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**Teaching, Research and more?!
Achievements of Universities of applied sciences
with regard to the society**

Isabel Roessler
Sindy Duong
Cort-Denis Hachmeister

CHE
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CHE gemeinnütziges Centrum für Hochschulentwicklung
Verler Straße 6
D-33332 Gütersloh

Telefon: ++49 (0) 5241 97 61 0

Telefax: ++49 (0) 5241 9761 40

E-Mail: info@che.de

Internet: www.che.de

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Abstract

This document is based on the paper submitted for the annual meeting of the Consortium of Higher Education Researcher (CHER) 2014 and the Arbeitspapier 182: Was sind die Missionen der Hochschulen? Third Mission als Leistung der Fachhochschulen für die und mit der Gesellschaft (Roessler, Duong, & Hachmeister, 2015). Within the last thirty years, the level of discussion about a Third Mission of universities in addition to teaching and learning increased, with the idea that there is an increasing interchange and linkage between HEIs and society. Over the years Third Mission became a multidimensional approach, which contains cultural and social as well as political and economic dimensions. Therefore, Third Mission can be seen as an umbrella term for all HEI activities that are directed towards society. This paper focuses on the question of what the Third Mission of universities is about and whether Third Mission already exists in German Universities of Applied Sciences (UAS). These questions will be answered with a focus on the German UAS, because this type of higher education institutes seems to be especially prepared for Third Mission activities. Based on a literature review and the results of 49 qualitative interviews which have been conducted within a project called "FIFTH, Facets of and Indicators for Research and Third Mission at Universities of Applied Sciences" the authors give an answer to these questions.

It has become obvious, that there are many more activities already existing besides teaching and research. The UAS are very active with respect to a huge variety of Third Mission dimensions. On the basis of the interviews the idea of Third Mission was reconceptualised. In this paper a new structure is discussed: All aspects related to Third Mission have been restructured and classified into four groups: Preconditions, activities, results and consequences. This gives a much clearer view on Third Mission and its underlying performances.

Zusammenfassung

Das vorliegende Arbeitspapier basiert auf einem im Rahmen der Jahrestagung des Consortium of Higher Education Researcher (CHER) 2014 eingereichten Paper, sowie den Ergebnissen der Publikation: Was sind die Missionen der Hochschulen? Third Mission als Leistung der Fachhochschulen für die und mit der Gesellschaft (Roessler, Duong, & Hachmeister, 2015)

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1 Introduction and background

Traditionally, the two core missions of higher education institutions are teaching and research. This goes back to the Humboldtian ideal of universities and was an essential part of the way universities have identified themselves since the 20th century. The model of the Humboldtian university was, as Sylvia Paetschek (2002) convincingly shows, an invention of the early 20th century. With growing student numbers, the declining financial possibilities of the states, the change to knowledge-based societies and the relevance of the science system within such societies, a new momentum within the higher education realm has evolved. Transfer activities, the need for lifelong learning, entrepreneurial activities of HEIs and a growing interest of enterprises on the curriculum influences the university as a system. These developments also shape the way professors, students and administrations interact within universities.

In addition to traditional teaching and basic research a third mission has evolved: A mission with a much stronger focus on issues of the civil society and business, with more direct exchange than in teaching and basic research. Mutual interaction between universities and the business enterprises on the one hand and different stakeholder of the civil society on the other hand can be summarized under the broad term “Third Mission”. The necessity to support interactions between science and business was also recognised by the European Commission (EC). The Commission provided a strategic framework for European cooperation in education and training, the “Education and Training 2010” (ET 2010)”, which includes the promotion of partnerships between enterprises and universities (European Commission, 2009).

Those partnerships can be developed in many varieties. Research projects in cooperation with enterprises or coalitions of universities with a local stakeholder to improve the infrastructure of the region are only two possibilities. Hence it is not surprising that the concepts of Third Mission are also different from each other. One of the best-known projects about Third Mission is the project “European Indicators and Ranking Methodology for University Third Mission (E3M)”, funded by the European Commission. The researchers pointed out, that each country finds its own solutions for a Third Mission (E3M-Project, 2012, p. 18).

Against this background, two questions will be discussed in this paper

- 1) What is the Third Mission of Universities? (chapter 2)
- 2) What are Third Mission activities in Germany? (chapter 4)

These questions will be answered with a focus on the German Universities of Applied Sciences (UAS). They have distinct profiles and their own strengths with respect to their research and Third Mission. UAS have a long tradition in applied research and industry-university cooperation. Therefore this type of higher education institutes seems especially suitable for Third Mission activities (chapter 3).

Based on a literature review (chapter 2) and the results of 49 qualitative interviews (chapter 4) which have been conducted within a project called “FIFTH, Facets of and Indicators for Research and Third Mission at Universities of Applied Sciences” the authors will also give an answer to the question on how Third Mission already influences the everyday business of UAS and how these findings can advance the conceptualizing of Third Mission (chapter 5).

FIFTH was designed as a three-year-research project to illustrate the multidimensional facets of research and research-related Third Mission within the UAS, making the wide range of already existing performances of this specific type of higher education institution visible. The project is funded by the German Federal Ministry of Education and Research (BMBF), funding ID 01PY13007.

2 Concepts of Third Mission

Third Mission gives a name to those activities which for several years have been a third core activity of the higher education institutions (HEI) besides teaching and learning. At least since the 1980s, the discussion about a Third Mission increased, theoretically based on economic theories such as the Entrepreneurial University, Triple Helix (Etzkowitz & Leydesdorff, 2000) or the approach of Mode 2 (Gibbons, M; Limoges, C; Nowotny, H.; Schwartzman, S.; Scott, P.; Trow, M., 1994).

These concepts share the idea that there is an increasing interchange and linkage between HEIs and society, primarily in an economic sense. But within the last twenty years interaction and contacts between society and HEIs have not been focused on economic matters only, instead additional groups of society have increasingly become important (Conway, C, Humphrey, L, Benneworth, P, Charles, D & Younger, P., 2009).

More and more, Third Mission becomes a multidimensional approach, which contains cultural and social, as well as political and economic dimensions. Therefore, Third Mission can be seen as an umbrella term for all HEI activities that are directed towards society and activities in which the attention on civil trends, needs and requirements can be seen – including social and civil engagement.

“The third mission has emerged from this evolutionary process to become a mature additional mission of universities, supported by individual universities as well as at a national policy level. “ (Benneworth & Zomer, 2011, p. 98).

The term “Third Mission” implies all those requirements, that ask HEIs to play a much more visible and stronger role in the design of modern knowledge societies by providing socially, culturally and economically usable knowledge.

This was also recognized by the OECD. Based on a deeper connection between universities and enterprises, especially in the United States, the universities became “engine[s] of the knowledge economy” (Vorley & Nelles, 2008, p. 120). At the beginning the engagement of the universities was focused on Technology Transfer. Technology Transfer is also one dimension that can be found in other projects and conceptualisations which are dealing with the topic of Third Mission.

Each project uses its own definition and focuses on different aspects. Based on a literature review one can conclude, that Third Mission is a global phenomenon with local characteristics. Therefore the project “European Indicators and Ranking Methodology for University Third Mission (E3M)”, funded by the European Commission pointed out that:

„(...)Each country operates in contexts which define its own good practices. A global best practice for Third Mission therefore does not exist. Each country – and each university – finds its own solutions.” (E3M-Project, 2012, p. 18)

The literature review made clear: The definitions of Third Mission differ mostly in the broadness of included dimensions. While some publications have got a broad understanding

of Third Mission and include different approaches, other publications hold a more limited view on Third Mission.

2.1 Dimensions of Third Mission in the literature

Third Mission is a concept with different characteristics and previous projects always defined own conceptualisations. Based on the literature, four main dimensions of Third Mission can be identified:

- 1) University-economy interaction in a broad sense: The universities entertain relations with different stakeholders from the economy.
 - a. Technology transfer: Interactions between university and economy with the aim of substantial transfer of technology.
 - b. Innovation: Making academic results feasible and renewing economical procedures.
- 2) Social engagement: Interactions between university and society such as civil engagement or social learning with the aim to bring benefits for the society.
 - a. Social innovation: modernising civil life.
- 3) Cultural and political engagement: Activities which help to develop the cultural and political life.
- 4) Knowledge transfer in a broad sense: Activities of the universities in order to provide usable knowledge for different groups of society.
 - a. Continuing education: A concrete activity to transfer knowledge.

It is obvious that the projects always try to find a name for those dimensions, which do not belong to teaching and research, but are still done by the universities. These dimensions contain several activities, e.g. the aspect continuing education includes LLL, certificates, full study programmes etc.

The following examples give an impression of how these dimensions are defined and how the dimensions can be designed.

2.1.1 Third Mission as possibility for interaction and development

The **E3M project** describes this Third Mission as “a way of doing or a mind-set for accomplishing the first two [missions]” (E3M-Project, 2012) It is an supplement of Teaching and Research. The E3M Third Mission is based mainly on three different dimensions:

“(…) in general, Third Mission activities are generally gathered around three dimensions very much related to teaching and research, that is, implying a great deal of mission overlap. These dimensions can be defined as technology transfer and innovation, continuing education and social engagement:” (E3M-Project, 2012, p. 8)

The content of Third Mission in **Latin American** countries has its focus on the economic aspects, too. The concept of the Triple – Helix of university-industry-government relationships, is the basis for the production of knowledge and innovation in these countries. Especially cooperation between universities and enterprises shall be supported because those interactions are on the one hand vital to ensure a better match between the alumni and the need for human resources in the economy and on the other hand for developing the potential for new economic branches. This could be done through a commercialisation of knowledge, spin-offs and patents. The entrepreneurial activity of universities is believed to

strengthen the innovational power of the country. (Thorn & Soo, 2006) The activities of the universities have got a beneficial impact on the development of the country.

Other countries even took a step forward and included Third Mission in their Law on Higher Education. In **Latvia** the official missions and tasks of the universities have been redefined. Apart from research and the study process, “the contribution made by HEIs to the cultural and economic development of the country; the cooperation with entrepreneurs, employers and other social partners; the commercialization of research results; technology transfer; the provision of services geared towards the needs of society; and the popularization of science” are featured in the law (Anda Adamsone-Fiskovica, 2009, S. 133).

Similar are the definitions of Third Mission used in the **United Kingdom**. For more than 20 years Third Mission activities are financed by the Higher Education Funding Council of England (HEFCE). Under „Third Stream Activities“, interactions between universities and external organisations from the private sector, public sector and society are understood (Berthold, Meyer-Guckel, & Rohe, 2011, p. 88).

Most relevant for the Higher Education funding Council of Wales (HEFCW), are the benefits of Third Mission for society and also the economic development:

“Third Mission activities in universities stimulate and direct the application and exploitation of knowledge to the benefit of the social, cultural and economic development of our society.” (HEFCW, 2004, S. 2)

The benefits for the society are clustered in three groups: Services to the community, civic role of the HEI, enhancing social capital. Interactions with economy include the groups: services to business, developing a skilled workforce and Knowledge exploitation.

In the case of the United Kingdom Third Mission is supported by the government. In this obvious kind only the **Netherlands** are comparable. Since the 1980s the politicians in the Netherlands wanted to strengthen the contributions from the universities to the society. Instead of Third Mission the term “valorisation to discuss societal, enterprising and innovation activities” was used. However the universities did not start to work on Third Mission activities only because the government supported those activities. In addition the universities were able to bring their own ideas and approaches into that development. Third Mission was more or less the answer of the universities to the approaches of government, industry and other social factors.

“The third mission for Dutch universities did not simply evolve as successive governments developed policies that sought to exploit universities’ knowledge bases. Universities, the Dutch university system and the wider environment in which universities operate evolved as a consequence of these changes. The public law on universities’ mandate was revised to encompass a more specific societal duty for universities. Understanding the third mission, its relation to universities’ other missions, and the impact of the range of reform processes to which Dutch HE has been subject therefore requires an understanding of this multi-stage evolutionary process whereby universities evolved from democratic mass universities to hosting communities of applied researchers, to organizing technology transfer projects and finally to becoming commercially engaged institutions.” (Benneworth & Zomer, 2011, p. 95)

2.1.2 Third Mission as possibility to transfer knowledge

Another approach to conceptualise Third Mission was used by Philipp Laredo who created a **radar of Third Mission** elements when he worked on the "Prime Project Observatory of the European University (OEU)". The radar contains eight dimensions: 1) Human resources where embodied knowledge becomes transferred in graduates, 2) intellectual property with a focus on patents and other codified knowledge, 3) spin offs which help to transfer knowledge through entrepreneurship, 4) contracts with industry with a knowledge circulation between universities and enterprises, 5) contracts with public bodies, which is similar to point four, but focuses not on enterprises, 6) participation into policy making to bring the know-how into policies, 7) involvement into social and cultural life as the universities own facilities such as orchestras or museums and 8) public understanding of science which is meant to bethe interaction with society (Laredo, 2007, pp. 8-9). In this understanding the focus of Third Mission lies on the question of how university members can transfer their tacit knowledge into society.

2.1.3 Third Mission as possibility to engage in society

The society is also the most important stakeholder in the scope of the German **Stifterverband**, a business community initiative advocating long-term improvement of the German education and research landscape. The Stifterverband funded a competition with the name "More than research and teaching – Higher Education Institutes in the Society" and wanted to promote the civil role of universities. In a publication it was concluded that Third Mission would mean a mutual exchange between HEI and society which could be named "social engagement". This social engagement could be fulfilled with the help of six dimensions: 1) Civic Engagement, 2) Community Outreach, 3) Community Service, 4) Service Learning, 5) Social Entrepreneurship and 6) Widening Participation (Berthold, Meyer-Guckel, & Rohe, 2011, pp. 23-41). Technology Transfer or the possibility for Third Mission through cooperation with enterprises are not relevant in this context.

3 German context

The literature review showed that Third Mission is a broad concept with different foci. The examples pointed out, that many definitions of Third Mission are embedded in – at least – a national context. Against this background it is necessary to explain the German university system when a Third Mission definition for Germany shall be found.

In total 423 HEIs exist in Germany. 25% are traditional universities which are doing basic research. Another 25% are art colleges or specialized HEIs such as pedagogical institutions or HEIs on administration. The largest group, about 50%, are the UAS with 212 institutions in 2013/14 (Federal Statistical Office (Statistisches Bundesamt), 2014).

Compared to the universities, the German UAS have distinct profiles and own strengths with respect to their research and Third Mission activities. The first UAS were founded between 1969 and 1971 to allow more pupils an uncomplicated and nearby access to higher education. The founding mission of the UAS was to give students a practice - and work-oriented academic education so that they could later take their own decisions in their future jobs. Another idea was to heave Germany from the industrial era into the era of the

beginning knowledge society with the help of the UAS. (German Council of Science and Humanities (Wissenschaftsrat), 2002, p. 5) Therefore the most important mission of the UAS was teaching. Still the workload of the professors at the UAS is 18 hours a week – compared to 9 hours for the professors at traditional universities.

A characteristic trait and thus distinction from traditional universities was supposed to be the special application-orientation and a shorter length of study (German Council of Science and Humanities (Wissenschaftsrat), 2002, p. 5) Within the last thirty years, the UAS changed their image from a “mucky pup image” (Spiewak, 2002), the “waste product of the educational expansion” (Simon, 1990), and birth out of necessity (Gross, 1990) to a success story within German Higher Education.

In 1992/93 only 20% of all students in Germany visited a UAS, twenty years later in 2012/13 about 32% (Statistisches Bundesamt, 2013). The development of the number of professors is similar and has increased over the years from 17% in 2003 to 23% in 2012 (Statistisches Bundesamt, 2013), but it should not be ignored that most of the UAS are small entities with about 3.600 students.

The most important profile of the UAS is the strong focus on teaching and on application: practical elements are an essential part of all curricular activities. Over the course of time, the UAS became successful in areas such as applied research and industry-university cooperation. Third party funds from businesses are a substantial financial source for UAS and have been a stable source of income over the years. For example in 2010, UAS gained almost one third of their third party funds from businesses while other universities gained only one fifth (Federal Statistical Office (Statistisches Bundesamt), 2012)). In this context it is important to know that the professors of UAS have to work outside academia before they are able to become a professor. Hence they know enterprises and other groups from the civil society quite well and know how to deal with them. It is easy for them to get in contact with partners from outside academia.

A first analysis of UAS websites, UAS self-images and databases showed that in addition to these economy-related activities also considerable efforts in lifelong learning activities, knowledge transfer, consulting or the founding of spin-offs are nowadays a visible trait of UAS. The German UAS seem to be suitable for Third Mission activities and are including a variety of approaches of this mission in their everyday business. Within the German higher education system, UAS are a special type of institution that official bodies, such as the German Council of Science and Humanities (Wissenschaftsrat), distinguish from (research) universities. A distinction between the two types is seen as functional with reference to the science system as a whole, even though there are huge differences in the profiles of UAS (German Council of Science and Humanities (Wissenschaftsrat), 2013).

According to the German Council of Science and Humanities, the aim of public policy in the realm of higher education is to ensure and develop the performance in a variety of different dimensions. Activities apart from teaching and basic research entail the possibility for the individual higher education institutions to be visible with a distinct profile and to protrude from the high number of higher education institutions (German Council of Science and Humanities (Wissenschaftsrat), 2013, S. 8) Therefore Third Mission as “lived mission” next to teaching and research could be an appropriate way of profiling for the UAS. With a stronger focus on Third Mission and stressing out the already existing performances in this mission, the UAS are in the best starting point to become visible as a remarkable type of HEI.

4 Third Mission activities in German UAS

Starting from the hypotheses that UAS are suitable to be successful in a Third Mission and that they are able to use Third Mission for profiling, 49 qualitative interviews have been conducted between April 2014 and August 2014.

4.1 Methodology of qualitative study

For the interviews, an open guideline-based interview design was chosen. Referring to Meuser and Nagel, the open guideline-based interview fits best in the situation of interviews with experts. The experts have got the possibility to extemporize their position and experience, but the discussion is not lost in the topic. The experts are seen as representatives of their organisation or institution (Meuser & Nagel, 2002). Their answers will only be used in an anonymized way.

The method of explorative interviews was chosen to ensure a wide spectrum of feedbacks and different approaches, which is especially important for Third Mission. Different parties are involved in Third Mission activities. To ensure a huge variety of different characteristics and different target groups, four expert groups were identified:

- **Higher education leaders:** rectors and vice-rectors¹
- **Professors:** visible in research and/or Third Mission activities
- **External Experts:** experts with a profound knowledge of UAS or representatives of important organisations (e.g. trade associations which are interested in HEI-business co-operations)
- **Ministries:** ministries of research and science in different federal states

Apart from one institute all visited HEIs were UAS. To define the sample, all UAS have been analysed based on the criterion “amount of third party funds per full-time-equivalent professors” on a subject-based level. This indicator was used because it is used in more or less all performance measuring activities like the German “Leistungsorientierte Mittelvergabe” (performance-oriented allocation of funds, used for transferring basic funds from the federal state to the universities) and in all research-related university rankings (see www.umultirank.org or <http://ranking.zeit.de>). Furthermore, third party funds include the amount of funds given by business enterprises, which could be used as an indicator for Third Mission activities in the area of technology transfer.

Based on these above-mentioned sources, 27 UAS in total, reached good results in the surveyed fields and have been analysed in further detail: it was necessary that the chosen UAS would also be active in different areas of Third Mission. Based on internet search, several items have been analysed:

- mission statement and/or self-image of the UAS
- strategic papers regarding Third Mission activities
- projects on the institutional level

¹ The rectors and vice-rectors are, of course, also professors, yet due their reduced research and teaching load and their strong focus on administration, it was generally possible to solely focus on their position as higher education leaders during the interviews.

In addition, it was ensured that the selection would cover a representative sample of UAS. It was necessary to include different regions: The south of Germany with its strong economic power, the west with a federal state with the largest population, the north with smaller units and as a sparsely populated region, and the east as a structurally rather weak region. Due to the German system of federal states, it was also necessary to cover different kinds of federal states: federal city states, territorial federal states, heavily populated federal states and less populous federal states. In a third step, three different types of UAS were covered: public UAS, privately owned UAS and clerical UAS.

Based on these requirements 49 interviews have been realised. Six representatives of Ministries, 13 Experts in the area research and/or Third Mission, ten rectors and vice-rectors and 20 professors. Most of the interviews have been recorded and transcribed.

In the following analysis 40 transcribed interviews have been included: Seven interviewees did not want to be recorded and two interviewees came from abroad and could only give feedback with regard to their own country. In the following the activities of German UAS are in the focus. Therefore only interviewees from German UAS have been analysed.

The analysis of the interviews is based on qualitative content analyses (Mayring, 2010). For the analysis, a mixture of a synoptic analysis and a structuring method was chosen.

4.2 Conceptualisation

For the analysis, the conclusions of the literature review were combined with the statements of the interviewees. It became clear, that the previous projects on Third Mission focused too much on the **activities** of universities with regard to Third Mission. The interviews with the rectors and professors made clear, that not only activities should be counted among Third Mission. Before activities can be in progress, several **preconditions** are necessary, e.g. supporting structures. The **activities** of Third Mission are very comprehensive and most of the aforementioned dimensions of TM already exist at German UAS. As an impact of Third Mission activities, and also research and teaching activities, **results** are generated, which can lead to further steps like awarding patents. Some of the results and activities themselves lead to **consequences**, e.g. social innovation.

With the help of this conceptualisation of the whole process (preconditions→activities→results→consequences) the topic of Third Mission is much better explicable. This concept is comparable with the so called iooi-method: Input→Output→Outcome→Impact (Bertelsmann Stiftung, 2010). Creating awareness that there are **preconditions** for Third Mission activities helps to identify missing support structures and to eliminate deficits. Describing Third Mission **activities** and making them known helps people who are active in areas to explain what they are doing and to make it honourable. The description of the **results** helps HEI leaders to see the benefits of Third Mission activities. To conclude, the description of consequences, like social innovation helps to show society benefits of Third Mission. To sum it up: structure Third Mission in a process helps to find arguments for Third Mission for different stakeholders.

The findings and the conceptualisation are visualised in the following graph.

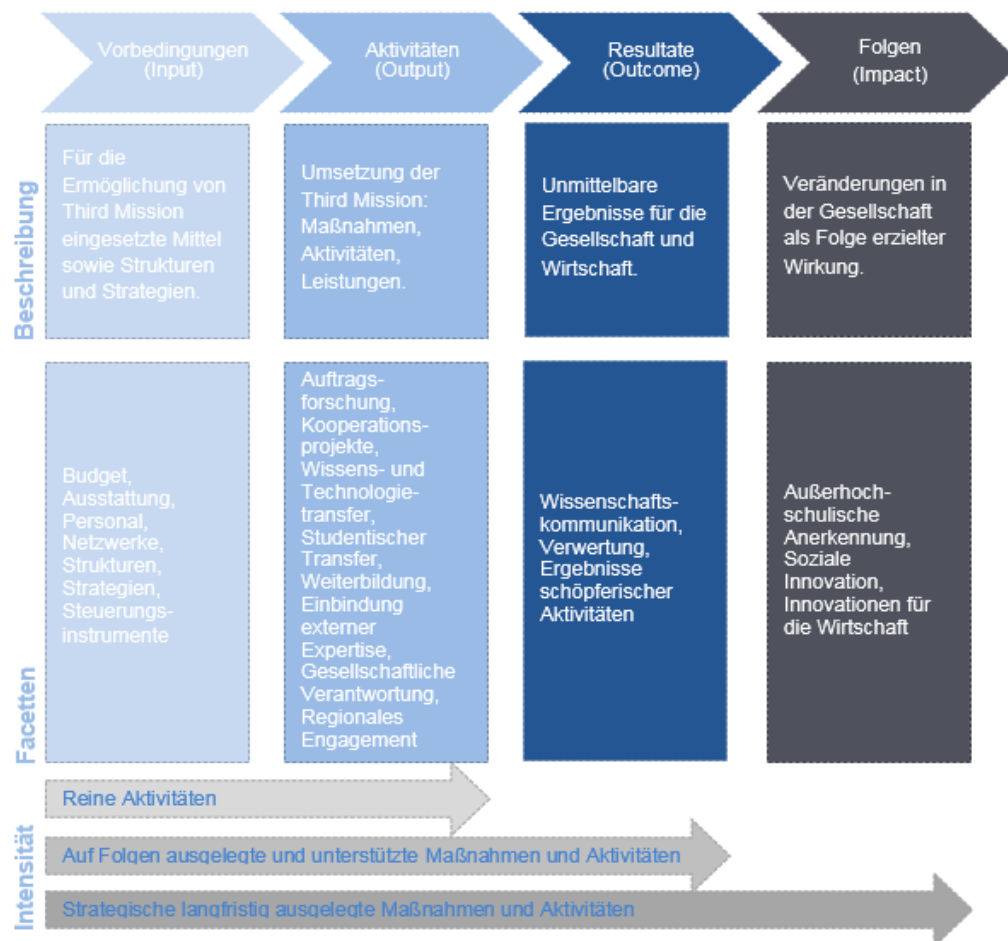


Abbildung 1: Conceptualisation of Third Mission processes (own figure), following the iooi method

4.2.1 Preconditions for Third Mission

The interviewees pointed out, that Third Mission activities can be supported by structures within the universities. Most helpful seems to be the existence of official strategies for Third Mission, or at least strategies for Technology Transfer, Continuing education and so on. Strategies help integrating Third Mission as an own pillar in the self-image of the university. Apart from strategies also existing innovation networks, transfer centre or the position of a vice-rector for technology transfer underpin the possibility for Third Mission. A major requirement for Third Mission is a time budget for activities and – if possible – a financial budget. As a third aspect networking with non-academic people was mentioned. In these networks contacts with different groups of the society can be created.

In total 18 people (45%) mentioned structures and networks.² Three rectors (out of ten) included Third Mission or at least aspects like Technology Transfer in the official strategy of the UAS. Transfer centre were also mentioned by seven persons. The rating of the importance of these centres differed considerably. In general they are helpful for getting in contact with enterprises, but professors with intensive networks and contacts do not use the transfer centres. The rectors have a positive attitude with regard to the centres and want to strengthen the transfer centres to support cooperation between professors and enterprises.

² Analysis on the basis of interviews in total. Each denomination was counted only once.

4.2.2 Third Mission-activities

All 40 interviewees mentioned Third Mission activities.

Universities have a *social responsibility*. 15 interviewees (37.5%) indicated aspects with regard to social responsibility. Especially community based research was mentioned (9 people). Six people did see a general societal order in their work. The people interact with the civil society and are searching for social challenges.

Closely related with social responsibility are activities in *regional engagement*. Projects and activities with a focus on the region have been mentioned by 25 (62.5%) persons. The range of activities was broad. It was mentioned by ten people, that their work would lead to regional development, e.g. because they would support the region as a seat of industry. Nine interviewees indicated, that they hold regional responsibility. Four persons have been working on concepts for the development of the location. The development of infrastructure, e.g. construction of a street, was mentioned by two persons.

Engagement with non-academic stakeholders does not necessarily count as an activity of the professors only. *Teaching related Transfer* of knowledge and technology is a very important aspect within the UAS. The students are integrated in research projects within their classes, practical seminars or project semesters (14 people) and internships. The students also use the possibility to get more practical experience by writing their thesis in cooperation with an enterprise (mentioned by 11 people).

One of the most important activities of Third Mission are projects in cooperation with non-academic partners. More than 100 indications with regard to cooperation have been registered within the interviews.

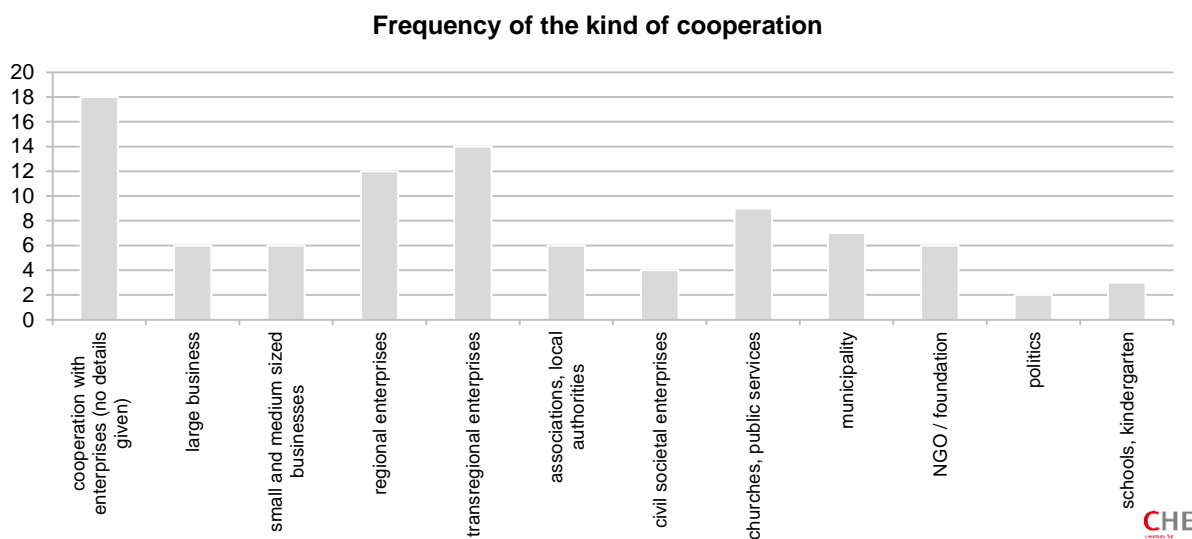


Figure 1: Kind of cooperation (Own source, qualitative interviews, 2014)

Cooperation with enterprises and societal groups can become institutionalised. Strategic partnerships, Science-to-Business centres, where universities and enterprises are doing research together or jointly used laboratories have been indicated by 16 interviewees. Not in all cases did these partnerships exist already.

Within cooperation projects, *transfer of technology and knowledge* takes place. This kind of transfer can also be realised by activities like participation in networks or cluster, cross-employment (dual appointment) or through alumni.

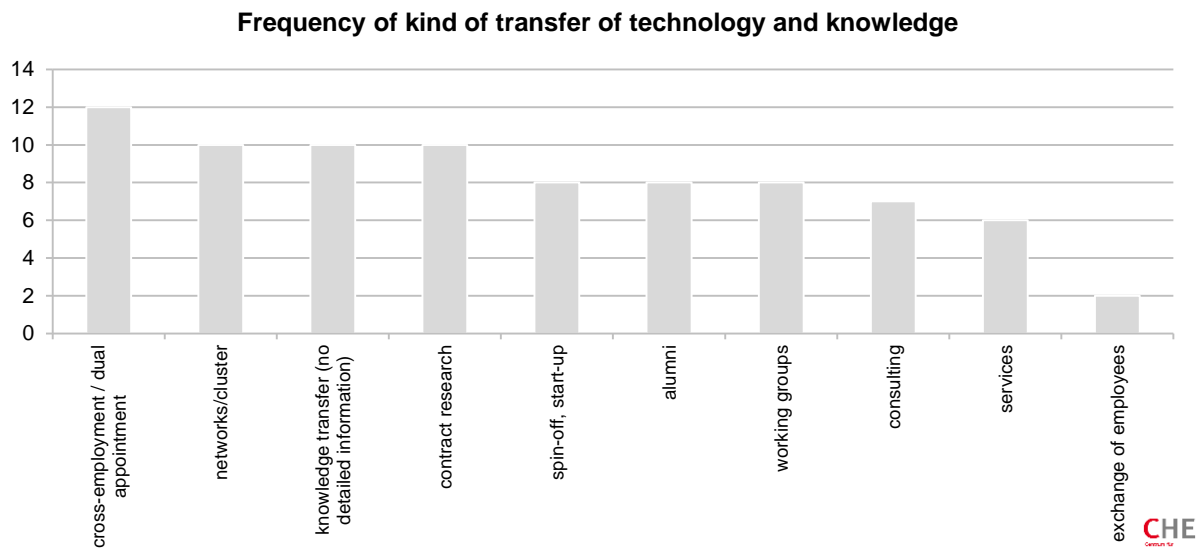


Figure 2: Kind of technology transfer and knowledge transfer (Own source, qualitative interviews, 2014)

Knowledge transfer can also be realised by *scientific advanced training*. On the one hand knowledge can be transferred into the enterprises through the students in advanced training, while on the other hand the professors learn about the problems within the enterprises and can take these problems into account when they do research. In total 19 (out of 40) people mentioned different kinds of advanced training. Professional schools, lifelong learning, study programmes and courses to get a certificate have only been mentioned by few people. Nevertheless advanced training is highly important in the future, as some of the rectors indicated.

A special kind of knowledge transfer is the *integration of external experts* in the university. Six (out of 40) people indicated, that they would integrate people from outside academia in their activities, especially in teaching. In two cases people from outside academia have been integrated in research activities.

4.2.3 Results

Research and Third Mission activities lead to results. Most common is the publication of scientific articles and other scientific output. With regard to the purpose of Third Mission, the *communication of science* is more than publishing in scientific journals. 32 of the 40 interviewees mentioned different ways of science communication. Twelve people each indicated, they would participate actively in fairs or congresses, or hold lectures and organise their own fairs for the public. Eight persons indicated that they already published in professional journals and mass media. This helps to transfer knowledge into the economy and society.

Another way of knowledge transfer into society is the *results of creative activities*. Inventions, patents and licences and commercialisations belong to these results. Compared to the science communication aspects only a few people indicated aspects of this content. Patents were mentioned by five people only. Six interviewees indicated the commercialisation of their creative activities and inventions.

4.2.4 Consequences of Third Mission activities and results

Each activity and each result also consequences as well. In this section only few aspects have been indicated and therefore it is not necessary to give detailed numbers. Hence, the consequences are more or less only results of the conceptualising process within the project. *Recognition* through awards for Third Mission activities was mentioned. That the economy gives third party funds for projects is also a consequence of the visibility of the professors. Patents and inventions can create *income* for the professor or the university. The activities based on the Third Mission dimensions social and regional engagement could lead to *social innovations* in the long run. Within the 40 interviews this aspect was not mentioned, though.

5 Conclusion and implication

The paper gave an impression of already existing activities within the area of Third Mission in German UAS. In total, 49 interviews have been realised to get an insight into the core activities of German professors from UAS and the overall strategy of the UAS with regard to Third Mission. It became obvious, that there are much more activities already existing besides teaching and research. The professors are engaged in various activities. The literature review gave a good frame for analysing these activities: Especially university-economy-interaction was exposed by the interviewees. In this context, projects in cooperation with enterprises have been named mainly. This was not unexpected, because in order to become a professor at a German UAS the applicants have to work outside academia for several years beforehand. Hence they have good connections to the economy and society. Apart from business-cooperation the interviewees pointed out, that they are active in areas of social engagement, too. Several interactions with the society could be found out, with different stakeholders and aims. Again cooperations with stakeholders from society are the most often named activities. A third huge activity dimension was knowledge transfer. The interviewees demonstrated vividly that they work hard and creatively to bring their tacit knowledge into society. In contrast to the literature, cultural and political engagement was not mentioned in detail by the interviewees. During the interviews it became clear that the theoretical frame, given by the literature review, does not cover all relevant aspects of Third Mission. Therefore a new structure of Third Mission as supplement to the previous definitions was presented in this paper. Up until now Third Mission was usually seen from the perspective of activities. Professors engaging in activities that belong to different dimensions like technology transfer, knowledge transfer or continuing education was described and pointed out. However, concentrating on activities is not satisfying, because it is only one aspect of the whole process. Hence a new structure for Third Mission was discussed in this paper. All aspects, related to Third Mission, have been restructured and classified into four groups: Preconditions, activities, results, and consequences. With the help of this conceptualisation of the whole process Third Mission is much better explicable. Creating awareness that there are **preconditions** for Third Mission activities helps to identify missing support structures and to eliminate deficits. For a successful implementation and support by the university these preconditions have to be fulfilled. Based on these preconditions, like internal structures supporting Third Mission, it is much easier for professors to work in the **activity** dimensions of Third Mission and to make it honourable. When apart from teaching and research advanced training or technology transfer is also recognised as a real performance, it is possible for the professor to get appreciation and

support for these activities. The description of the **results** helps HEI leaders to see the benefits of Third Mission activities. Similar to these **consequences** are the logical next steps of Third Mission activities and results. The description of consequences, like social innovation helps to show society benefits of Third Mission. In the literature, results like awarding patents, or consequences like innovation have been mentioned, too, but this was not structured in an appropriate way in the previous conceptualisations. With the introduced classification, discussions about Third Mission can be structured much better and several stakeholders from inside academia and outside academia can find new and more focused arguments for engagement in Third Mission.

In Germany the UAS are already very active in the Third Mission. It is also possible to go one step further: The UAS have got the possibility to perform successfully and without huge additional workload in Third Mission activities. The benefit of the UAS is, that the professors have to work outside academia for several years before they fulfil the entrance requirements. They are often able to speak the same “language” as the enterprises and they often have got good links to society, economy and the region. During the interviews it became clear, that right now many UAS and many professors already engage in some Third Mission areas, but it has to be kept in mind that the amount of 18 teaching hours limits the possibility of UAS professors to engage in additional tasks. Therefore it is necessary to implement a culture within the UAS which makes it possible to engage in a variety of focus areas. Hence the possibility to make the performances in Third Mission visible is necessary. This will become very important for the future of Third Mission. As long as the fear exists that Third Mission includes only activities which will come “on top” on the workload in teaching and research, there will be no future for it, but when it becomes clear that with “Third Mission” a term is found which describes already existing performances and which helps to give a higher value to these activities, there is a good chance for the UAS to create many benefits out of their own Third Mission strategy. They can use Third Mission as a possibility for profiling, too. With the help of Third Mission, UAS can strengthen their success in application related activities and point out their good performance in this area. Based on these findings, the following definition of Third Mission would be appropriate for German UAS: The Third Mission of the HEIs combines all performance, preconditions, activities, results and consequences which lead to mutual interactions and linkages between HEIs and the external university environments in the area of transfer, people and development.

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