

### Title

Coincidence or Governance – Requirements and Strategies for the management of regional activities of German Higher Education Institutions

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### Keywords

Higher Education Institutions, regional networking, knowledge transfer, institutional incentives, university-industry collaboration, public-private partnerships.

## Objective

In recent years, German universities and other higher education institutions (HEIs) have been subject to rapid changes with regard to regulatory framework conditions, and expectations expressed by political actors which favour regional engagement for different reasons. Consequently, some professors as well as HEIs' administrations have developed strategic approaches, the intended purpose of which is to improve regional engagement. In a recent study of regional activities of German HEIs we explored those "strategic approaches" and detected diverse forms of regional engagement, both to address internal challenges and to meet external policy expectations. As novel features of HEIs' regional partnerships we observe three distinctive aspects:

- They involve a wide range of public and private partners including research institutions, public and political authorities, enterprises, as well as societal actors or third sector organizations.
- In many cases those partnerships are no longer bilateral, but involve multilateral partner constellations.
- They cover not only ad-hoc, short-time collaborations but increasingly also long-term partnerships which are institutionalized in different forms (PPPs).

Arguably, these new trends pose new challenges and requirements with regard to the management of regional partnerships by HEI administrations. Against this background, our contribution seeks to analyze the following question:

What kind of governance approaches are employed by HEIs to utilise the potential of regional partnerships?

The **governance** approaches employed by HEIs encompass internal as well as external structures or mechanisms which lead to regional engagement. Internal governance approaches include incentive structures, steering instruments or overall strategies which cause action at different levels of HEIs, i.e. at the level of professors, faculties or the board as well as additional actors such as service units supporting technology transfer. We consider also the fact that regional engagement happens by **coincidence**, i.e. as a "side product" caused by incentives or structures, the intended purpose of which is not in the first place to foster regional engagement.

To that end, our contribution traces the processes through which (changing) framework conditions and internal structural characteristics of HEIs relate to their researchers' motivation as well as their managements' strategies with a view to regional engagement. More precisely, we will link characteristic types of regional engagement with different patterns of motivation and strategy. From these findings, we will seek to identify novel governance approaches that HEIs develop towards institutionalised interactions with their external partners as well as the intended outcomes of these joint approaches.

A particular emphasis will be laid on the issues of practises of the cooperation as well as expectations and benefits by the involved actors with regard to those partnerships (e.g. what about the role of the management level of HEIs? How is the cooperation coordinated? How are problems solved? By what means can institutionalized practices help to establish a common understanding between “science” and “business”?).

### **Approach / Methodology**

To exemplify these novel modes of regional engagement of German HEIs we will use three sources of empirical evidence. Firstly we will present quantitative data gathered through two surveys, an online survey of German professors and a paper-pencil survey of the management level of HEIs, namely deans, rectors and presidents. These surveys built the bases for a brief quantitative appraisal of the type of regional engagement and the involved regional partners. We opted for a broad survey approach, without restrictions on the type of faculties, departments or subjects to be able to reflect upon the high heterogeneity of German HEIs<sup>1</sup>. Secondly we conducted ten case studies of selected German HEIs to analyze the specific strategies and activities which members of those institutions develop to establish and improve the interaction with and the relevance for their regional settings. Within those case studies we interviewed HEI members to collect qualitative insights on the internal governance approaches and the external cooperation patterns that relate to regional partnerships. The findings of the case studies will build the main focus of our contribution and show how different HEIs deal differently with the newly emerging tasks deriving from the novel modes of regional partnerships as described above. By developing small storylines from the case studies we seek to illustrate how governance approaches (or coincidence) govern regional engagement.

### **Narrative and results**

Since the end of the 1990s, German universities are confronted with substantial changes of the general framework conditions concerning the external definition of their main tasks as well as the related internal processes of strategy formation. Ever since the German Hochschulrahmengesetz (Framework Act for Higher Education) was adapted in 1998, the task of knowledge and technology transfer has been legally enshrined as a third mission of HEIs. The new, amended law signaled the beginning pullback of centralized governmental steering efforts towards HEIs, resulting in a higher degree of institutional autonomy for German HEIs. Several other aspects like the introduction of New Public Management measures, the federalism reform of 2006 (Föderal-

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<sup>1</sup> The surveys were carried out between April and June 2011. Around 16000 professors as well as 1435 deans of different scientific fields and 366 presidents of HEIs were contacted. The return rate for the professorial level was 11.1%, for deans 27.8% and for the highest level of HEI management, the presidents, 39.6%.

ismusreform) and the resulting Excellence Initiative (Exzellenzinitiative) hallmark an increasing political dynamic concerning the German governance system for higher education. While some of these measures mainly target fostering internationally visible research excellence and high quality teaching, others encourage the HEIs to engage in economically expedient and socially meaningful actions. As one result the dimension of regional networking becomes an increasingly important criterion within the overall strategy of HEIs (Sondermann et al. 2008). In parallel, a notion of regionalisation of research and innovations policies can generally be observed (Koschatzky 2005; Kitagawa 2004, 2009). As a result, regional policy makers become able to actively address their considerable self-interest in the local engagement of residing research institutions (Asheim et al. 2007; Benneworth/Hospers 2008; Mayer 2007; Sternberg 2000). Hence it can additionally be argued that many HEIs have become explicitly or implicitly influenced by "enabling policies" that extend the range of their options for action.

As potential beneficiaries of related support programs, some HEIs themselves arguably turn into strategic actors through targeted observation of their surroundings (Krücken et al. 2009; Krücken/Meier 2006; Nickel 2004), while some time ago they only used to be objects of steering efforts by other stake holders. In this context concepts like "entrepreneurial universities" (Etzkowitz 1983) and the "boundary spanning roles" of university units (Youtie/Shapira 2008) have been discussed. These role concepts and the connected relevance in local knowledge and technology transfer-schemes (Charles 2003; Gunasekara 2004) represent a relatively novel experience for German HEIs – compared to American, British or Australian ones. At many German HEIs, the establishment and integration of a dedicated organisational unit for knowledge transfer is therefore an achievement of the past five years (Geuna/Muscio 2009). Thus, the concept of the "third role" of universities and universities of applied sciences is a comparative newcomer to the German political discussion and is less broadly accepted by academia itself. While discussions about the universities' regional role as human capital providers date back to the 1960s and a number of new universities were founded based on exactly this rationale, a more comprehensive discussion of the topic has only gained momentum over the course of the last decade (Schmoch 2011).

Our findings reflect this development and empirically display an increasing regional engagement of German HEIs as the survey at the management level shows: 79.3% of presidents and 64.9% of deans reported an increased participation of the professors at their institution in regionally-oriented activities over the past ten years.

Additionally the results indicate that HEIs seem to cooperate mostly with organizations which are not themselves HEIs. Companies are the most frequently chosen partners for regional cooperation (35.1%), closely followed by public institutions like federal, state or local organizations (29.9%). These numbers empirically underline the involvement of a wide range of public and private partners as mentioned above.

Accordingly the motivation for establishing regional relationships is rooted in several interrelated reasons, namely attracting external funds (with regional companies acting as contracting partners), striving for excellence in research by building strategic partnerships with public as well as private stakeholders or contributing to regional development involving local organizations and companies alike. Internal amendments regarding attractive conditions for students and employees for instance also play a major role.

To shed light on practices of and reasons for the cooperation of the actors, we developed a few "story lines" from case studies of German HEIs, where we illustrate the causal processes at work linking motivations and strategies to these (new) forms of regional engagement. As indicated above we would like to focus on two different strands of reasoning concerning the regional engagement. First, our findings pay attention to the fact that not all strategies or governance approaches of a heterogeneous actor like a HEI can be orchestrated in a coherent manner and that actions of actors located at different organizational levels or with specific functions might take place by **coincidence**. The Universities of Stuttgart and Göttingen will be presented as case studies in that regard. Accordingly the Technical University Dresden and the Leuphana University Lüneburg provide two cases of intentional governance efforts which fuelled the regional engagement and will complete our contribution.

### **The case of the University of Stuttgart: point of departure and mission...**

The University of Stuttgart is traditionally focused on technical sciences, and has a reputation in basic research as well as in applied research in these subjects. It is highly successful in the acquisition of funding for basic research from the German Research Foundation (DFG), in the acquisition of funding for collaborative international research from the European Union as well as in the acquisition of funding from the industry. The region of Stuttgart is a region of remarkable economic and innovative strength, it is the birthplace of the automobile industry, but also strong with respect to production technologies, energy and environmental engineering or aeronautics. No other region in Germany files more patents than the Stuttgart region. Naturally, collaborations between the university and the local industry are large in number.

These strong ties to the regional industry however are taking place at the level of professors and research groups, and often encompass R&D collaborations for specific industrial applications. They are rather the result of the individual motivations of professors to enrich their research activities and to leverage up their research group's third-party funding, than of an overall university strategy to engage with regional actors and build upon common strengths. In the past years, the strategic mission of the university mainly concentrated on national and international excellence in research and on better linking the technical with the non-technical disciplines present at the university.

**...and resulting actions: Research Campus ARENA 2036**

Rather late, the university board started to take a more strategic regard on the region and its strengths. Initiated by the regional business, in 2011 a formal collaboration between regional authorities, the regional business representation and the university (as well as other research and education institutions) has been established in order to join forces for maintaining the region's strengths and increasing its attractiveness as a region of knowledge and growth. The university has increased the personal capacities of the university administration in order to strengthen the strategic functions. Efforts have been dedicated to realizing a research campus, a long-termed and thematic-strategic partnership with other strong research actors, such as Fraunhofer research institutes (and other research organizations) as well as large infrastructures available in the region (such as from the DLR – the German Aerospace Center), and with industry. This new strategic regional engagement under the title ARENA2036 (Active Research Environment for the Next Generation of Automobiles) has only recently been awarded as a winning concept in the national research campus competition, which may bring for the next 15 years up to 2 Mill. Euro of research funding per year into the region.

**The case of the University of Göttingen: point of departure and mission...**

Already with its establishment in 1734 the foundation for the universities academic excellence-orientation has been laid. In its actual mission statement the University of Göttingen accentuates its longstanding tradition as an excellence-orientated research institution with a focus in humanities and natural sciences. As such, it primarily aims for strengthening its international reputation and competitiveness. In doing so, keeping research and teaching closely connected, mutually contributing to and critically reflecting on current societal challenges, while maintaining academic freedom and independence of scientific teaching. Its strategic concept is awarded by a federal funding program ("Excellence Initiative") and in doing so the university further strives towards basic sciences and top-level university research, being often of slight or no direct interest for firms. Fittingly, most scientists show little interest in and co-operations with the local economy remain challenging, due to a lack of suitable corporate partners. Local companies are usually small or medium-sized and often unwilling or unable to interact with the University for R&D related purposes. Besides, the university is surrounded by a remarkable and unique accumulation of extra-university public research institutions with a focus on basic research. Overall, the university and other public research organizations significantly shape the regional profile and a frequent statement made was "the university is the region". Thus the scientific institutions constitute the core of an academically oriented environment and are certainly a key economic driver for the region.

**...and resulting actions: Strategic turbulences and Göttingen Research Council (GRC)**

Nevertheless, this says nothing about how the University is also actively regionally engaged by itself. The strategic approach by no means was a coherent strategy of all university presidents. Around the millennium the former university management tried to implement new structure for local technology transfer to develop a concept for regional development via knowledge and technology transfer. But this approach failed, due to amongst other reasons inter-university resistance. It was replaced by the completely contrary approach, as described above. A central element of the strategy and thereby an inherently regionally-oriented activity, is an intense institutionalized collaboration with the local public research organizations. Based on previously bottom-up driven and centrally coordinated networks, the GRC now is core and nucleus of the future strategic planning and development activities of the whole "Science City Göttingen". A new small element in this strategy, are efforts to identify and convince sufficiently capable local businesses to engage as associated partners.

Besides these management-level activities, individual chairs are described as regionally intense and well networked, but usually highly intrinsically motivated and by no means supported by institutional incentives. These types of activities are initiated and incentivized at the individual level. From an institutional perspective regional engagement and interdependencies with the region seem to gain increasing attention as it constitutes the living environment and thus might become a conditioning factor in the strive for excellent researchers and prospective students.

Quite different in terms of targeted actions and (top-down) initiatives to the previous examples are the cases of the Technical University Dresden and the Leuphana University Luneburg.

### **The case of the TU Dresden: point of departure and mission...**

In parallel to supporting global co-operations in research and teaching, the Technical University is one of the few German universities that put a clear strategic emphasis on collaborations at the regional level. Accordingly, its mission statement includes ambitions to become a centre of knowledge and technology transfer and an embedded part of civil society that contributes to invigorating socio-economic development in the region. In practical terms, this is reflected in long-standing and broad-based co-operations with public research organisations, a significant number of business firms, and cultural institutions. To strengthen and broaden commitment to these existing engagements, the Technical University has recently initiated the comprehensive regional initiative 'dresden concept' which has helped to make its strategic development plan a winning proposal in a key national competition for excellence. Nonetheless, engaging with the local business sector in Saxony remains a challenge since the region is characterised by an absence of larger corporations and the local small and medium-sized

firms are not always ready to outsource R&D and/or consulting activities to higher education institutions in the region. More often than not, it requires public support to generate sufficient capability and/or entrepreneurial interest in science-industry co-operations. Exceptions from this rule are co-operations with small, but high-tech firms in the framework of regional cluster initiatives like 'Silicon Saxony'.

### **...and resulting actions: GWT-TUD and TUDAG**

To come close to its stated ambitions under these challenging regional framework conditions, the Technical University has taken a proactive stance toward improving its engagement with the local business sector and made corresponding organisational arrangements in the form of a number of legally independent, applied research units at the university and a central institution to co-ordinate, support and enable consulting activities of professors and faculty (GWT-TUD). Beyond that, it has set up the TUDAG, an institution that operates under the strict condition of profitability to support the commercialisation of university research results, provide offers for further education, and invest in selected spin-offs in their post-establishment stage. While its profit eventually flows back to the university, it is fully legally independent to the extent that it neither provides free services to nor receives free services from the university. Since the TUDAG constantly yielded profit throughout the past decade, this innovative approach of only doing what is economically feasible has to be considered as proven viable in practice.

### **The case of the Leuphana University: point of departure and mission...**

The establishment of the Leuphana University in its current form only dates back to 2005 when it was established through a merger of a university of applied sciences and a college of education. As the only university in the region of north-east lower Saxony the Leuphana is facing high expectations expressed by various groups of regional actors. This is particularly the case since the region is rather indigent and "qualifies" as a "convergence region" with view to the support regulations of the EU structural funds. Accordingly there have been high demands that the university will support the stimulation of the regional economy beyond the classic portfolio of providing human resources through research and teaching and erratically carrying out joint research projects with regional companies. Furthermore the university itself needed to reconfigure its scientific portfolio and strategies to acquire third party funding after the merger. Coupled with the fact that the Leuphana was also keen to reinvent its role as a regional player the idea was developed to apply for EFRE funds at EU-level (with the support of the Federal State of Lower Saxony) and therefore be able to engage in regional development measures as higher education institution. With the successful application the Leuphana was able to found the Luneburg Innovation Incubator, which now is a unique pilot pro-

ject and aims at developing routines that enable higher education institutions to become a "tool of sustainable regional development".

### **...and resulting actions: The Lüneburg Innovation Incubator**

The Innovation Incubator currently sets out to implement and carry out 50 innovative research projects in cooperation and joint responsibility of university researchers and members of (mostly regional) business partners. The timeframe for this undertaking is 2009 until 2015 and the focus areas of the incubator are "Digital Media", "Health" and "Sustainable Energy". Within those areas the incubator offers 16 different support measures that assist the involved personnel in an integrated, systemic manner. Therefore the measures are organized in four overarching pillars: research projects conducted in collaboration with corporate partners, knowledge transfer in the region, Training and continuing education and providing research infrastructure for external actors. Those pillars are further differentiated in 16 single measures including "research-based expertise to companies or start-ups", "training and education of highly qualified graduates for the integration in the regional labor market" as well as services for knowledge and technology transfer, including advisory service in regards to patenting.

So far 220 office jobs were established, 35 projects (and 110 sub-initiatives) could be realized and enabled the collaboration of the university with 230 companies. However, it remains to be seen and evaluated in the near future, if the intention of "sustainable regional development" can be reached through cooperation facilities like the incubator.

### **Conclusions**

This abstract and in particular the four storylines about German universities have illustrated how regional engagement of German HEIs has evolved over the last years, in particular that the range of regional partners has widened, that partnerships tend not only to be bilateral but more and more also multi-lateral and that partnerships are reaching beyond ad-hoc collaborations towards more institutionalized patterns (public-private partnerships). This is accompanied by a growing strategic importance of regional engagement. We saw that some universities have a particular regional mission and adapt strategies and measures accordingly to realize it (like the commercialization and valorization infrastructure developed as an economically independent agency at the Technical University of Dresden or the Incubator at the Leuphana University Lüneburg). In contrast to this governance approach, others have also increased their strategic efforts, but not with the primary aim to contribute to goals of regional development, but to strengthen the excellence of research, however, this as a side-effect produced regional benefits (coincidence examples are the Göttingen Research Council and the Stuttgart research campus).

Regardless of whether the primary motivation for regional engagement was a regional benefit or not, we found it generally to be true that the developments in the German

HEI system have increased the need for strategic steering and action by the board. However, as universities are heterogeneous entities, central steering seems mostly not the (only) appropriate governance approach. One implication for HEI boards resulting from this, is to develop their managerial thinking rather in the direction of vision-based leadership.

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