

Knowledge and Technology Transfer Defining the Profession

The idea that knowledge-based organisations produce ideas or technologies that have an effect on society is recognised by most modern industrialised countries. The funding of science and R&D is therefore often connected to professionally-led processes to encourage economic or social impact. The formal management of this process is variously referred to as Technology Transfer, Knowledge Exchange, Knowledge Transfer, Utilisation or Mobilisation of knowledge.

This process dates back at least 40 years to early definitions by the UN. Over this period professional practitioners have developed increasingly rigorous approaches and training programmes to ensure consistency and high quality amongst the staff undertaking these roles. Over the past decade the quality of these has become increasingly recognised through a global certification activity, RTTP, led by the global Alliance of Technology Transfer Professionals which brings together 18 separate national or continent-wide associations of professionals.

However, there is currently no formal definition of the Profession. Without such a definition it is increasingly challenging to certify that individuals or training courses have met the standards required, particularly when the skills required of KE/TT professionals are expanding constantly.

The fundamental difficulty is to pitch a definition at the right level to ensure inclusion of relevant professionals and yet to be precise and distinct. Take for example the healthcare sector which has separate professions for physicians and nurses. Each profession encompasses a large breadth and depth ranging from the general – physicians - to specialists like surgeons and niche specialists like cancer consultants. Knowledge exchange/technology transfer has a similar spread from people who create knowledge in partnership with users (academics, industrial scientists) to those who build partnerships and industry engagement and those who ensure that the knowledge is put to use in society. Some of these work in commercial contexts through licensing or business formation and others work with charities or social innovation or drive student enterprise. Some partner with companies to devise new products or processes and others develop new policies for governments or NGOs. The community also includes people who enable and maintain ecosystems, manage information and knowledge, and provide 'back-office' functions. Currently some of the characteristics of our profession are recognised by RTTP while some are not. Over time, these roles will change. We believe the profession should be defined by its purpose and not just by the things that the people working in it currently do.

To respond to this challenge ASTP, AUTM, KCA and PraxisAuril have proposed a definition of the profession and discussed it with ATTP. It is our ambition that further development of this should be managed through the custodianship of ATTP. Its partnership of national associations of KE/TT gives it a unique global view which will help uncover new activities in the profession and enable it to support new education programs and certification. It will also be able to take account of the varied development stages and the different focus of KE/TT across the World.

There is no requirement that any country or its KE/TT Association must represent the whole breadth of the profession proposed here. But we hope that having a definition of the profession will serve as something to relate to and possibly strive for.

The Agreed Definition of [Knowledge Exchange], [Technology Transfer], [Knowledge Transfer] (use as relevant for the country)

“A collaborative, creative endeavour that translates knowledge and research into impact in society and the economy”

This definition is made up of 3 elements:

- a) **Process** - a process/ endeavour that involves collaboration and some skill/ creativity
- b) **Change** - that facilitates output from knowledge generators
- c) **Benefits** – which lead to social benefits and impact

We wanted to allow the possibility that individual countries may want to stretch some of the descriptors while retaining that basic three part structure. So for example a country may want to add something to section b) to describe the *types* of knowledge generators eg industry and universities; another country may want to add something to section c) to describe different *types* of benefit eg impact in society, the economy AND the environment; or to add beneficiaries eg students, patients, people etc.

Roles and Activities

People working in knowledge exchange/ technology transfer foster utilization of knowledge in society and are likely to be undertaking the following kinds of roles and activities (not a comprehensive list):

Partnership Building

- Building strategic partnerships with industry, businesses, and public organizations in regional, national or international contexts
- Developing programmes of collaborative research and innovation between knowledge-based organisations and businesses
- Establishing and managing centres for cooperative research and/or innovation with a translational focus

Managing partnering services

- Running business or sector networks to encourage engagement between the knowledge base and partners
- Managing consultancy and services/ facilities which transfer knowledge and know-how
- Developing programmes of collaborative education and training between knowledge-based organisations and businesses
- Managing B2B and U2B marketing campaigns

IP exploitation

- Managing, advancing and de-risking knowledge assets such as inventions, innovations and intellectual property portfolios
- Creating commercial intellectual property strategies leading to licensing intellectual property and creating spin-outs that create products and services
- Providing legal advice or counsel on protecting inventions and innovations for example through patents, design rights, trademarks and copyright and other forms of non-formal intellectual property rights such as know-how

Knowledge economy

- Building regional or national innovation infrastructure to promote economic development
- Running incubators, science Parks and scale-up programmes
- Raising and managing funding for translation and future utilization of knowledge and research
- Raising and managing proof of concept, accelerator and venture capital funds.

Innovation leadership

- Reshaping and restructuring organizations such as companies, universities and public bodies to optimize innovation and transfer/ exchange of knowledge/ technology
- Training and developing people to become entrepreneurial and to gain skills for collaboration and transfer of knowledge and technology
- Acting as public stewards of innovation for economic and societal benefit
- Advocacy, awareness raising and lobbying in innovation, intellectual property and commercial research policy development

Competencies

People who undertake these roles are expected to be committed to the exchange of knowledge for the benefit of society; to operate with honesty and integrity; and display personal and professional credibility.

They will have a combination of the following 6 broad competencies which are recognised by the global RTTP framework

Strategic and Business Insight – strategic thinking; market-led, business acumen and commercial skills

Relevant skills/ experiences may include:

- Identifying/ sourcing opportunities/ initiatives
- Translating market knowledge into commercial opportunities
- Scenario building, assessing risks, undertaking due diligence
- Formulating the vision, setting direction and securing buy-in
- Developing the strategy and design of projects/ initiatives
- Defining the market and business strategy and/ or the marketing cycle
- Matching skills, experience, capacity and resources to opportunities

Entrepreneurial Leadership – leadership in building collaboration and partnerships and changing organizations through innovation

Relevant skills/ experiences may include:

- Creating the appropriate environment/climate for knowledge exchange
- Overcoming institutional issues or partner barriers through flexible, creative solutions
- Aligning funding opportunities with strategic aims and priorities
- Engagement in securing funding
- Identifying and securing new funding to support KE/TT projects and/ or initiatives.
- Supporting new venture formation, structures, legal frameworks, shareholder agreements and accessing investment funding
- Developing and managing community-based or charitable projects
- Nurturing new ventures/ projects until financial independence.

Legal, scientific and technical knowhow – understanding and managing the legal, contractual and domain issues required to effectively exchange and transfer knowledge

Relevant skills/ experiences may include:

- Assessing the technical and scientific attributes and commercial potential of IP.
- Developing an IP exploitation strategy to meet commercial needs.
- Applying different licensing and business models.
- Protecting, packaging and enforcing any IP needed for the project.
- Drafting, negotiating reviewing relevant IP licenses and agreements.
- Understanding and demonstrating expertise in commercial law/ finance frameworks.
- Interpreting, advising on and managing risk.
- Complying with relevant external regulations including national/ international jurisdictions relating to legislation, guidance and commercial and ethical standards.

Effective Engagement – marketing, promotion, brokering, communication, persuasion and influencing required to bring partners together

Relevant skills/ experiences may include:

- Building new networks for University/ business collaboration.
- Researching and creative planning to identify potential partners.
- Applying the marketing mix to relevant markets/ segments
- Digital Marketing and social media.
- Finding partners, investors and collaborators.
- Brokering partners and solutions
- Informing and persuading potential partners
- Leading, structuring and realising complex negotiation, reconciling different perspectives to achieve resolution e.g. conflicts with lawyers, accountants.
- Managing effective relationships with stakeholders with different cultures or backgrounds e.g. contracts, milestones, deliverables, managing disputes, resolving problems.

Governance and Project Management – managing complex projects to transfer/ exchange knowledge and ensuring effective governance and compliance

Relevant skills/ experiences may include:

- Establishing governance frameworks for multi-stakeholder projects.

- Developing, setting up and managing complex projects e.g. contracts, budgets, milestones, deliverables, decisions, handling information, and reporting on outcomes and successes.
- Compliance with relevant legal, ethical and project-related requirements.
- Developing, setting up and managing customer experience/ delivering or facilitating outcomes

Knowledge Transformation and Management – administration of systems and processes to support the effective transfer or exchange of knowledge

Relevant skills/ experiences may include:

- Knowledge capture and management,
- Knowledge value recognition & reconciliation,
- Administration of knowledge, and information flow;
- Developing, setting up and managing systems (including ICT systems) to handle knowledge from its creation or capture through to the completion of the objectives and ensuring that information flows efficiently to achieve KE/KT/TT objectives.
- Developing and managing networks and ecosystems;
- Allocation of funding for facilitating knowledge exchange