected that a new law will be passed before the first students graduate.

The concept of joint masters is also fostered by the European Commission: in 2004 they introduced the Erasmus Mundus programme (Erasmus Mundus 2004) in order to encourage the establishment of joint master programmes across borders. Erasmus Mundus provides funding, mainly for scholarships, but does not provide support when tackling any questions concerning legislations and regulations between European countries. Nevertheless, it is helpful to have Erasmus Mundus concerning the administrative matters because it raises awareness, lays a finger on the problematic points when collaborating in European higher-education across borders, and draws the attention of the ministries of education. In addition, the European University Association (EUA 2006) with almost 800 members in 45 countries supports its university members by investigating the differences between the

European countries in a number of reports. In one of their latest reports they provide guidelines on the quality management of joint master programmes.

Building an identity of the alliance

Finding commonalities between the partner universities is an important starting point to set the scene for building an identity. In order to make an alliance successful it is essential to build trust for accepting and intensifying information exchange and finally, promoting active cooperation. In order to work on joint projects and products, commitment of all participants is required. These features form the basis of developing an own brand name for the partners respecting the differences, and making the systems transparent.

In the case of the IDEA League the network organisation is rather light in administration, with a secretary general managing the network. The IDEA board, consisting of the heads of the universities, discusses strategic issues and sets the short and long-term agenda. The chair of the alliance is elected at the general assembly and rotates between the partners on a two-yearly basis. An advisory/coordination committee with a representative from each of the institutions supports the respective heads and forms the link to the secretary general. Together the five institutions comprise over 100,000 staff and students, with a student community close to 80,000 of which 16% are doctorate students. On average, slightly less than a quarter of the student population is international. The IDEA institutions are research-intensive universities with about 50% of their income being invested in research. A breakdown on the facts & figures by institution and the organisational structure is given by Büttner (Büttner 2005).

Internal communication is an important issue for building an identity. Therefore, from the start of the alliance a two-monthly newsletter was issued. Widening the activities of collaborations in order to enlarge the community is a vital approach, but takes time. In its first year the League started with three working groups, but has now spread to over 25 groups; not including many of the emerging bilateral connections. Like this, a broad support in within each institution is put in place not only covering distinct scientific domains, but also more general areas, such as communications, internationalisation, ethics, and so on. Spreading the activities of collaborations over such a wide range noticeably helped raising the awareness. An important building block in establishing an identity was the notion of developing an independent house-style of the alliance before any major communications tools were put in place. Setting up a web site was the obvious choice of presenting a collaboration whose physical locations are spread in Europe. The web editing is managed in four-monthly turns of responsibility between the partners; this rather short rotation period being found useful to keep the momentum going.

Another mode of building identity is to issue joint statements. Although the political landscape is quite different in each country, statements display collaboration across borders that overcome differences and show respect for each other. Further, it represents a voice with a broader reach and is hence useful in the European area with a great number of countries. In addition, statements and position papers provide the opportunity for each institution to review its strategy and implications. This

might even lead to new activities, because it is recognised that additional information would be valuable for further iteration.

Together these features contribute to a brand name comprising the individual, traditional trade-mark of the institutions on the international scene. Strategic alliances are an important driver of internationalisation: a survey by the International Association of Universities (IAU 2005) shows that higher-education institutions rank strategic alliances as the second most important point (20%) in internationalisation after competitiveness (28%). Further topics recorded were human resource capacity (15%), international cooperation (14%), cultural awareness (9%), education exports (7%) and regional priorities (7%). From a national point of view, competitiveness receives a much higher importance with 44%, but strategic alliances keep their second place with 19%.

Benchmarking and networking

Competitiveness came into higher education due to mass education when market forces became an issue. As one of the results we can observe an increasing number of university rankings in national league tables, also world wide. Altbach (Altbach 2006) points out that international ranking is particularly difficult “universities have different missions and goals – and ranking tends to ignore these issues”, because rankings rely on facts & figures like number of publications, external funding, but not more intrinsic features, such as the quality of teaching. Although rankings have their flaws, there is benefit in comparing higher-educations institutions, especially for students, and their parents, who invest considerable amount of money in their education. One step towards improving the way of carrying out rankings and the methodology used might be the recently published “Berlin principles on ranking of higher-education institutions” (UNESCO 2006). They provide guidelines on the design and weighting of indicators, collection and processing of data, the purpose and goals of ranking, and the presentation of the results.

Apart from league tables, higher-education institutions can embark on schemes to improve their institution, ultimately making them more competitive. Establishing a university alliance offers the possibility for benchmarking between the participating institutions. The partners of the IDEA League use this as a standard feature of their collaboration in order to improve their internal processes, also aiming to make the processes more transparent. As Brandenburg (Brandenburg 2006) says “benchmarking is a deliberately self-focused activity of higher-education institutions with the final goal of improving their own performance in defined fields”, whereas rankings focus more on the accountability with a strong evaluation aspect. One of the first activities of the alliance was a rather complete questionnaire covering education, research, human resources and other operational factors. This helped in two ways: firstly, to get to know each other better and second, to build confidence between the partners. However, by carrying out such comparisons we rapidly realised that there can be a rather different understanding of certain references. As a result we have now defined a data set, so that facts and figures can be compared easily on a regular basis. But benchmarking in the IDEA League covers not only facts and figures, but also quality assurance in education, processes in admissions and mobility, internationalisation, communications, to name a few.

In this way we have established a network between the institutions, but due to the external links of each partner this web also grows into other networks. Whereas in research this sort of networking is a rather common approach, it is still rather novel in the more educational and administrative part of universities. The IDEA League partners appreciate this networking, i.e. exchanging best practice and sharing intelligence are important gains, because this makes the alliance stronger than the sum of its parts. The collaboration in the alliance also offers the possibility to bundle efforts in research. For this the alliance organised an internal forum of its heads and leaders in research for a brainstorming session. It was a selected group of about 15 people who met in a monastery in Switzerland for two days to compare, discuss, analyse and summarise the research strategies of the partners. This resulted in the establishment of a white paper on the research strengths and a working group which looks into possibilities of sharing facilities and fostering research collaborations further. The industrial connections are also considered in these discussions because all partners have strong links with industry. Putting these elements together, the alliance laid the ground to become a recognisable player in the European arena.

European Institute of Technology (EIT)

Recent developments in Europe like the impending formation of a European Institute of Technology (EIT) give more impetus to networks, because they are considered as stakeholders. The EIT is regarded as a means to close the gaps in the knowledge triangle of education, research and innovation. The idea came about when monitoring the Lisbon strategy (Lisbon 2000): the 2005 interim report of the Lisbon strategy showed that Europe is not within the margins set for excelling Europe's competitiveness by 2010. Therefore the concept of setting up an EIT was launched by José Manuel Barroso, the EC president, in spring 2005 (Barroso 2005). In the considerations and discussions that followed the main lead was taken by the higher-education institutions and to a lesser extent by industry. A public consultation was carried out and the results formed the basis of a proposal to set-up an EIT. The proposal was supported by the March 2006 European Council (EC comm. Mar 2006), but they asked for a more detailed layout. As a consequence, the EC held a number of stakeholder meetings in which they discussed the governing board, participants in knowledge communities, human resource policy, implications in intellectual property rights, legal issues and so forth. An interim report to the European Council in June 2006 (EC comm. Jun. 2006) presented a first concept: the main players will be a governing board and knowledge communities.

The governing board should be an independent and autonomous body setting the strategy and allocating the budget, supported by a light administrative structure. It will identify the main themes on which the knowledge communities will work, select the knowledge communities, and monitor and evaluate their progress. The board members should "provide an even balance between scientific and business experience" and be selected due to "excellence in science and innovation" (EC comm. Jun. 2006); they could be assisted by external advisory committees in their decision process. A knowledge community will be a partnership of excellent teams/departments coming from university, industry and research centres tackling technological key areas with business relevance on a long-term commitment

of 10-15 years. By combining education, research and innovation the knowledge communities will be the core of the EIT driving the knowledge production, transposing it to other sectors and hence, contribute to the competitiveness of Europe. The governing board is charged with setting out the selection criteria for the knowledge communities. One can assume that they will look for:

- scientific and technological excellence;
- good relations to industry with strong involvement in technology transfer;
- access to (large-scale) facilities;
- excellent, innovative educational programmes;
- sharing a vision of regaining Europe's international position in science & technology.

Since human resources and staffing arrangement are delicate points each knowledge community can choose its own operational structure, but within the overall framework laid down by the governing board.

As added values of the EIT (EC comm. Jun. 2006) the EC sees an offer to the private sector for a new relationship with education and research that goes beyond what exists today. Integrating universities, research centres and companies will represent a concentration of resources and will closely combine the three sides of the knowledge triangle. In this way it should provide significant opportunities to attract private finance to the EIT. Taking stock of everyday life, Swain (Swain 2006) points out that academia-led innovation has entered every-day life with many products: reaching not only from cosmetic products to health-care products, but also touching industrial sectors such as communication technology, transport, leisure and many others. This continuously influences our life style. A close relation of academia and the industrial and commerce sectors provides an important driving force in our progress and has a global impact. The EIT concept supports this and aims to establish a prestigious flagship in Europe.

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