

THE PENUMBRA OF KNOW-HOW: AN ACADEMIC PERSPECTIVE OF TECHNOLOGY TRANSFER

Academic research propels advancement, creativity, and comprehension in a wide range of fields. It makes contributions to innovations that influence our present and future, leaving a long-lasting effect on society. Yet, there lies a gap between academic research findings and societal needs. One of the effective ways to bridge this gap is through technology transfer. The intersection of academia and industry has led to numerous breakthrough technologies globally that have significantly impacted and enriched our daily lives.

India is continuously making an effort to uplift its IP market with major initiatives such as Make in India and Start-Up India for making the country self-reliant. Academicians are also actively participating in these initiatives by fostering a culture of innovation, skills development, and collaboration between academia and industry. Despite the efforts, technology transfer in Indian academia faces several challenges that impact the successful transition of research findings into practical applications. One of the major issues is IP.

Determining ownership and managing IP rights can be complex. Academics may have individual or institutional claims to IP and negotiations with industry partners or investors become challenging in several situations. Furthermore, academics often operate on longer timelines for research, while industry demands faster results. Balancing these differing timelines and priorities pose a great challenge in technology transfer. In addition, academics may be risk-averse due to the traditional academic evaluation system, which values publications and grants.



The lack of funding for translational research or commercialization efforts create hindrance in technology transfer process. In the technology addition, it is well known that academics lack expertise in business and commercialization processes. Translating research findings into marketable products or services requires skills that are not always present in academic settings. As a result, some academic institutions may have limited connections with industry partners. Building and maintaining effective collaborations is time-consuming and thus require a shift in institutional culture.

There may be resistance within academic institutions to adopting a more entrepreneurial mindset. Traditional academic reward structures may not incentivize engagement in technology transfer activities. For monetization, assessing the commercial viability of a technology is crucial for successful transfer. However, academics lack experience in market analysis, and there can be uncertainty about whether the technology meets a real market need. Moreover, many technologies require interdisciplinary collaboration. Coordinating efforts between researchers from different disciplines within academia and aligning them with industry partners is also a challenge.

It becomes a moment of despair and demotivation when none of the breakthrough technological advancements originated from Indian academics, rather are contributions from other global universities.

Our society is still waiting to see a similar table from our prestigious universities and R&D Institutions. We are still slave to the mindset of

innovating the known and fear to challenge the norms of conventional thinking and outcomes. In order to succeed in our pursuit of excellence, Indian academics must cater to the needs of innovation in respect to

societal demands. Academicians must address the challenges in research and development frameworks and more so, accept the fact that there is huge lack of awareness about the importance of IP and technology transfer that could

foster the symbiotic relationship of academic knowledge and technical developments with far-reaching consequences.

Breakthrough Technology Transfers from Global Universities

Technology	University
Google Search Algorithm	Stanford
CRISPR-Cas9 Gene Editing	UC Berkeley/ MIT
RNA Interference	MIT (Nobel Prize)
Magnetic Resonance Imaging	University of Nottingham
Human Papillomavirus (HPV) Vaccine	University of Queensland
Blue LED	Nagoya University (Nobel Prize)
Solid-State NMR Spectroscopy	Harvard University
DNA Sequencing Technologies	MIT, Stanford and Harvard
Optical Coherence Tomography	MITU
Lithium-Ion Battery	niversity of Oxford
The World Wide Web	CERN/University of Oxford
Personal Computer	Stanford
Bluetooth Technology	Ericsson/ Lund University
Speech Recognition	Carnegie Mellon University
Liquid Crystal Displays	University of Hull
Solar Cells	Bell Labs/University of New South Wales



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