MANUSKRIPTE ZUR EMPIRISCHEN, THEORETISCHEN UND ANGEWANDTEN REGIONALFORSCHUNG

Intra- and interuniversity competition and cooperation within the Berlin region

Paper presented at Cross-Border-University Conference Copenhagen, November 2000

Gerhard O. Braun



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Titelfoto: Manipulated Fotofinish of the 2000-University-Race (Birk 2000)

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Contents

Introduction	4
The meaning of competition and cooperation	4
Theoretical background of the competition - cooperation concept	4
Academic markets, products and potential	5
Changing conditions	6
Changed conditions as to competition and cooperation	7
Empirical evidence	7
Conclusion	9

Introduction

Berlin could act as a model for a cross border university region while linking the regions of Berlin-E and Berlin-W as well as of Brandenburg. The main difference to the subject of the Ore-Sund-University is that the integration takes place within the same governmental regime. In the latter case, different national governments compete with each other in supporting this idea and try to push their own contribution in the forefront to receive - at least - the overall pioneer wins. In Berlin the situation differs significantly.

The meaning of competition and cooperation

For two years now, the Berlin universities, the Humboldt University, the Technical University and the Freie Universität enter into competition with each other in rowing (Fig.1). Their president teams start on the Olympic regatta course of 1936 in an eight-rowing boat to pit their physical and mental strength against the other two teams and to have fun. What was once intended as a challenge from a sporting point of view, it seemed to be turn out into a less sporting seriousness, provocation and rivality under the pressure of media and public. It seems to be that the public needs to position and to rank teams, persons and even universities in a hierarchical scale whether it is meaningful or not. Especially after those events the media press treats sporting performances as equivalent to academic performances. While the public is simplifying, one-dimensional competition is asked for, and the way how people and the public know to handle competition leads to changing conditions and attitudes, quite often to manipulations, to making an effort in gaining advantages against the other competitors. In the beginning, the main competitor is the competition, the boat, the water conditions and the rowing technique, later the competing boats and the physical and mental condition of the participating teams as well as the public pressure becomes more effective. All at once, not only the own performance counts - the performance can be excellent measured absolutely and relatively in relation to ones own condition - but also the performance counts in relation to the competitors independent of ones own conditions.

This example may show you that the term competition can be seen in quite a different view. However, it is important to realise that in general the relationship between university ranking lists and the attractiveness for students to study there is not significant, but in specific the relationship between ranking results and the top 20% qualified students and their decision for top ranked universities is highly significant. This may indicate that competition is going to change the general conditions for universities and that university relationships are subject to change.

Theoretical background of the competition - cooperation concept

Therefore, it is necessary to elaborate what is meant with the term competition and in the same way with the term coalition or cooperation. As defined in socio-ecology and experienced in our rowing regatta, in the beginning competition is unconscious and impersonal, however unlimited in time. When times goes on, competition is going to be limited in time and restricted by social control, however, conscious and personal. Socio-ecologists describe this situation as a two step development:

During the first step, entitled as biotic level, competition is the basic form of interaction between individuals. Within this view, the biological competition is seen as equivalent to the economic competition. Only when the resources are unlimited there is no competition and boundless freedom. The stronger the competition the more is the individual freedom restricted, finally ignored. Only social control is able to limit competition and can lead to an very weak equilibrium and permanently changing structures. The social level is the result of social control. Competition should not end in total destruction and ruining of the competitors but in superseding and displacement of losers. A system mechanisms defines social control via regulations through communication and common sense. These mechanisms are first of all division of labour through specialisation, which, however, creates dependency between the former competitors. The second and third mechanism produces via interaction cooperation and finally structural homogeneity via social contacts. This concept indicates that

- competition and cooperation are two sides of the same coin, they are polarised and interdependent, and
- structural homogeneity is formed by a hierarchical design of interdependent, networked previously competitors.

At both levels there is a tendency towards an equilibrium, which can be easily disturbed by intervention from inside and outside first of all by political intervention, while otherwise the processes of reduction of conflict, accommodation and assimilation tend to balance the system.

Obviously, it is not hard work to transfer this concept into the socio-economic system of universities. Scientists, departments, faculties and universities are competitors on different scales for resources in a complex system. Experience shows that the degree of stress for all kind of university resources creates different constellations of dependency which are obviously necessary to achieve success. Even academic ivory towers depend on those constellations. Without losing track, the best way to reduce daily competitive stress is to define cooperation between stimulating and supplementing competitors. Such structures are able to design a networking and successful homogeneity, one of the preconditions for a successful academic environment.

In this respect distance – spatial and social distance - plays an important role. Despite advanced information- and communication technologies those systems depend - as experience shows - on minimum distances as well as on optimal accessibilities (Fig. 2). In the academic environment there is no difference as to the daily life, where human beings have an natural aversion to all other human beings when distance comes too close. On the other hand to make use of person to person contacts especially in resolving trans-disciplinary problems related neighboured disciplines and collaborators should be spatially close. Short distances often disliked within the same discipline are likely welcome between neighboured disciplines. Most welcome are short physical distances to infrastructure which also can compensate for too short personal and discipline distances. These relationships are true especially on the local and regional scale. Dissonances between these different types of distances disappear with increasing internationality, while the attractiveness to cooperate with far distant colleagues and institutions is increasing.

Academic markets, products and potential

Science and competition are in general not different in nature. By contrast, science depends on competition for the best ideas and resolving concepts. Competition creates scientific attractiveness even if competition becomes more and more confused and strong. Therefore, politicians bear in mind, that a consequent orientation towards competition in the field of science and science organisation requires entrepreneurial activities. Such an assessment can be helpful with regard to personal and budget conditions, however it can turn out in an misjudgement to believe that academic performance depends predominantly on money and output is strongly related to the input. Under economic view, competition is related to an existing real market, which regulates supply and demand for a specific product. Even it is hard to define what academic products are - number of graduated students, publications, patents, evaluated research, research grants, basic or applied research - the marked for these products is not clearly defined. Even in economy, coalition is not an counterpart to competition.

Economies of scale based on agglomeration or competitive advantages help to create a critical mass and the condition for further specialisation. How backward and forward linkages can be transferred to university research and education structures, should not be discussed in greater detail. Despite missing analogies universities are confronted with the fact that politicians treat universities as companies and their monetary and non-monetary input-outputrelation and effectiveness is evaluated under conditions of production.

Under more modern understanding, competition and cooperation are not directly related to the idea of products but to the potential, turnover and control functions of a company i.e. also of a university. Coalitions are too secret to be reported while competitors can be ignored, however, they are well known and permanently monitored.

Under these aspects, what can be the reasons for further competition and consequently also for stronger cooperation? Academic competition is related to different spatial scales. On local, regional and national scales the driving forces are more monetary resource and human potential based than on international scale. On the latter scale the reason for competition is caused by the fight for academic excellence and personal and institutional alliances. While many scientists complain about local competition, the real competitors are global ones. In such an international competition an local academic system can only survive when its know how is closely linked and organised between the local competitors, the local non-university research institutions and free marked economy based research groups. Cooperative networks should be defined by local competition, work for a limited time and directed towards a clearly defined and commonly agreed goal, in order to be prepared for global competition and/ or coalition.

Changing conditions

To get ready for this restructuring process, universities in Germany and especially in Berlin experience dramatic change. The present structural plan as to the Berlin universities is based on the public budgetary planning laws in 1996, when the maximum number of student-places have been limited to 85.000. This plan means that the Freie Universität has to accept a reduction from 39.000 student-places to 26.000. Between 1990 and 1999 the number of full professors decreased from 700 to 440. The plan for 2003 additionally reduces the number of student-places down to 21.000 and the number of professor positions down to 368. The real number of students has to be seen independent from this decision. This number decreased from 62.000 to 42.000 at present, only the number of professors becomes true. In this respect the

3 major universities in Berlin have to compete for their public funding and increasingly for private funding within a very weak sponsoring milieu. The Freie Universität total budget shrunk from 640 Mio. DM in 1993 to 530 Mio. DM, where the share of consumptive expenses eats up about 80% of the total budget. To enable the departments and faculties to keep track with the international research development and to renew research infrastructure the share of young academic positions reaches only 80%. In this respect the three universities suffer almost the same conditions.

Changed conditions as to competition and cooperation

However, this shortage changed also the internal structure of the universities and the relationship between the universities. While the faculties became more powerful, the universities agreed both to concentrate on their key disciplines and to function as full universities. Smaller departments in one university depend on cooperation with the related department of the other two. Even larger departments depend on cooperation because of having access to large scale infrastructure what is mainly needed in natural sciences, medicine and engineering.

However, this cooperation has been many times and to a large extend confronted with old fashioned governance, when politics and research organisations treat universities as simply competitors in the sense of rivality - equivalent to the biotic level. All public control instruments try to make academic results accountable for their planning not for cooperating research teams but for traditional, isolated or hierarchical structures like chairs, departments, faculties or universities. Universities and their subsystems, however, function as networks and as open systems. The networks are scaled, they have an emergent property, their borders are fluid, they overlap each other and intermingle with each other, they span space without covering it. Modern universities, therefore, transcend boundaries of formerly hierarchical nodes and imply a different geography than that of familiar political spaces. Most of these research networks are based on information exchange and on interaction in both reaching and research. In teaching networks share different specialities, in research they join specialities.

In this respect all university have to fight on two fronts: on the one side on the public and media front which tends to one-dimensional ranking, and on the other side on the front of requirements for science and education as well as of changing conditions.

Empirical evidence

In the following let me explain some empirical evidence (Fig. 3). The following map shows the spatial distribution of the three main universities each in their own colour as well as the locations of the main non-university research institutions. The map clearly indicates that the universities are spatially separated but having differing competitive advantages respectively disadvantages in relation to the locations of non-university institutions. The latter have the opportunity of preferred access to important technological infrastructure while the universities offer well qualified students.

Within the Berlin region, all universities would agree that the need for cooperation is crucial. However this evaluation doesn't mean that each university wouldn't try to find its own independent solution for the political challenges at present. The universities can not afford to give up their local strength and independency as long as the governmental regulations are as strict demanding as they are. Nevertheless, there is a common understanding that despite externally set off competition cooperation remains as the main strategic goal to survive in a global competition.

There is no question that especially students have the freedom to register all open courses as well as to make use of all libraries and other facilities within the Berlin university environment. Course-contents, credit points and examination conditions are harmonised, distance education is strengthened by joint programmes. All these activities are free of monetary compensation even if there is severe disgrace, e.g. when one university sends its registered students to the next university library just to save its own money. The following map shows the spatial distribution of all minor subjects chosen by geography students to be selected for their diploma examination (Fig. 4). These disciplines belong to all three universities. Cooperation in higher education is common and it is expected that costs and expenses for services between the universities and all disciplines sum up to zero.

Berlin-wide cooperation within the field of research is just as common and Berlin is far ahead leading in research grants compared to all other German research agglomerations (Fig. 5). Berlin concentrates 17 top research groups (Sonderforschungsbereiche) and 26 post-graduate schools and organises hundreds of cooperation contracts with universities as well as trade and industry companies abroad. The total amount of external funds sums up to some DM 548 billion within a three year period. Within these research groups and schools, professors and their teams of all universities, colleges and non university research organisations (i.e. Max-Planck Institutes, Fraunhofer Institutes, or Institutes of the Helmholz Society) share these activities. They not only participate in common infrastructure like high speed data high ways but they also depend on the scientific results of each other. But when it comes to the yearly report to the government then it is important to which university the chairman or president of the different research groups respectively schools belongs to.

The next diagram will show you the ranking of universities as to research grants, where the top 20 universities receive more than 50% of the distributed money and where the Berlin universities are listed within this group (Fig. 6). The specific rank and the changes in this rank are the main measure for political evaluation and future planning for the specific universities. The fact that the total budget for all universities is limited results in an zero-sum-game in increasing disparities when one university tries not to dominate the other ones. This treatment can be the end of fruitful cooperation.

The following scattergram describes the twodimensional distribution of universities when ranked by research grants per scientist (Fig. 7). This scattergram compared with the next one indicating the distribution of grants per professor will show you that the preconditions of Berlin universities to be compared with the each other are quite different (Fig. 8). The comparison indicates how different the research groups are structured by manpower and what power statistical numbers can be given when only used in a non responsible way - the comparison between the two figures is shown with the arrows expressing the different two-dimensional locations.

The need for and dependency on strategic alliances is as important as the local performance (Fig. 9). Within this competitive market you will find out, that strong universities only cooperate with strong other universities. The strength can be measured in both

- the size, performance and research grants but also
- the future academic and economic potential, the number of talented students or regional milieu.

All three Berlin universities cooperate with strong universities abroad. However, it can be clearly shown that all Berlin universities cooperate with almost different universities abroad (Fig. 10 - 12). That means that cooperation with other universities abroad is part of local competition despite local cooperation.

To sum up the empirical evidence. The following model concludes the range of competition and cooperation, forced and un-forced, internal and external cooperation.

Competition and cooperation are two sides of the same coin, they depend on each other in the same way as they polarise in inconsistency. Competition respectively cooperation on the local or regional level does not include competition respectively cooperation on the national or international scale.

This result varies significantly when the pattern of internal and external competition and cooperation is compared on personal, departmental, faculty and not only on university level. The pattern shows quasi random structures the more the scale is spatially disaggregated. Nevertheless, all individuals tend to focus their academic goals and tend to concentrate their internal and external pattern of cooperation. Centres of excellence in a global composition are the strategic aims in a competitive world.

Conclusion

In modern concepts of organisation, however, centres don't play the same role as in previous ones. Delegation of responsibilities, decentralisation of decision-making, competition between teams on different spatial levels are the best preconditions for innovation and increase in productivity. They guarantee better flexibility and higher quality output than centralistichierarchical systems.

- Not only one centre, but many competing centres,
- not hierarchical communication, but networking,
- not centrally governed division of labour, but unfolding of different talents in competition and cooperation based on the principle of division of labour

are the preferred concepts of organisation in the post-fordistic environment. Sometimes, the loss of local dominance of one of the universities can functionally turn out as a long-lasting win. Centres can be located everywhere where academic disciplines resolve future problems and where the academic environment is prepared. Let me conclude by resolving the question about the regatta course. While in the first race in 1999 the Freie Universität was very polite and let the other two teams pass, in the second race in 2000 the same team improved and finished second (Fig. 13; the photo finish has been manipulated by distance just to show all three boats in one photograph). Competition can be measured in the case of a race by time, in the case of university activities it seems to be more a political question if simple input-output-relations are a sufficient measure.

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Nevertheless, competition should not end in destruction for the defeated teams. Like in sports, even the last ranked university will reach the finish line.

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Fig. 1

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Source: FAZ, 24.6.2000



Source: G. Braun, 2000 -



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Fig. 5



DFG-Bewilligungen 1996 bis 1998 je Hochschule und Wissenschaftsbereich (in Mio DM)

Source: DFG, 2000



Source: DFG, 2000

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Abb.13: DFG-Bewilligungen 1996 bis 1998 an Hochschulen absolut (in Mio DM) und je hauptberuflich tätigem Wissenschaftler (Stand: 1998) (in TDM) Quelle (Personalangaben): Statistisches Bundesamt

Source: FAZ, 24.6.2000

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tätigem Professor (in TDM)

Quelle (Personalangaben): Statistisches Bundesamt

Source: DFG, 2000



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