



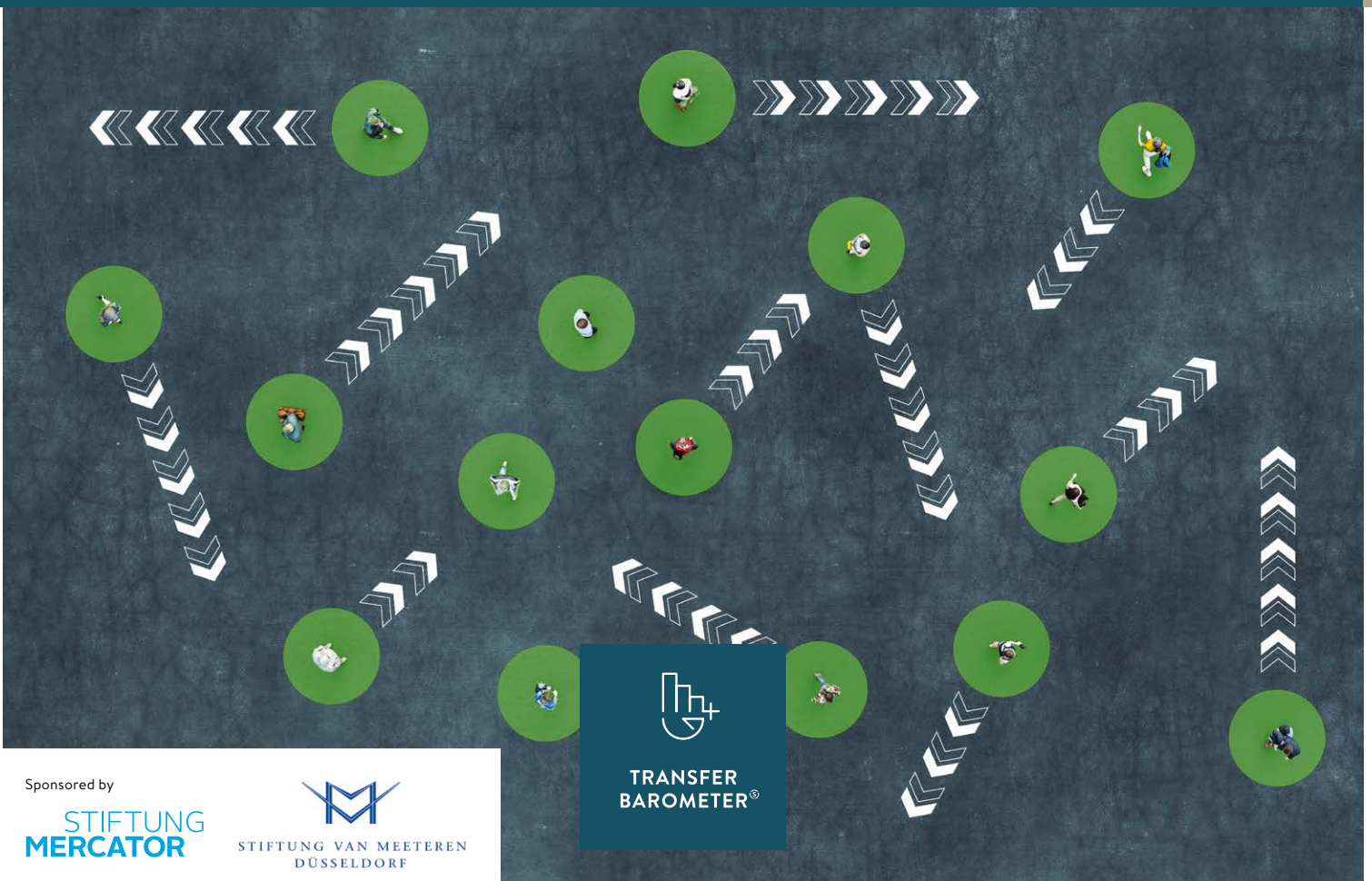
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HELMHOLTZ SPITZENFORSCHUNG FÜR
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Conceptual Principles and Recommendations

TRANSFER BAROMETER: STRATEGIC POTENTIAL AND IMPLEMENTATION

Stifterverband für die Deutsche Wissenschaft (ed.)



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**TRANSFER
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CONTENTS

01 INTRODUCTION	02
02 OBJECTIVES, BENEFITS AND STRUCTURE	05
2.1 Benefits of the Transfer Barometer	06
2.2 Transfer classification as a conceptual framework	07
2.3 Core indicators and optional indicators	07
2.4 Focus: Institutional requirements and transfer fields	09
2.5 Interim conclusion	12
03 RECOMMENDATIONS FOR IMPLEMENTING THE TRANSFER BAROMETER	12
3.1 Success factors	13
3.2 Outlook	15
IMPRINT	16



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INTRODUCTION

01

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- » Transfer is increasingly relevant to the institutional development of universities and non-university research institutions.
 - » The transfer of knowledge and technology differs between universities and non-university research institutions.
 - » The main challenge is to capture, record, categorise and transparently present achievements in knowledge and technology transfer.
 - » Suitable quantitative and qualitative indicators help to achieve transparency with regard to activities and development potential and to present different institutional profiles.
 - » The Transfer Barometer has refined existing indicators for business and technology-related transfer as a potential basis for standardisation.
 - » To gain a broad understanding of transfer, further transfer fields have been defined, and suitable indicators have been developed and tested.
 - » The Transfer Barometer offers a field-tested approach for capturing, prioritizing, and developing different transfer profiles of scientific institutions.
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Transfer and cooperation activities* with partners outside the scientific community are an increasingly relevant field of action for universities and non-university research institutions. The capturing of transfer achievements helps scientific institutions to illustrate the social and economic relevance of their research and teaching. Knowledge and technology transfer contributes to the acquisition of public and private third-party funding; it is a key aspect of institutional strategies, profiling and the shaping of the public image. Transfer can also be a distinguishing feature, for example, in the context of student marketing.



The capturing of transfer achievements helps scientific institutions to illustrate the social and economic relevance of their research and teaching.

At many scientific institutions, the systematic consideration and strategic use of this field of action is still in development. Transfer is often located in the “blind spot” of institutions; individual lighthouse projects are known to exist, however without any comprehensive overview. There is also often no clear understanding of which activities constitute knowledge transfer. Thus, many activities neither contribute to the strategic goals nor to the performance record of the respective institutions. At the individual level, there is little visibility of and appreciation for people engaged in transfer activities. Transfer-specific incentives are often lacking, and transfer activities are still not systematically promoted.

In order for scientific institutions to better tap into the potential for strategic positioning and overall institutional development, more transparency is needed with respect to existing transfer activities, profile-specific strengths, and development and management opportunities. To this end, it is beneficial for scientific institutions to capture their transfer-related activities by means of indicators.

A look at existing instruments and indicators for recording shows that transfer services and cooperative relationships not related to business or technology can only be inadequately surveyed and mapped.

* The Transfer Barometer is based on a broad understanding of transfer, i.e., transfer encompasses all forms of cooperative relationships and exchange between scientific institutions and external partners in business, politics, culture and the public sector.

In order to represent the entire range of potential transfer activities and institutional transfer profiles based on a broad understanding of transfer, further quantitative and qualitative indicators are required.

This is where the Transfer Barometer comes in: It questions, expands and refines existing indicators for business- and technology-related transfer and offers suggestions for possible standardisation. In addition, the Transfer Barometer broadens the perspective on transfer and develops new sets of indicators to convey an understanding of transfer not limited to business- and technology-related transfer. The indicators were developed in collaboration with five selected universities and six Helmholtz Centres with different transfer profiles and field-tested at the institutions. The indicators of the Transfer Barometer are not to be understood as conclusive. Rather, the aim is to adapt the proposed standard set to one's own needs and to expand it. The aim of the Transfer Barometer is to create transparency and visibility of transfer activities at scientific institutions and to offer concrete starting points for internal management.

The experiences gathered in the course of the trial of the Transfer Barometer show that the recording involves noticeable survey effort. This is primarily due to the large number and variety of possible transfer activities, which are often decentralised and carried out by different actors and organisational units. In addition, especially in transfer areas not related to business and technology, there are still no well-established processes, structures and survey routines for collecting information at the source. With regard to the final determination of the indicators, the focus was on a high informative value combined with basic feasibility and acceptable survey effort.

This guide shows how the operational recording and capturing of transfer at scientific institutions can be accomplished with the help of the Transfer Barometer. It presents the conceptual basis and added value of the Transfer Barometer and provides guidance on the practical implementation. It focuses on findings and experiences across transfer fields as well as on concrete methodological recommendations.

The explanations are supplemented by a recording manual with a catalogue of indicators featuring a detailed presentation of all indicator sets and transfer-field-specific survey information.

This provides interested parties with a practical handbook for the capturing of their transfer activities. It offers field-proven knowledge as well as suggestions and guidance for operational implementation. The handout can serve to sensitise, motivate and support scientific institutions that would like to expand their transfer activities as part of their scientific performance.



In order to represent the entire range of possible transfer activities and institutional transfer profiles, further quantitative and qualitative indicators are required.



Recording guide with indicator catalogue:
www.stifterverband.org/transferbarometer/handreichung

OBJECTIVES, BENEFITS AND STRUCTURE



02

The aim of the Transfer Barometer is to provide scientific institutions with field-tested indicators for the profile-specific capturing of their transfer activities. The indicators enable universities and non-university research institutions to systematically capture and strategically develop their transfer activities with regard to institutional objectives.

2.1 Benefits of the Transfer Barometer

The Transfer Barometer provides more transparency with regard to strengths, challenges and individual fields of competence and development. Activities and formats in different transfer fields can be mapped by means of quantitative and qualitative indicators. The repeated collection, evaluation and interpretation of the results allows for comparisons over time and presents developments, which, in turn, facilitate the management and strengthening of transfer fields through suitable measures and activities. The Transfer Barometer as an instrument is not designed and only suitable to a limited extent for enabling external parties to make a comparative assessment of transfer activities at different scientific institutions.

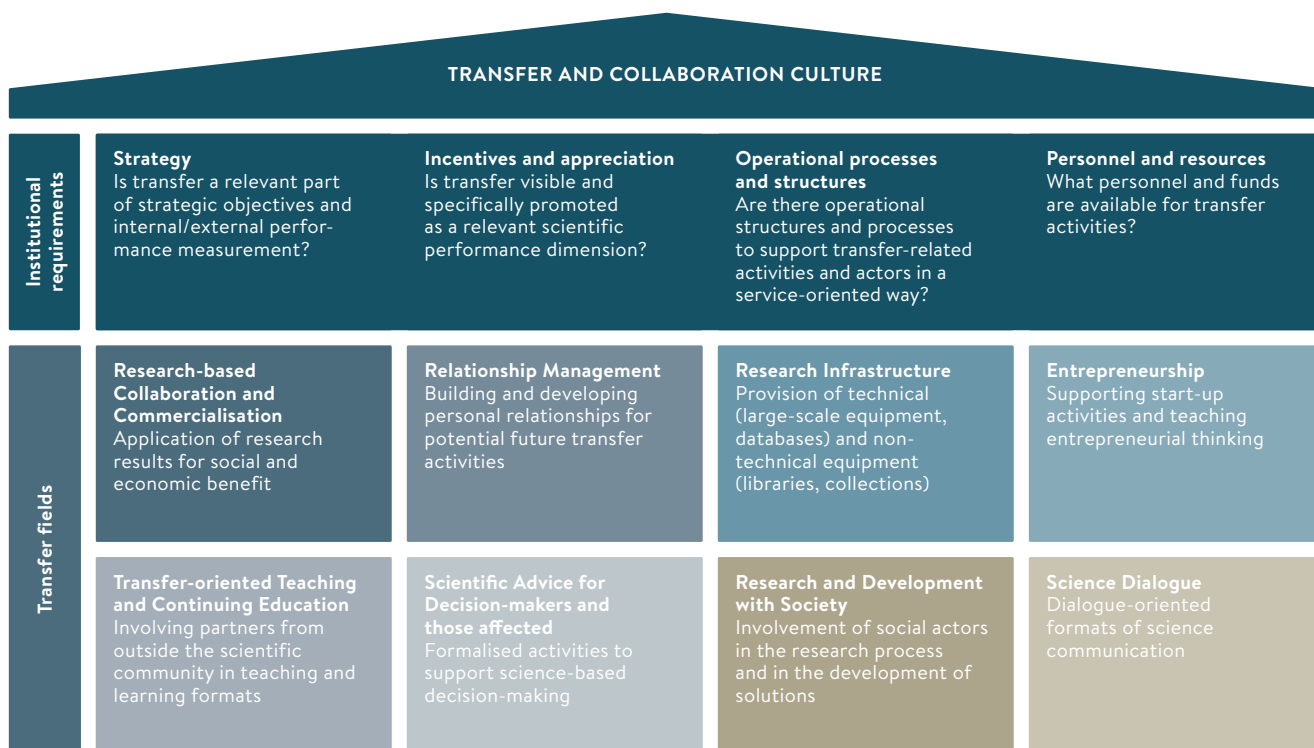


ADDED VALUE OF TRANSFER CLASSIFICATION:

Systematisation of the range of possible transfer activities and formats as well as consideration of profile strengths and fields of development

FIGURE 1: TRANSFER CLASSIFICATION

Conceptual framework for a broad understanding of transfer



Source: own elaboration

Rather, it focuses on an appropriate representation of different profiles with a standardised set of indicators. The appropriate set of indicators for a scientific institution can be compiled by the institution itself according to its strategic focus. Alternatively, all transfer fields can be considered in order to obtain a comprehensive view and to base strategic planning on present conditions. The Transfer Barometer explicitly does not aim to establish a transfer ranking. However, it can facilitate a harmonisation of the understanding of transfer and of the indicators across institutions and allow for comparisons on this basis.

2.2 Transfer classification as a conceptual framework

The basic requirement for capturing achievements in knowledge and technology transfer is the definition of the institution-specific understanding of transfer and the strategic objectives with regard to it. This involves determining which transfer fields and activities are part of the institution's transfer profile and how these relate to research and teaching. The transfer classification serves to define and reflect on this understanding of transfer. It was developed together with the participating universities and non-university research institutions (see Figure 1), taking into account existing national and international approaches. The subdivision into institutional requirements and eight transfer fields reflects a broad understanding of transfer and includes the entire range of possible activities and formats found across all profiles of the participating institutions. It includes business and technology-related transfer as well as extended knowledge transfer and collaboration with various stakeholders, e.g., social or cultural actors. The institutional requirements describe critical success factors for transfer and cooperation activities. Based on the transfer classification, higher education institutions and research institutions can categorise their transfer activities, reflect on their specific transfer profiles and use this knowledge to select the transfer fields or indicators to be captured. The transfer profile of an institution is composed of a specific combination of individual transfer fields.

The central added value of the transfer classification lies in the systematisation of the range of possible transfer activities and formats and the consideration of profile strengths and fields of development resulting thereof.

2.3 Core indicators and optional indicators

Specific indicator sets are assigned to each of the transfer fields and institutional requirements listed in the transfer classification. Each indicator set consists of a series of *core indicators* and *optional indicators*.

The *core indicators* provide a brief representation of a transfer field by means of a limited number of important indicators with high informative value.

They were classified as particularly relevant and practicable by the participating institutions in the joint coordination and testing process.

The *core indicators* create transparency and visibility with regard to the nature of the core activities within the transfer fields.



The breakdown into institutional requirements and eight transfer fields covers the entire range of possible activities and formats found across all profiles of the participating institutions.

The *optional indicators* are complementary and record activities and achievements in greater detail. They provide scientific institutions with a broader perspective and deeper insights into transfer fields that are particularly relevant to them.

The respective scientific institution decides which transfer fields it wants to focus on according to its own strategic goals, and which transfer fields it wants to examine more closely with the help of the optional indicators. It may be prudent to supplement the indicator sets with further profile-specific indicators.

The collection of core and optional indicators requires time and human resources.

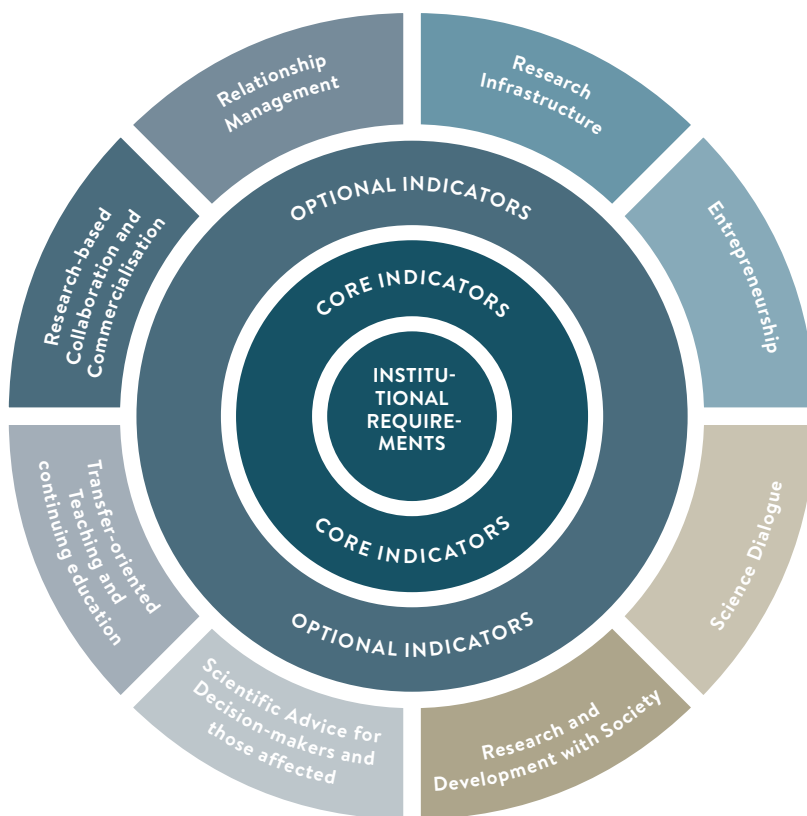
The extent of the actual survey effort depends in particular on the institution-specific objectives and requirements. Additionally, it must be taken into account that certain indicators can only be collected through a survey conducted with the scientists engaged in transfer activities.



The selection of indicators is not to be understood as conclusive but can be supplemented with further profile-specific indicators.

FIGURE 2: CORE AND OPTIONAL INDICATORS

Indicators for a broader understanding of transfer



Source: own elaboration

2.4 Focus: Institutional requirements and transfer fields

In the following, the institutional requirements and the eight transfer fields as central elements of the transfer classification are presented in more detail.

INSTITUTIONAL REQUIREMENTS

The institutional requirements provide information about essential parameters that form the basis for transfer. They help to promote transfer and the development of a culture of transfer and collaboration within the overall organisation. The institutional requirements are subdivided into four dimensions: (1) strategic incorporation, (2) incentives and appreciation, (3) operational structures and processes, and (4) personnel and resources.



The institutional requirements provide information about essential parameters that form the basis for transfer.

1. Strategic incorporation

A strategic incorporation of transfer is aimed at making transfer visible as an explicit operational objective, both internally and externally, and to emphasise it as a relevant scientific performance dimension of the organisation. This can be expressed at the management level through visible responsibility for transfer (for example, through corresponding denomination), through statements in strategic documents or through consideration in (internal/external) goal-setting processes and performance measurements.

2. Incentives and appreciation

This category analyses whether and to what extent the accomplishment of transfer is promoted through specific and systematic incentives, e.g., monetary (allowances, bonuses) and non-monetary forms of incentive (visibility, appreciation) for persons engaged in transfer-related activities.

3. Operational structures and processes

This requirement refers to the support of transfer-relevant actors, provided either internally by the institution or by external service providers such as transfer companies under private law. It also deals with the question of a systematic co-operation management for the establishment, maintenance and coordination of contacts.

4. Personnel and resources

The fourth category of institutional requirements covers the allocation of financial resources and the provision of transfer-related personnel, as well as the extent of autonomous, decentralised scope of action in the use of resources by transfer-relevant actors or organisational units.

The institutional requirements represent essential starting conditions and conducive framework conditions for the facilitation and practical implementation of transfer.

However, they do not allow inferences about the quantity and quality of transfer-oriented activities and formats or about the performance of the structures. This data is gathered in relation to the individual transfer fields.

TRANSFER FIELDS

The range of possible transfer activities and formats is subdivided into eight transfer fields as per mutual understanding of the institutions participating in the project (see Figure 1). Based on a broad understanding of transfer, the transfer fields include activities, formats and structures in business- and technology-related transfer areas.

» Transfer field Research-based Collaboration and Commercialisation

The transfer field of *Research-based Collaboration and Commercialisation* focuses on research results from all scientific disciplines as transfer objects. The collaboration partners involved are non-scientific actors from all areas of society. The aim is to enter into a contractually formalised collaboration with commercial application in mind, and to achieve both a social or economic benefit and added value for research and teaching. Typical activities include the areas of collaborative research, contract research, services, IP management and innovation marketing.

» Transfer field Relationship Management

The transfer field of *Relationship Management* revolves around building open, trusting relationships between people through the appreciative exchange of knowledge and experience. The activities in this transfer field are not necessarily goal-oriented as such. Rather, the objective is to build and maintain social networks for transfer activities. Typical activities and formats range from endowed professorships to fundraising, German scholarships, donations and sponsoring to career counselling and alumni work.

» Transfer field Research Infrastructure

Research Infrastructure as a transfer field involves the provision and use of large-scale equipment, laboratories, workshops, special libraries, archives, collections, software as a service, computing services, storage capacities, databases and data for users outside the scientific community. It is paramount that the infrastructure be unique and not customary. The objective is to further exploit the potential of existing research infrastructures for non-scientific user groups and to address their needs more purposefully.

» Transfer field Entrepreneurship

The transfer field of *Entrepreneurship* focuses on the application of ideas, knowledge, and research results by founding new companies (profit & non-profit). In addition, the teaching of entrepreneurial thinking as problem-solving and organisation skill as well as the teaching of specific start-up knowledge are considered. This is embedded in a process that begins with sensitisation, followed by the ascertainment of the founding principle, and ends with the market entry. It excludes the areas of curricular teaching and research, insofar as they are not explicitly oriented towards a concrete start-up project.

» Transfer field Transfer-oriented Teaching and Continuing Education

Transfer-oriented Teaching and Continuing Education encompasses study and learning formats that, through a formalised process, integrate partners outside the scientific community into teaching in a co-creative role. The aim is to promote the transfer of knowledge between the partners. Transfer can and should take place in both directions. Typical activities and formats include, for example, study programmes and formats that integrate or accompany practice and training (including doctoral study programmes in collaboration with practice partners), or further training formats with and for practice partners.



Based on a broad understanding of transfer, the transfer fields include activities, formats and structures in business- and technology-related transfer areas.

» **Transfer field Scientific Advice for Decision-makers and those affected**

The transfer field of *Scientific Advice for Decision-makers and those affected* covers occasion-related activities by researchers that are directed at decision-makers in public and private institutions or parties concerned on the basis of their scientific expertise on a specific topic. The activities can be offered or organised proactively or specifically requested by external parties. The aim is to provide the aforementioned groups of people with scientifically substantiated support with regard to decision-making. This includes, for example, the compilation of expert reports and statements, committee activities and consulting assignments as well as participation in standardisation procedures.

» **Transfer field Research and Development with Society**

In the transfer field Research and Development Involving Society, the focus is on the participation of society in the research process and in the development of solutions. The transfer field covers projects of public interest and involves external partners in the development of research questions, in the research process itself and in the development of solutions. External partners may come from all parts of society, including non-profit organisations, civil society actors, municipalities, politics, cultural institutions, and companies, but also include citizens, patients, etc. The transfer field is not intended to be economically exploitable. Unlike the field of *Research-based Collaboration and Exploitation*, economic utilisation is not the aim nor the focus of this field.

» **Transfer field Science Dialogue**

Dialogue-oriented formats of scientific communication with society are addressed in the transfer field of *Scientific Dialogue*. These formats facilitate and promote direct dialogue between scientists and people outside the scientific community. They allow for an exchange about research results and the research process, and address questions communicated from the field of science to society as well as from society to the scientific community. Concrete examples of dialogue-oriented formats range from moderated blogs to formats such as children's universities, exhibitions and student labs.

2.5 Interim conclusion

The classification presented is a shared guiding framework for scientific institutions. They can use it for self-categorisation and, if necessary, for comparison with other institutions with a similar profile. The transfer classification offers every scientific institution the opportunity to consciously address the profile it seeks to promote and to examine the relevance of the transfer fields accordingly. The indicators make it possible to build up one's own standardised database. The selection of indicators is not to be understood as conclusive; they may be adapted and expanded. This is especially true for scientific institutions that may not yet see themselves sufficiently represented by the profiles of the institutions participating in the Transfer Barometer. The Transfer Barometer will be reviewed and further developed in the medium term using the findings gained through practical application at various scientific institutions.



The transfer classification offers every scientific institution the opportunity to consciously address the profile it seeks to promote and to examine the relevance of the transfer fields accordingly.

IRECOMMENDATIONS FOR IMPLEMENTING THE TRANSFER BAROMETER

03

3.1 Success factors

The collection of transfer indicators constitutes a challenge for both the administration and the organisational culture. Successful elicitation and recording of transfer activities are facilitated by the fulfilment of certain requirements. The scientific institutions involved in the trial have established the following key success factors for operational implementation.

1. SETTING PRIORITIES AND SPECIFYING THE INSTITUTION'S OBJECTIVES IN USING THE TRANSFER BAROMETER

The goals pursued in the utilisation of the Transfer Barometer may differ between scientific institutions and their management. Depending on the perspective, it can primarily serve as an operational instrument for internal performance measurement and for monitoring transfer activities. From a more strategic perspective, it can support institutional management and profile building by identifying strengths and development potential. These two uses are not mutually exclusive but combinable. It is important to be aware of the goals intended with the use of the Transfer Barometer, to specify them, and to communicate them as broadly and transparently as possible within the institution.

2. FOCUS ON PROFILE-RELEVANT TRANSFER FIELDS AND INDICATORS

It is advisable to focus on strategically relevant transfer fields and indicators. The specific composition and use of the indicators should correspond to the importance of the individual transfer fields within the institution. Each scientific institution must decide which transfer fields it will focus on with a view to its own strategic goals, and compile the indicator sets accordingly. In this process, differences between universities and non-university research institutions with regard to their profile and mission will become apparent. For example, the transfer field of *Research Infrastructure* will likely be less relevant for many smaller higher education institutions; the same applies to transfer-oriented teaching at non-university research institutions. Even within comparable types of institutions, profile and mission-related differences will arise in the choice of transfer fields and indicator sets.

3. OBTAIN VISIBLE SUPPORT FROM THE MANAGEMENT OF THE SCIENTIFIC INSTITUTION

The support and commitment of the top-level management is a key factor for success. It is particularly decisive for the strategic objectives and the understanding of transfer at the institution. The management level can highlight the purpose of the survey and the potential added value for the institution, and communicate that the effort involved is of central importance.

To this end, the management level should repeatedly draw attention to the survey early on and clearly express a corresponding expectation of participation. The management level should also be involved in the preparation and implementation in order to motivate as many participants as possible. To show visible support for the project, different communication formats appropriate to the institution should be chosen and combined on various occasions. Furthermore, it may be prudent to appoint a central contact person for the overall coordination of data collection across all transfer fields, who acts on behalf of the management.

4. PROMOTE BROAD ACCEPTANCE AND SUPPORT AND DEMONSTRATE THE ADDED VALUE OF THE SURVEY

For a successful survey, the support and acceptance of all persons directly and indirectly involved is central. These are primarily scientists, but also people in central research and transfer institutions, in the administrative sector, and in staff departments. For these persons and their respective perspectives, the goals as well as the added value and potential specific to them must be clearly recognisable in order to justify the additional effort. These are presented in detail in a separate “Executive Version”. From the perspective of central transfer units, the survey can help to make success visible and use it as an argument for budget and resource allocations. For the administration, the Transfer Barometer can provide a helpful template for systematisation and standardisation, while scientists receive an instrument for presenting their own transfer activities. In order to gain additional support, the relevant internal committees or decision-making bodies should also be involved from the beginning and endorse the implementation of the Transfer Barometer.

5. ALLOCATE FINANCIAL AND HUMAN RESOURCES FOR THE SURVEY

The recording and presentation of transfer activities is an additional task that involves data collection efforts. As experience from practical trial shows, this task cannot be successfully implemented in-between and drawing only on existing resources. The provision of adequate human and financial resources from the outset is an indispensable success factor. At the same time, an allocation of resources underlines the relevance for the institution and management level. The exact nature of this provision must always be determined individually, taking into account the goals pursued with the Transfer Barometer and other factors specific to the institution.

6. TAKE INTO ACCOUNT AND LIMIT THE TIME AND EFFORT REQUIRED FOR THE SURVEY

It should be examined whether a survey can be linked to already-conducted or existing surveys. If transfer fields are being surveyed for the first time, it can be helpful, especially in the case of large institutions or extensive transfer fields, to start with subdivisions and expand the scope in follow-up surveys. Alternatively, a survey may also initially focus only on particularly relevant actors and projects rather than the full range. An institution may also choose to only gradually eliminate “blind spots”. If the scientific institution decides to conduct a comprehensive survey, it does not necessarily need to do so annually. A two-to-three-year interval may be sufficient to identify developments and at the same time limit the effort.

The recording of transfer activities should be seen as a long-term organisational development process. The learning and experience effects gathered in the course of the initial surveys should support the establishment of corresponding routines and processes and contribute to significantly reducing future efforts. With regard to the development of reporting systems, institutions should consider the transfer fields that are particularly relevant to them in order to be able to standardise and simplify the survey in the future. This in turn requires a corresponding willingness to invest or allocate resources.

3.2 Outlook

The Transfer Barometer yields greater benefits the more higher education institutions and non-university research institutions apply and further develop the proposed indicators. A widespread use would result in an increasing standardisation of transfer indicators and surveys, as well as in synergies through recurring reporting requirements. For scientific institutions, this would create a common basis that they can use for institutional classification, orientation, and for cross-institutional comparisons of transfer profiles. Due to the dynamics in the field of *Transfer and Collaboration*, the indicator sets will be subject to change.

The Transfer Barometer is a self-learning instrument. The core indicators and optional indicators must be continuously reviewed and further developed on the basis of experience regarding their implementation. New developments – such as Open Transfer or a stronger impact orientation – may also be incorporated into the process of further development. In order for the Transfer Barometer to develop successfully as a self-learning instrument, cross-institutional exchange about these experiences is essential.

IMPRINT

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Essen 2021
Baedekerstraße 1
45128 Essen, Germany
+49 201 8401-181

AUTHORS

Andrea Frank
Cornels Lehmann-Brauns
Dr. Frauke Lohr
Arne Meyer-Haake
Daniel Riesenberg

EDITOR

Simone Höfer

PHOTOS

gremlin/iStock.com (titel)

GRAPHICS AND LAYOUT

SeitenPlan GmbH
Dortmund, Germany

STIFTERVERBAND
für die Deutsche Wissenschaft e.V.

Baedekerstraße 1
45128 Essen, Germany
+49 201 8401-0

www.stifterverband.org

