

CHAPTER

Networks and Strategic Alliances within and between Universities and with the Private Sector

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INTRODUCTION: THE END OF SPLENDID ISOLATION

It has become quite obvious; no one can do it alone anymore. It is even doubtful if that was ever possible. But now there even seems no opportunity to escape the need to cooperate with a large and diverse group of partners. Splendid isolation is now impossible. But how to cooperate? With whom? To achieve what?

Scientists contribute to an extensive body of knowledge that has been constructed over the ages and around the world. More and more knowledge is being produced at an accelerating pace. Estimates say the amount of knowledge now doubles every five years. As a consequence, the shelf life of knowledge is declining rapidly. Accordingly, the costs of research have to be recovered in ever shorter time periods.

Modern information and communication technology has arrived just in time to cope with this impressive explosion of knowledge creation and sharing. State-of-the-art information and communications technology already contributes decisively to this process. Informing and sharing, however, is one thing; active cooperation and partnership, another.

This chapter will be about cooperation and partnership, about creating conditions that can bring together persons from different backgrounds and affiliations and, through them, their departments, institutions, or companies. This chapter will also be about conditions that can facilitate new and innovative combinations of disciplinary knowledge and specialists, and that can

facilitate knowledge transfer from universities to the private sector, from the industrialized world to developing countries.

GLOBALIZATION AND THE KNOWLEDGE SOCIETY

The processes of globalization and development of the “knowledge society” seem to be closely interlinked. One of the consequences is a rising dominance of market-oriented approaches to organizing and providing education and information services worldwide. Research and higher education are becoming much more utilitarian and their effectiveness is assessed on the grounds of their ability to provide effectively relevant information and skills for dealing with specific tasks. This situation places a greater pressure on the research and higher education systems to be responsive to the perceived needs of the society it seeks to serve. This trend was clearly reflected in the Memorandum on Higher Education, which was presented by the EU Commission in 1991.

Indicative of the type of resistance against such a development was the fact that this memorandum was *not* adopted by the national governments of the member countries because education—including higher education—was and is still seen as an important element in their policies regarding culture and national identity. However, this principle notwithstanding, the views expressed in the EU memorandum have since been introduced in many policy papers at the national level within and outside EU countries.

Universities are asking how their creative and innovative roles can be maintained under these new, rapidly evolving conditions. Higher education has increasingly become a regular part of the education career of the younger generations. When policy papers in the U.S. and France aim at participation rates of 80 percent of an age cohort, this goal clearly relates more to tertiary education than to higher education. How much creativity and innovation can a society or one generation really cope with? How fast can we change? Why should we change, and in which areas?

Higher education has become a big sector in public life. Its sheer size already demands differentiation: division of tasks, division of functional links, different patterns of cooperation, and, related to all this, different internal functional structures, communications, and cooperation patterns. Multi-faceted delivery systems in higher education and research are emerging, challenging the monolithic system dominated by universities and expanding the scope of services and competition within the industry.

We can already observe the emergence of such specialist higher education institutions as research networks and centers that perform tasks once considered the preserve of do-it-all universities. This development is further amplified by more cost-effective electronic communication that gives reality to

“virtual universities” and to global networks of research and knowledge exchange without national or regional boundaries.

How to realize “economies of scale” in terms of costs or quality while at the same time preserving challenging working conditions and managing diversity is one of the major challenges universities are currently facing. With the increasing knowledge-intensity of society and the higher demands put on universities, the need to cut costs while at the same time investing in essential, ever more expensive infrastructure, the universities have entered a period of cut-throat competition and selection. This competition requires a strengthening of the synergy within the institution and strategic coalition formation. Universities are confronted with several challenges: to build on existing strengths, using available quality in terms of academics and infrastructure; to create new product–market combinations while at the same time preserving the cultural role of the university and strengthening its ethical and critical contributions.

Neither the traditional academic “noninterference” approach, nor any “let one hundred flowers bloom” strategy will be of use here. Instead, strategies are needed that invite contribution, create synergy, and cooperate with respected, functional partners within and outside the institution. When we take a closer look, universities are seen to be much less different from (bigger) companies in the private sector than many academics prefer to believe.

WHAT CAN WE LEARN FROM THE PRIVATE SECTOR?

When we look at the private sector, we can distinguish a variety of patterns in cooperation generally linked to the different aims of the cooperating corporations. Patterns of “horizontal” cooperation occur when corporations within one industry branch work together in collective wage bargaining with trade unions, in negotiating collective insurance arrangements, in setting common standards on quality, in lobbying, or in doing collective (pre-competitive) research. For instance, in the last decade, the Netherlands’ Association of Universities (VSNU) clearly went in that direction. At present, it sees itself as an employers union.

In patterns of “vertical” cooperation, partners from different branches act as suppliers or consultants. These patterns have become increasingly important since the “big is beautiful” ideology has been superseded by the “small is beautiful” approach and eventually by concepts that try to combine the advantages of big organizations with those of smaller scale working environments.

This development has led to mergers in which the original corporations keep their identity (and brand names) and continue to function largely as separate units (e.g., Heineken and Brands Bier, Paccard with DAF-trucks and

British Leyland, and Daimler Benz and Chrysler). Corporations have also been led to reconsider their organization and structure to get back to their “core business,” to split off useful but different activities, and to outsource specific tasks. Such developments are no longer a shock to a world that has grown accustomed to middle-class Volvo cars with Renault engines and Mitsubishi coming from a Volvo factory in the Netherlands. This type of development is also not unknown in the world of higher education. In the Netherlands, all the major polytechnics are the result of mergers on the basis of geographical and functional arguments. In France, the “*pôles universitaires*” have tried to mend the harm done by the splitting up along disciplinary and ideological lines of many of the existing universities after the cultural revolution of the late 1960s. The World Bank supports a project in Hungary to merge the many sectorial universities of often very different quality levels into large regional universities.

Such a cooperation pattern can be developed in different ways. Sometimes these have a strongly *hierarchical* nature, e.g., where a multinational company prescribes production and quality standards and even prices to suppliers. These patterns, however, can also be of a more *coordinative* nature, e.g., in cases in which two competing companies set up a joint research program or agree to accept the same standard for new products. The successes and failures that have occurred in research programs and in setting standards in advanced consumer electronics between all relevant corporations, such as Mitsubishi, Sony, and Philips, form a good illustration of the opportunities and difficulties in this area.

In the world of professional sports, the same patterns are developing. Even in higher education, these same patterns appear when, for instance, universities develop strong links with the best secondary schools to ensure both volume and quality of the new groups of students. This cooperation can involve teacher training, curriculum development, or education research. Comparable patterns can develop between medical faculties and hospitals and general practitioners in the region, or between engineering faculties and industries.

CREATING EUROPE: ROLE AND STRATEGIES OF HIGHER EDUCATION

In the development of European Union education, higher education has played a pivotal role from early on. In fact, there seems to be a paradox in the way in which regional governments regard higher education from one side as a topic of primarily national interest, and at the same time use it to prepare the European citizen of tomorrow. Of course, these two points can be reconciled on the basis of the shared vision of a culturally diverse Europe, which sees and

exploits its cultural diversity as one of its strengths. Student mobility and the implementation of this vision through a growing number of networks serve the aim of educating a new generation that understands and supports this vision of the richness of cultural diversity.

The Erasmus-Interuniversity Cooperation Projects (ICPs) and the Tempus Joint European Projects (JEPs) have proved to be most successful in this respect. These EU programs were organized largely via discipline-oriented networks. Thus, institutional participation in the programs required membership by the individual universities in many disciplinary networks, sometimes over 100.

Although formally the institutions were members—the rector or president had to sign—in practice the departments, or even individual professors, were the aim of these networks. It was often not more than the organization of student mobility. The Tempus program, however, envisaged a broader cooperation between EU universities and universities in Central and Eastern Europe.

In the world of research, EU funding has often stimulated the development of small international networks. Their aim is to conduct research on a well-defined topic during a specified period of time. These networks seem to be more sustainable than the ICPs, probably because they are run by the researchers primarily for their own benefit.

The EU explicitly aimed at cooperation beyond the universities in the form of international training partnerships of universities and enterprises. The EU Comett Program stimulated such partnerships on a sectorial (disciplinary) basis or sometimes also on a regional one. This program was much less successful, primarily because of the added difficulty of involving industries. Now the Comett Program has ended.

The universities, however, have not only responded to EU initiatives. Gradually, they have understood the importance of cooperation, across the borders, in education, research, and even public service. Now that the new generation of EU programs defines completely different rules than the earlier programs, in particular in universities participating in their “own” networks, the programs have shown surprising flexibility and adaptability. Europe now has a series of strong, sometimes extensive, institutional networks, e.g., the Coimbra Group, the Santander Group, UNICA, and the Utrecht Network. In engineering and agriculture, strong thematic networks (CAESAR and NATURA) also have been developed.

UNIVERSITIES IN COOPERATION: ENVIRONMENT AND “ENVIRONMENT”

Linking universities' competencies to the needs of society not only means that we have to cooperate more with other universities and participate in networks with external partners, it also means that networks work with external partners, and that we have to change our internal organizational structure to be able to work together with partners from different cultures, e.g., universities in other countries, governments (local, regional, national) and their semi-autonomous agencies, and the private sector. Because life itself is not divided into disciplines, departments, or faculties, our partners in society and the business community will often demand answers to questions that have far more dimensions than one discipline can cope with. Besides, most scientific breakthroughs nowadays appear on the interfaces of two or more disciplines. This means that our universities cannot rely on their traditional academic organization only, an organization that in itself can already be questioned because it is so different from country to country and university to university. We must build matrix organizations wherein the disciplines meet in various combinations, different at different times, to cope with such complex issues as sustainable growth, the quality of human life, and the cohesion of societies.

But not only the “environment” demands interdisciplinary cooperation, nowadays researchers within one discipline look more and more over their “fence” to use paradigms of other research fields to overcome the obstacles they encounter within the paradigms of their own discipline. Do we not often read about the evolutionary model, familiar in biological science, as an inspiring source to gain insight into complex sociological problems, or about communication and information technologies when trying to explain the function of DNA? So the “environment” also seeks new combinations of disciplines to innovate and break through the old paradigms.

The “coordinating capacity” of the institution is then the crucial factor: Who can oversee the various scientific disciplines that change agents within departments, the emerging bright young academics, or the new topics? Who can link the outside network with the inside matrix, the *environment* with the *in*vironment?

Within the university, research institutes and schools that provide a certain thematic coherence between different disciplines appear to be important organizational tools for the interaction with the environment. As temporary structures (in fact any structure like a center or a task force appears to be helpful) between established departments and faculties, they bring innovation and external orientation without abandoning the disciplinary “roots” of their research and education. Between universities, they offer clear objectives in the form of research and educational programs in which every university can

participate with projects and research groups that excel in their field. Between universities and industry/government, they offer programs that seek interdisciplinary answers to complex demands from society.

REGIONAL, NATIONAL, AND GLOBAL PATTERNS OF COOPERATION

A chessboard with more than two dimensions then emerges. We work together in disciplinary and problem-oriented programs with many partners, both within our university and in the outside world at the regional, national, and global levels.

Some parts of our universities participate in networks to exchange Ph.D. students. Others work together with industry to find new medicines. Some groups work together with European universities to solve issues in urban and housing research, while at the same time working with government-funded research institutes to develop a new concept for compact cities and the reduction of automobility. Many networks exist at different scale-levels, interlinked through nodes at different hierarchical levels.

Again, the self-organizing and coordinative power in a university is crucial to be able to play this interesting game of multidimensional chess. One of the ways to get a grip on these networks is to make them part of the university strategy. This means, of course, that universities can make a choice in which networks they want to participate.

Certain networks are crucial for the strategy of the university. For example, many of our universities are faced with decreasing state funding as a consequence of strategies to balance the state budget. If we do not want to compromise our ambitions and objectives, we have to pull away from the traditional overly strong dependency on state funding and gain more financial autonomy. Those networks that enable us, through cooperation with partners in the private sector, to find additional resources must have a high priority in our strategy.

For another example, if a university wants to excel in a certain field of research within an international context, finding highly prestigious, excellent partners to work with has to be its first priority. To be able to find such partners is the strongest recognition a university can obtain.

In the strategic development of its cooperation patterns, the university will have to strive for efficiency and effectiveness. To make work with work, to make double or even triple use of the same work, is a golden rule. The sustainability of the cooperation is another important ingredient for efficiency. Long-term commitment means more in terms of willingness and real cooperation than a short-term contract. Such cooperation and commitment becomes even more concrete when these are materialized in specific, even bilateral,

agreements between a few partners only. Strategic alliance is a concept that has proved, at least to Utrecht University, very helpful in creating stronger commitments.

Reflecting on the interactive, long-term, multi-dimensional perspective just discussed, we can see that the traditional concepts of contract research (or education) do not easily apply to the type of external cooperation that is needed, such as agreement on long-term objectives, commitments, mutual investments, and quality of processes, and on how to make an exit. In this type of cooperation, the relationship no longer has the characteristics of a transaction or market contract but of an organization (much like a joint venture). In the first year after this policy was introduced, Utrecht University was successful or lucky enough to conclude strategic alliances with two large, innovative international pharmaceutical companies. In the next year, alliances were formed with a transnational in consumer electronics and medical equipment and a national ministry. A major advantage of the long duration (8 to 10 years) of the alliance and the loose formulation of the objectives is that such alliances are much more compatible with fundamental/basic research than was the regular contract research.

CONCLUSION: DYNAMIC PATTERNS OF ORGANIZATION AND COOPERATION

The foregoing discussion shows that patterns of cooperation have become very diverse and dynamic, depending on the state of the organization, what is inside or outside, how it is organized, and what cooperation can be interchangeable and, indeed, changes over time. What is important, however, is to have a clear idea of the core business and the ways in which this can be furthered by strategic development of functional structures and relations. In this, we can still learn much from practices developed in the private sector. In Europe, the EU has greatly stimulated this process by its programs in higher education and research.

REFERENCE

European Union Commission. (1991). *Memorandum on Higher Education*. Brussels: European Union.