Transferscouting an innovation

Make innovation in science a smoother, impactful and even fun-filled journey

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UIIN supports a community of higher education institutions to become the transformative drivers of change, working toward a world in which academia can effectively collaborate with key societal stakeholders to solve global challenges and create impact.

About the case



Institution
University of Cologne

Type
Public research university

Established
1388

Country
Germany

Case study domain
Entrepreneurship

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Background and objectives

Researchers are deeply engaged in thinking on the most complex, cutting-edge scientific questions and challenges, which their projects try to answer. This hardly leaves any time, energy and resources allotted for the project to be invested in transforming the research findings into innovations. The primary objective of this case study is to show-case our transferscout practice in co-developing ideas and research findings into impactful and innovative solutions particularly with the emphasis on incorporating social co-creation aspect in an innovation journey of researchers. A researchers' innovation journey within natural sciences can easily become overwhelming without the support of transfer experts. This is because transfer of research is fundamentally a social exercise wherein a 'need' of an 'user' gets identified and addressed, often iteratively.

Our experience shows that a shift to a transfer-mindset for a creative, participative and an iterative process appears to greatly enhance the innovation journey. A basic finding in science can easily take decades of careful study, perseverance and dedication to mature to a proof of concept (PoC). Our case study shows that the critical next step of validating the PoC for a real-life use-case is best planned strategically with experts from outside the research group. At this stage, transfer experts such as the transferscouts can help by carefully identifying a 'use-case' and systematically guide research findings working in a lab milieu to be functional 'prototype' in real-world setting. The transferscouts as subject matter experts are not only closer to the research but crucially act as gateway to the needs, challenges as well as the intelligence of the society. They help scientists engage with external stakeholders by bridging the language-gap between the two very different worlds of society and academia.

The primary handle in transferscouting appears to be a shift in the mindset of a research team to that of a creative and innovative solution provider by assessing the needs of the user juxtaposed with the capabilities of an interdisciplinary yet bold scientific milestone. As such, transferscouts support knowledge advancement and communication by nudging researchers in directions that are beyond the scope of the research project by identifying innovation potential of their research for an application area with best socio-economic impact.

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Support mechanisms

A key mechanism for supporting transfer has been the establishment of a central transfer structure alongside the conventional technology transfer office (TTO) via entrepreneurship professorships and transfer ambassadors in various disciplines, and transferscouts at all faculties. Transferscouts are unique enablers of bottom-up as well as top-down transfer activities. They bring expertise in the focus areas of the faculty and professional experience working outside of academia to help translate the market needs into challenges for the researchers to create a higher impact.

Selecting a particular user problem from the many possibilities for which a research finding could be validated is non-trivial. Often high-risk but high-gain strategy using a technology roadmap that stage-gates research validation for a selected use-case has been instrumental in securing third-party funds. The stage-gating process of research validation comprises strategic identification a use-case in a social, creative and iterative process, committing resources in communicating and securing knowledge and acquiring funds.

Parallelly, understanding the economic drivers, the transferscouts assist the stage-gating of technology by screening state of the art within the research field and scoping creation of intellectual property. Thus, a trusted sparring partner of the researchers at all levels in the form of a transferscout opened room for more avenues of knowledge advancement. Furthermore, transferscouts have enabled new channels of education and communication of excellent research. Courses tailored for career empowerment and entrepreneurship, workshops assisting innovation journeys of researchers, and websites and social media posts informing on, fostering and celebrating transfer were undertaken by the transferscouts.

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Celebrating high impact research findings whenever high social impact in the form of enabling a sustainable development goal or high innovation potential is known, transferscouts have issued call to action for an interdisciplinary participation to further the problem-solution fit by encouraging students, researchers and industry to join forces.

Accordingly, the key services along the `funnel of innovation support' include:

1. Incorporating awareness, education and qualification formats for transfer of knowledge and entrepreneurship.
2. Facilitating knowledge advancement by offering strategic support on IP, third-party funding as well as industry connections.
3. Providing technical, commercial and entrepreneurial expertise by creating teams with necessary competences.
4. Enabling participation of the regional ecosystem, national and european support networks as well as international partners for holistic growth of a new venture.

Central to these is a communication strategy using newsletter, website and personal emails and social media posts to keep the ecosystem and stakeholders informed and engaged. Transferscouts have extended academic rituals to include recognition of innovation via poster and idea competitions, science slams, open innovation formats and community building events via incentives such as cash-prizes, awards, consultation services and access to infrastructure for the scientists.

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Activities

Activities that have been shaped and tailored by the transferscouts can be classified according to the target groups to which they cater to.

At the level of early career researchers, which include post-graduates, PhDs as well as new principal investigators, 1:1 consultation, expressions of mutual interest take place regularly and often in an unstructured, socially triggered fashion. These are the most powerful of the activities that often seed a transfer project.

More structured activities for this target group include offering workshops, seminars or curricular modules that foster interest in transfer of research, impart creative tools for problem solving, developing innovation from a research finding and education on entrepreneurial skills.

Formats such as poster-prize for most innovative research or interactive workshops as part of retreats or summer schools that discuss the innovation potential of research findings, identify the impact case studies and help understand stakeholders etc. are triggers that help activate researchers for transfer projects.

Transferscouts have spread awareness on IP education and advised PIs on possibility of patenting prior to publishing high-impact research by assisting on writing invention disclosure, sharpening the claims of the invention using market research and creating technology roadmap using market feedback for transfer projects.

Another format that has been highly impactful in accelerating know-how transfer are organised peer-to-peer, role model or best-practice exchanges either as independent networking activities or as part of the workshops and seminars mentioned above. This often is the key step in which researchers realise the importance of social participation and inter-dependence on the ecosystem in furthering their research projects and professional growth.

Often, alternative career opportunities open up during such exchanges. Direct engagement with industry as well as industrial organisations have been of interest of the academic community and have offered co-development opportunities in the form of open innovation challenges.

For such activities, Transferscouts often function as multipliers and community builders and help further the communication of academic excellence to the industry within and beyond the scope of open innovation.

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Outcomes, impact and ecosystem

The key deliverables of the transferscout practice are:

1. Higher visibility of impact case studies within scientific research.
2. Shift to a pro-innovation, pro-transfer and entrepreneurial mindset among researchers and students.
3. A significantly higher rate of third-party funded transfer projects.
4. Establishment of a transfer community, a network of public-private partners and a strong ecosystem supporting entrepreneurship.

Examples for each of the above stated outcomes are as follows:

- Creating a new website and newsletter dedicated to news, information, detailed advice on research transfer and events and social media posts helped snowball impactful research cases on their innovation journeys. At the heart was a dedicated communication strategy followed by the transferscouts that further aided the shift of mind-set for a pro-transfer and open to innovation culture welcoming participation of the society.
- Four new courses and six different types of workshops to educate and qualify researchers on transfer and entrepreneurship were established. Transferscouts further created synergies with the state, national and european level initiatives supporting innovation by systematically scouting common interests and aligning their support with university internal mechanisms.

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- Several specific examples of such public-private partnerships and the traction generated will be presented in the talk.

The short-term impact generated for the external stakeholders was that they felt included, connected and committed to transfer when their expertise and support measures were given a platform by the transferscouts.

The long-term benefits for all stakeholders were two-fold: Firstly, the economic upside of several million euros of new third party funded projects for the faculty within the couple of years of the transferscout initiative. And secondly, the strong social pledge by all stakeholders to bolster the transfer of knowledge via innovative research-based solutions not only for the most imminent challenges of energy, climate and resources but also addressing the other megatrends of silver society, digitalisation etc. In addition to the regular reporting, quality audits by public bodies, new bodies under the rector have been recently established. These have put the attention on transfer more centrally than ever.

Furthermore, as new digital CRM systems have significantly aided the systematic collection, evaluation and evolution of work on transfer.

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Challenges and success factors

Challenges were primarily faced in the form of role definition, strategic alignment with internal and external stakeholders as well as in communication of the function and services of transferscouts.

For example, one of the central objectives of this role was to create a conducive atmosphere for culture and mindset change supportive of innovation, transfer and entrepreneurship at the faculty. Initiating such a culture change was met initially with scepticism from certain groups of researchers due the perception of transfer as means to a purely commercialisation end of public funded research.

A good strategy of communication was primarily responsible for informing and alleviating such fears. It established the function of transferscouts as part of the faculty and put knowledge advancement through all forms of transfer, commercial or not, as central creating common ground for the all groups of researchers and students.

Aligning transferscouting with the third mission of the University and creating one face to the researchers in the form of transferscouts as trusted faculty-specific, sparring partners was necessary to create traction for the different activities fostering knowledge transfer.

The initial support of the deans-office, the research administration, the management of the startup centre as well as of a core group of pro-transfer faculty members was crucial.

Two examples illustrate these points: Firstly, involving faculty members, the transferscouts created a transfer strategy that along with a clear vision identified the status-quo in the form of most urgent needs and bottle-necks for transfer of knowledge. Implementing the strategy the transferscouts helped the transition from a practice of transfer that was siloed to a more open culture of entrepreneurship, need for innovation and openness for transfer.

Secondly, establishing the relevant communication channels including the graduate schools, the central career services, the university administration and creating new dedicated transfer website and newsletter for the faculty positively impacted the creation of an atmosphere where innovation, research transfer and a mindset open for entrepreneurial activities is discussed and even cherished.



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Conclusion and future outlook

The practice case shows that investing in creating a multifaceted role at the faculty in the form of transferscouts strongly incentivises transfer of knowledge.

Transferscout activities contribute holistically to all the three core missions of the university and in particular ensure an economic upside for the faculty in the form of increased third-party funding, higher impact for excellent research and ultimately in creation of new job opportunities via spin-offs.

In the future, to sustain the innovation pipeline at the university for natural sciences, funding initiatives are envisioned where PoC research findings will be competitively funnelled using a public-private participative processes.

Such funding mechanisms have the potential to not only become fully circular and fund the next generation of innovators but also help champion the sustainable development activities of the university.



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