Abstract

We understand technologies as the result of knowledge accumulated over time and applied in varied, and sometimes new, forms. Education and practice allow scientists and researchers to understand the phenomena they observe at a fundamental level, and to devise novel methods to apply their understanding of them.

However, the knowledge that is generated in one locale frequently needs to be translated, transferred or transliterated to find meaningful application in another. In other words, in the dynamics of science and technology, the spawning grounds of theory and the hatching grounds of application are divided by an ocean of experience and time - and it is across this ocean we aim to swim. The transfer of knowledge across the metaphorical ocean of experience and time is not radically different from the reality. The end-results of the vast interplay between individuals, firms, universities and environments - be they products, processes or ideas - follow convoluted paths. It takes a concerted effort to follow and trace these paths, be it at the fine-grained level of two individuals communicating, or at the supra-national policy level. There remains uncertainty in the research that has been produced on knowledge transfer in that many questions remain regarding the operationalisation of knowledge transfer. We still do not know what knowledge is transferred, from where and to whom, how exactly the transfer and reception work, and the conditions surrounding the transfer. In addition, this line of questioning is not only of scholarly interest, but also of interest to society in terms of innovation and innovation policy, higher education and science policy. Industry has a vested interest in this, as knowledge transfer between academia and industry provides a significant portion of the inspiration and knowledge they require to produce and develop products and services.

To deduce the processes and mechanisms involved in knowledge transfer, it is necessary to define the three primary aspects of knowledge transfer. The first involves the knowledge itself – how was it generated, how has it developed and how is it primed for transfer. The second involves the ‘sender’ and ‘receiver’ of the information or knowledge – who are they and how has each contributed to the knowledge. And the third involves the environment – how have the conditions surrounding the knowledge facilitated a productive transfer. These aspects form the basis of my primary question wherein: What knowledge elements are transferred from academia to industry, how are they transferred, and what factors influence this transfer?