Creating Cultural Change

Fostering Social Innovations from Higher Education Institutions

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In Brief

The paper presents the key findings from our research project WISIH – Ways and Indicators for Social Innovation from Higher Education Institutions, which we currently conduct at the CHE Centre for Higher Education, located in Guetersloh, Germany. It deals with the questions which role (German) higher education institutions (HEI) and their members could and should play in the process of creating cultural change by social innovations.

The findings are based on a survey among professors of nursing science and work and organisational psychology as well as on a series of interviews with professors, project partners and several other stakeholders involved in social innovation projects.

Quite a few professors taking part in the survey had already been involved in projects that brought about a social innovation. However, they face various inhibiting factors, especially a lack of time, staff, and money to commit themselves more in these kinds of projects. The analysis of the interviews showed that HEI can play quite a few roles in the innovation process but need to cooperate with external partners to co-create social innovations and thus initiate and achieve cultural change.

If higher education institutions, their staff and even their students are to commit themselves more to social innovation, funders, e.g., ministries of science and education as well as the HEI themselves, would need to adjust their funding and incentive strategies as well. The WISIH-project provides indicators for monitoring this process.

This paper was originally prepared for and presented at the EAIR 44th Annual Forum in September 2022 at MCAST in Malta.

Kurz gesagt

Das vorliegende Papier fasst die wichtigsten Ergebnisse des Projektes WISIH – Wege und Indikatoren Sozialer Innovationen aus Hochschulen für eine englischsprachige Leserschaft zusammen. Das Projekt, das derzeit am CHE durchgeführt wird, beschäftigt sich mit der Frage, welche Rolle Hochschulen und ihre Mitglieder im Prozess des gesellschaftlichen Wandels durch Soziale Innovationen spielen bzw. spielen können.

Die gewonnenen Erkenntnisse basieren auf einer Umfrage unter Professor*innen der Fächer Pflege / Pflegewissenschaft und Arbeits-, Organisations- und Wirtschaftspsychologie sowie einer Serie von Interviews mit Professor*innen, Projektpartnern der Hochschulen und weiteren Stakeholdern, die an Sozialen Innovationen beteiligt sind.

Nicht wenige der befragten Professor*innen waren bereits in Projekte involviert, die Soziale Innovationen zum Ziel hatten. Allerdings berichten diese von hinderlichen Faktoren, insbesondere einem Mangel an Zeit, Personal und Geld, um sich mehr in solchen Projekten zu engagieren. Die Analyse der Interviews zeigte, dass Hochschulen eine ganze Reihe von Rollen im Innovationsprozess bzw. Innovationsökosystem spielen können. Allerdings müssen sie mit externen Partnern kooperieren, um mit ihnen zusammen Soziale Innovationen zu initiieren und gesellschaftlichen Wandel erreichen zu können.

Wenn Hochschulen, Forschende und Studierende sich mehr im Bereich Soziale Innovationen engagieren sollen, müssen Geldgeber, beispielsweise Wissenschaftsministerien und auch die Hochschulen selbst ihre Finanzierungs- und Anreizstrukturen anpassen.
Im Rahmen des WISIH-Projektes erarbeitet das CHE entsprechende Indikatoren, um diesen Prozess abzubilden.

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Method overview

The WISIH Project

The CHE Centre for Higher Education in Germany currently conducts a research project called WISIH – Ways of and Indicators of Social Innovations from Higher Education Institutions. It focuses on social innovations from the subject areas of nursing / nursing science as well as work- and organisational psychology. The project is funded by the German Federal Ministry of Education and Research. Within the project, two groups were surveyed: Professors and external stakeholders.

A Professors' survey and interviews

Sample

Complete survey amongst professors in nursing / nursing science as well as work- and organisational psychology plus members of the word- and organisational psychology section of the German Psychology Society. In total 452 professors were invited to the survey. 113 of them (25%) completed the online questionnaire.

Method of data collection

Online-questionnaire with questions regarding the following topics: The professors' familiarity with and knowledge of the concept of social innovation, personal commitment and respective activities in the field, personality traits and attitudes, inhibiting as well as supporting factors for social innovation activities. This was followed by a first series of interviews with 25 researchers from both fields who have been involved in social innovation activities.

B Interviews with external stakeholders

Sample

A wide range of external partners from the fields of economy, politics, and civil society, that are involved in social innovations. Interviewees from the politics sector included members of the German Parliament (Bundestag) and representatives from ministries and institutions in charge of research funding. Another group of actors were intermediary institutions like non-profit associations and local public institutions, that try to promote social innovations. The third group were direct project partners of HEI in social innovation projects.

Method of data collection

22 Interviews with 23 interviewees were conducted via videocall.

Creating Cultural Change by Social Innovations

Social innovations can be understood as new organisational structures, new ways of interacting, new mindsets and values that are deliberately brought about by certain persons, groups or organisations to tackle pressing challenges (Roessler, Hachmeister, Ulrich, & Brinkmann, 2020). When these new ways and ideas become widely accepted and implemented, they turn into a social innovation that may eventually lead to cultural change.

Societies need social innovations to react to societal challenges like an ageing population, climate change, a pandemic, or the emergence of technological innovations (e.g., smartphones) that change the way people live.

Social innovations can offer creative and sometimes unorthodox solutions to address urgent questions – and higher education institutions (HEI) could and should, in our opinion, contribute to this process to a larger extend than they have done so far.

Definition of Social Innovations

Until now, there is not a universally accepted definition of social innovations. Two approaches seem to dominate the discussion: The '**normative**' and the '**sociological**' perspective.

The definitions focusing on the 'normative' aspects highlight the importance of social innovations regarding common welfare (Phills Jr., Deiglmeier, & Miller, 2008). The 'sociological' point of view stresses the change of societal/social practices and structures with a descriptive focus, regardless of any effects of the innovation on the common good (Howaldt & Schwarz, 2010).

As we have experienced in various interviews and other conversations, these two different understandings of social innovations make communication on this topic difficult. The normative perspective seems to dominate the discussion, so that technical innovations for common welfare are sometimes interpreted as social innovations whereas 'non-public' changes in social practices (e.g., innovative leadership concepts in businesses) are often not seen as social innovations at all.

Social innovations often emerge from informal or collaborative contexts and are often **implemented in a participative way**: As social innovations in most cases consist of a change of behaviour, people that are supposed to change their behaviour need to participate in this process.

Social innovations can **interact with technological innovations** and often arise as accompanying circumstances or as consequences of technological innovations. Just take the introduction of smartphones and the subsequent change of behaviour and communication culture as an example. Technological innovations are often dependent on a change in mentality – or they cause a change in mentality. These changes in mentality can then trigger social innovations and embed technological innovations into social practices.

It can therefore be assumed that social innovations do not run linearly – from an idea to its widespread acceptance - but can be understood as a **nonlinear process** that is constantly moving back and forth and integrates several people as well as entities. Interactions between politics, research, business, and society decide whether a social innovation will spread or not.

By definition, a new idea becomes a (social) innovation only if it is implemented in the respective fields or in society at large and becomes widely accepted.

Social Innovations from Higher Education Institutions

However, social innovations did not get the same political and scientific attention in the past as their 'twin' – technological innovations. Little is known about the way social innovations come about and which role HEI play in the process – at least in Germany where our research took place.

What is known though, is that so far higher education institutions only rarely participate in projects which result in social innovations (Majewski Anderson, Domanski, & Howaldt, 2018). In any case, social innovations cannot be brought about by higher education institutions alone, but rather emerge in so called **'innovation ecosystems'** (Carayannis & Campbell, 2011; Granstrand & Holgersson, 2020), which include various players with different perspectives and different backgrounds.

Since social innovations can also be regarded a result of **third mission** activities that are pursued by a growing number of higher education institutions (Hachmeister, Möllenkamp, Roessler, & Scholz, 2016) and are recently also receiving much greater attention by the current German Federal Government and their research and innovation strategy, it

is likely that they will play a greater role for higher education institutions in the future.

In other countries across the globe, such as the US, one can witness an explosive growth in initiatives focusing on social innovation (McBeth, 2018). Higher education institutions seem in fact suited for the emergence and the development of social innovations (Matheson, 2008).

They have a huge number of resources available to tackle societal challenges; Researchers possess the knowledge and the expertise to focus on solutions and have technical competencies to collect and analyse empirical data about the feasibility of the innovation as well as to measure their impact (ibid).

Our hypothesis within the WISIH-Project was that social innovations originating from HEI need to become more visible in various senses and need to be promoted. For this reason, we wanted to understand the innovation process, describe and measure it.

Which promoting and inhibiting factors do researchers and external partners encounter to bring about social innovations? What would be promotive and beneficial environments and regulatory frameworks to bring about more social innovations? What role can higher education institutions play within the innovation process? And which set of indicators is needed to describe and measure social innovation activities?

In the project **WISIH – Ways and Indicators for Social Innovation from Higher Education Institutions**, financed by the German Federal Ministry of Education and Research, we started to shed some light on these questions in 2019.

Method

Within the WISIH project we conducted an online survey among professors of nursing science and work- and organisational psychology as well as two series of interviews with professors and external stakeholders.

In a first stage of the project, we conducted a survey among professors in two disciplines, nursing science and work and organisational psychology. These fields were selected because we assumed that researchers in these fields are more likely to work on a greater number of social innovations than researchers in other fields - nursing science presumably more in the 'normative' sense of social innovation (i.e., for the common good), work and organisational psychology supposedly more in the 'sociological' sense (i.e., change of social practices / behaviour).

In Germany nursing science is mainly taught at universities of applied sciences. Work and organisational psychology is part of the psychology curriculum at full universities as well as part of business psychology curricula at universities of applied sciences.

At universities of applied sciences (in contrast to full universities) there is hardly any academic staff apart from the professors, so we confined the survey to professors only. We invited all professors of these fields who we could contact by a publicly available e-mail address – a total of 452 professors.

Table 1: Surveys within the WISIH project

Target group	Method	Number of cases	Survey period
Professors of nursing science and work-and organisational psychology	Online survey	113	February-March 2020
	Online interviews	25	May-August 2020
Political actors, intermediary institutions, external project partners of the HEI	Online interviews	22	March-May 2021

The survey was conducted to understand the professors' familiarity with and knowledge of the concept of social innovation, their personal commitment and respective activities in the field as well as some personality traits and attitudes. In addition, we asked the professors to name inhibiting as well as supporting factors for their innovation activities. We also asked if we could contact the respondents for a subsequent interview.

A total of 113 (nursing science: n=49; work and organisational psychology: n=64) professors responded to our questionnaire.

In a next step, we interviewed 25 researchers from both fields who have been involved in social innovation activities. In these interviews we asked, which topics were addressed in their research, which innovations were targeted or achieved, which steps were taken, and which phases of the innovation process were run through, which partners were involved in the projects / innovation process and how the researchers worked together with these partners and finally, which inhibiting factors, respectively which critical factors for success could be identified.

Later in the project we conducted a series of 22 interviews with a wide range of external partners from the fields of economy, politics, and civil society to get an idea what the different players and stakeholders in the innovation ecosystem need to be better able to work on social innovations and see them implemented.

The interviewees from the politics sector included members of the German Parliament (Bundestag) and representatives from ministries and institutions in charge of research funding. Another group of actors were intermediary institutions like non-profit associations and local public institutions, that try to promote social innovations. The third group were direct project partners of higher education institutions in social innovation projects.

Results of the Professors' Survey

The results of the professors' survey include the professors' familiarity with the concept of social innovation and their involvement in projects potentially leading to social innovations. The professors were also asked to assess inhibiting and supporting factors for their engagement in social innovation projects and to describe their own personality and attitudes.

The complete results of these surveys have already been published in three working papers (in German). In this paper, only selected results are presented.

Please refer to Roessler, Hachmeister, Ulrich & Brinkmann (2020) for the results of the professors' survey, Hachmeister & Roessler (2020) for the results mainly of the interviews with the professors as well as Hachmeister & Roessler (2021) for the results of the interviews with the external partners and stakeholders.

Familiarity with the concept and Involvement of the professors in social innovation

All in all, two thirds (67.3 %) of the professors were already familiar with the concept of social innovations before they took part in survey.

But there are differences between the surveyed disciplines: 80.9 percent of nursing scientists were familiar with social innovations. Among the psychologists, only slightly more than half of them (56.1 %) were familiar with social innovations.

80.9 percent of the professors of nursing science were already involved in social innovations, but only 49.1 percent of the surveyed psychologists. A surprising finding was that many of the professors who participated in the quantitative survey were already committed in bringing about social innovations but stated that they were not familiar with the concept 'social innovation'.

The professors who had already been involved in social innovation projects were also asked to classify the achieved stages of the social innovation, using an innovation model by Murray, Caulier-Grice & Mulgan (2010).

In this model, the social innovation process starts with a diagnosis of a problem, followed by a phase where new ideas to solve the problem are generated. The ideas are then tested in practice and – if successfully tested – implemented at first with a limited scope (e.g., in only one institution or company). From that point, ways of scaling up/out can be developed to further spread the innovation. The last stage would be that a real "system change" is reached – meaning that the new solution to the problem becomes widespread and widely accepted.

Figure 1 shows the stages of social innovation reached by the professors of nursing science and work and organisational psychology.

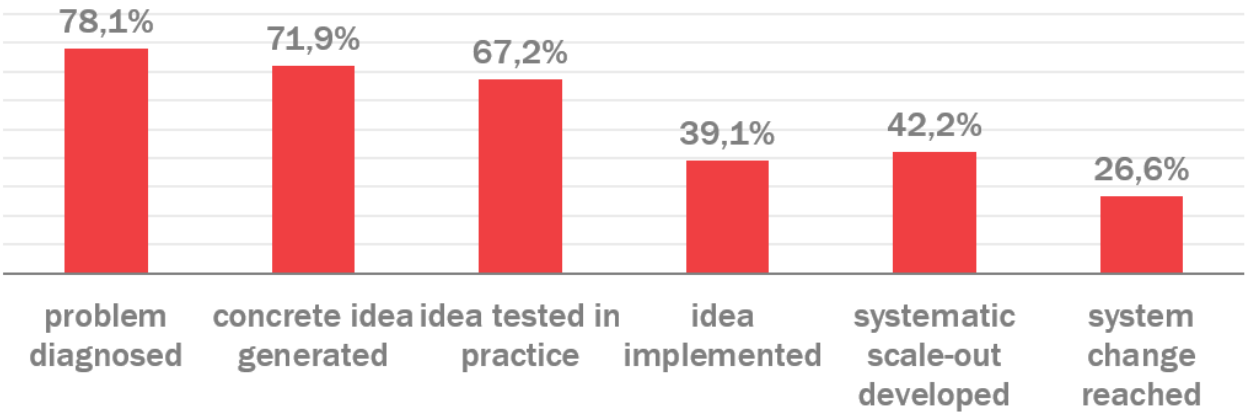

Figure 1: Achieved state of innovation in at least one project the professors were involved in

Inhibiting Factors

All the professors were asked to specify, to what extent certain factors were inhibiting for their (potential) work on social innovations. The answers were given on a 4-point scale (very inhibiting, inhibiting, rather inhibiting, not inhibiting). The results can be found in Table 2.

A great majority of the professors indicated that a 'lack of time' (in terms of their own time or that of staff members) was a limiting factor. About 72 percent of the professors mentioned the problem of 'no (adequate) staff'. Problems with funders or missing funding opportunities were also often marked as 'very inhibiting' or 'inhibiting' for social innovation projects.

Table 2: Most inhibiting factors for social innovation projects at HEI

Most inhibiting factors for social innovation projects at HEI, reported by the professors	Percentage of answers 'very inhibiting' or 'inhibiting' (4-point scale)
Lack of time (own resources or resources of potential co-workers)	81.0 %
No (adequate) staff	71.6 %
Problems with funders (e.g., large effort to get funding, long time until funding decision is made)	70.7 %
Missing funding opportunities (e.g., missing funding programmes, low success rates, potential funders have no money)	65.3 %
Deficits in HEI administration (e.g., missing support of project acquisition/project administration)	64.5 %
Missing or inadequate incentives in the institution	64.4 %

Some organisational problems were also often classified as 'inhibiting' or 'very inhibiting': About 65 percent of the professors categorised 'deficits in HEI administration' (e.g., missing support of project acquisition / project administration) as (very) inhibiting, another 64 percent of the professors found 'missing or inadequate incentives in my institution' as inhibiting or even very inhibiting.

Again, it must be considered that most of the professors surveyed were employed at universities of applied sciences – with less focus, time and staff for research and development and often a smaller unit for research administration.

Supporting Factors

Only the professors that had already been involved in social innovation projects were also asked to assess a list of supporting factors for social innovation projects. Again, the answers were given on a 4-point scale (very supportive, supportive, rather supportive, not supportive). The results can be found in Table 3.

'Personal factors' like the professors' own expertise and contacts in their field are seen as 'supportive' or 'very supportive' by all professors. 'Contacts to external partners' (86.3 %) are much related to this, as well as 'strategic cooperation with other institutions'. This points to the fact that higher education institutions / professors cannot initiate social innovations, e.g., to meet a societal need (67.9 %), on their own but need to work together with partners.

Table 3: Most supporting factors for social innovation projects at HEI

Most supporting factors for social innovation projects at HEI, reported by the professors	Percentage of answers 'very supportive' or 'supportive' (4-point scale)
Personal factors (expertise, contacts)	100.0 %
Team spirit within the working group	91.2 %
Contacts to external partners (networks, exchange at conferences)	86.3 %
Strategic cooperation with other institutions	70.4 %
Continuity among staff	83.3 %
Adequate funding (programmes)	71.7 %
Societal need	67.9 %
'Culture of enabling' at the Institution	56.6 %
Reduction of teaching load	53.2 %

Still, the colleagues at the own institution are also important, be it in terms of 'continuity among staff' (83.3 %), for which adequate funding (71.7 %) is necessary, or even 'team spirit within my working group' (91.2 %).

A 'culture of enabling' (56.6 %) stands for a certain climate or an attitude of the HEI management, which is open to finding ways of realizing ambitious projects, for example by approving a reduction of the teaching load (53.2 %), especially for professors at universities of applied sciences who are to teach 18-19 hours per week.

Personality Traits / Attitudes and Involvement in Social Innovation Projects

The fact that all professors found 'personal factors' either supportive or very supportive for the work on social innovations raises the question if attitudes or even personality traits might relate to their engagement in social innovation. Our online questionnaire for the professors listed 18 personality traits / attitudes that from our point of view might relate to such commitment.

We asked the respondents to choose up to five of them which described themselves most accurately. The results are shown in Table 4.

Table 4: Attitudes / personality traits of professors involved / not involved in social innovation projects

Five most often self-reported attitudes / traits professors...	
... involved in a social innovation project	...not involved in a social innovation project
Research affine (53 %)	Curious (52 %)
Cooperative (50 %)	Interested in social issues (39 %)
Interested in social issues (48 %)	Teaching affine (36 %)
Open to new things (36 %)	Cooperative (36 %)
Creative (31 %)	Conscientious (33 %)

Professors that had already been involved in social innovations most often chose 'research affine' and 'cooperative' as well as 'interested in social issues'. 'Open to new things' and 'creativity' were also among the five most often selected personality traits / attitudes. Professors without any prior involvement in social innovations most often chose 'curious', followed by 'interested in social issues' and 'teaching affine'.

It must be considered that the professors surveyed were mainly from universities of applied sciences. The main objective of professors at this kind of higher education institution is teaching and there is often not much time or financial budget for research activities. Thus, considering yourself as primarily 'research affine' (and not 'teaching affine') might really make a difference at this kind of HEI. At full universities, being 'research affine' is a basic employment prerequisite.

Even if it is considered that personal questions, like the ones included in the questionnaire, bear the risk of social desirability, and the traits / attitudes were only a small selection generated by the research team and not based on prior research, the findings hint at the fact that personality traits / attitudes might also play a role in whether someone gets involved in social innovations.

Process Modelling: The Way to Social Innovations

We used the information gathered in the interviews with the various target groups (professors, Political actors, intermediary institutions, external project partners of the HEI) to develop and refine a model of social innovation projects as well as for the various roles that need to be played in an innovation ecosystem.

After looking at the individual level of the professors we tried to model the processes taking place during social innovation projects at higher education institutions. This was also the basis for the development of a set of indicators for social innovation from HEI which we present in the "CHE Indicator Portal" (CHE Centre for Higher Education, 2022).

Modelling Social Innovation Projects

Our starting point was a process model that we had already developed in a previous CHE-project named FIFTH – Facets of and Indicators for Applied Research and Third Mission at Universities of Applied Sciences (Hachmeister, Roessler, Scholz & Möllenkamp, 2016).

This model, originally developed for applied research and third mission, was adjusted based on the findings from the qualitative interviews mentioned above. The adjusted model can be found in Figure 2.

We used an IOOI-model (input, output, outcome, impact), but adjusted the names of the four steps, replacing 'input' by the term 'prerequisites', 'output' by 'activities and 'outcome' by 'results'. We included the higher education institutions (HEI) as well as their project partners in the model.

The **prerequisites / input** for the HEI as well as the partners consist of resources, structures, strategies, and staff. Also, for social innovation projects, a "prompt" is needed – a problem to be solved or a solution to be evaluated for example.

The next step are joint **activities** (the output) of the HEI and their partners, e.g., projects, surveys or the development and testing of prototypes of the solution.

Ideally, the activities lead to **results** (the outcome), e.g., a developed and tested prototype or a publication.

The activities and results may then lead to impact, which we divided into 'internal impact' and 'external impact'.

Internal impact consists of impact for the HEI and project partners themselves, e.g., a qualification of the staff by the experiences made in the project, a gain in reputation or even revenues from the results.

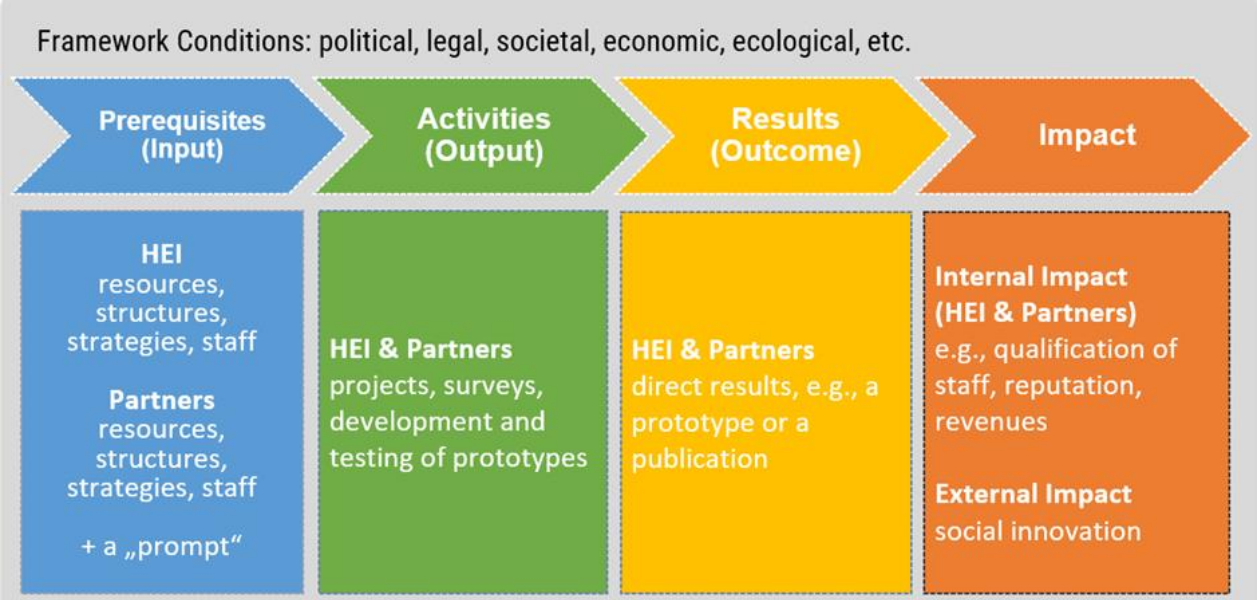

Figure 2: WISIH-Model of social innovations from HEI

This all may lead to an enhancement of the prerequisites for the next project. The 'external impact' would, in the case of social innovation projects, be the social innovation itself – or moving it from one stage to another in terms of the innovation model of Murray, Caulier-Grice & Mulgan (2010) mentioned above.

The whole process takes part under certain political, legal, societal, economic, ecological, and other framework conditions that also need to be considered when analysing social innovations.

Modelling the Innovation Ecosystem

The process model described above seems suitable to explain and prospectively measure activities at HEI and their direct project partners leading to social innovations, e.g., by counting the number of projects, publications or presentations related to social innovations. However, to analyse in greater depth, what role(s) higher education institutions can play in the process of social innovation, respectively in the innovation ecosystem, another kind of analysis was needed.

We tackled this question by analysing the interviews with the partners and stakeholders as well the interviews with the professors. We identified the various roles in the innovation ecosystem played by the stakeholders in our interview sample, using a classification from the

"Innovation Ecosystem Strategy Tool" provided by the Center for Responsible Research and Innovation of the Fraunhofer IAO (Schütz, Muschner, Ulrich & Schaefer). The authors describe 23 different roles and divide them into nine groups. An illustration of this classification is provided in Table 5.

Table 5: Roles in the innovation ecosystem (from Frauhofer IAO Innovation Ecosystem Strategy Tool)

Group	Role
 **Collaboration Designers** Set up the framework for collaboration	**Interaction Enablers**: Enable collaboration and exchange by designing processes and formats
	Gatekeeper: Have a network of relevant contacts at their disposal and have access to resources
	Strategists: Develop a comprehensive strategy that is followed by all actors
	Administrators: Take on comprehensive administrative tasks
 **Donors** Provide material resources	**Resource Providers**: Provide basic material resources
	Investors: Invest in specific activities
 **Knowledge Workers** Close knowledge gaps	**Knowledge Creators**: Do research to create new knowledge
	Quality Ensurers: Evaluate and ensure the quality and the compliance with scientific standards of the innovation process
 **Knowledge Providers** Provide expert knowledge for the innovation ecosystem	**Experts**: Answer concrete questions
	Contextualisers: Have an overview on the broad discourse and keep relevant related issues in mind
	Pioneers: Bring in the latest research results and trends
 **Pilots** Ensure the relevance of the innovation	**Agenda Setters**: Define the innovation agenda or bring in tasks to be solved
	Demand Experts: Make sure that the solution/innovation fits the demand
	Navigators: Give advice to successfully implement the solution (politically, economically, technically and in society)
 **Attractors** Facilitate the interaction with the world outside the ecosystem	**The Trustworthy**: Help with their name / reputation to get a good public image
	The Contractually Capable (sui juris): Need to be involved to be formally capable of acting
 **Implementers** Implement the ideas	**Drivers / Owners**: Take over the ownership to drive the project
	Developers: Implement the results into products and services
	Business Modellers: Develop business model for the solution
 **Spreaders** Spread the innovations	**Providers**: Provide the target group with the solution
	Enforcers: Implement the solution into new laws, strategies, procedures and thus turn it into a social innovation
	Multiplicators: Advertise the solution and spread it
 **Consumers** Use the innovation	**Consumers:** Use the solution

Remarks: Source: Schütz, Muschner, Ullrich & Schäfer (no date); translation from German to English by the authors

We used this classification to analyse, at what point of the social innovation projects which roles were "played" and by which actor this was done. The results are displayed in Figure 3.

Our first conclusion was that different roles are required during different stages of the innovation projects / process. For example, 'Agenda Setters' are required at the beginning of the innovation process whereas 'Enforcers' and 'Multiplicators' are needed towards the end of the process, when an idea / solution has already been developed.

The next result was that higher education institutions and the higher education system (marked orange) seem to be able to play quite a few of the necessary roles, some of them exclusively ('Knowledge Creators' and "Quality Ensurers'). Other roles were – at least within in our sample – exclusively played be the external partners / stakeholders (e.g., 'Developers').

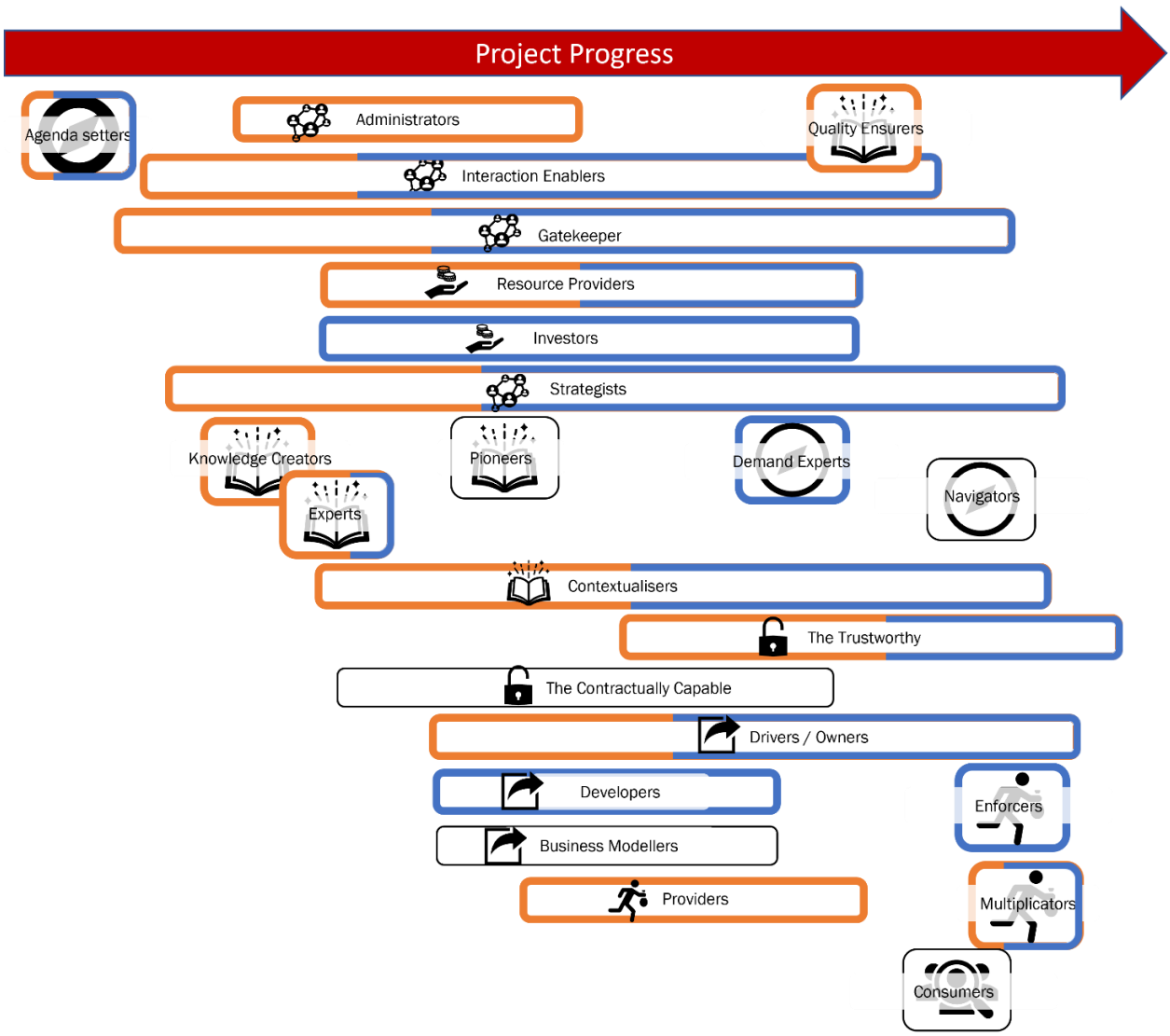

Figure 3: Roles played by HEI (orange) and external actors (blue) in the innovation ecosystem

In most cases, both sides can contribute to a role, however, the interpretation of the role might differ between actors from the higher education system and other systems. The higher education system as well as the economic system might be 'Resource Providers', but the magnitude of the resources and the conditions under and purposes for which they are provided can differ.

The results show that cooperation and co-creation between higher education institutions is needed to achieve social innovations. The early involvement of external partners from the field of economy, politics or civil society is vital for the successful implementation of social innovations. HEIs need external partners and an interdisciplinary network of stakeholders to become successful social innovators.

Thus, researchers and other personnel involved in a social innovation process need to find ways to initiate cooperation or co-creation, while the HEI itself must provide inter- and transdisciplinary meeting spaces and structures which promote dialogue and an active exchange of ideas between different stakeholders or 'role players'.

Reflections and Outlook

How can higher education institutions become part of a creative process leading to social change? We believe that the results of WISIH can provide a proper knowledge base to assess social innovations and the participation, involvement, and role of HEIs in the process and in the wider innovation ecosystem.

We could show that at least in the two surveyed disciplines nursing science and work- and organisational psychology there is a range of professors who have already participated in the process of social innovation. However, those who are willing to and capable of participating in social innovation face a lot of obstacles to commit themselves more – mainly lack of time and money or other priorities like teaching and research.

Providing adequate funding opportunities for projects dealing with social innovations and thus activating more staff and scientific disciplines that have not yet focused on social innovation has a positive effect on the commitment to social innovations. Adequate administrative procedures and structures need to be implemented, especially at universities of applied sciences who are often not well equipped in this matter.

Also, the strategies of the institutions and their funders (ministries) must be adjusted towards a greater commitment to social innovations. We believe that not only the German Federal Government, but also the European Union is committed to foster a more (social-)innovation-friendly environment through their current science and innovation policy. The *German Agency for Transfer and Innovation (DATI)*, which follows existing models such as *Innosuisse* in Switzerland and *Vinnova* in Sweden, is currently being conceptualised by the federal government and is clearly set out to include social innovations.

We hope that the set of indicators for social innovation processes / projects at HEI we developed will help to meet this objective by providing means to assess and monitor the target achievement of these strategies. It may also help individual scientists already engaged in social innovation to become more visible, honoured and rewarded.

Higher education institutions cannot bring about social innovations on their own, but they should more often become part of the co-creative process of social innovation with various partners, each playing the roles they are best suited for. As we showed, the contribution of HEIs could be significant.

Figures

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