

COUNTRY REPORTS

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and Technology Transfer
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ARGENTINA

Agustín Campero

External factors that will affect the Knowledge/Technology Transfer profession over the next ten years.

- Technological developments such as artificial intelligence, biotechnology, nanotechnology, and quantum computing.
- Changes in intellectual property. Laws and regulations, protectionist policies impacting on laws and regulations. International politics impacting intellectual property regulations.
- New platforms that facilitate global and real-time commercialization of intellectual property. Professionals in this area must be prepared to work in international environments and understand the cultural and legal differences that may affect transactions.
- Fluctuations in government budgets for research and development. Funding for transfer activities.
- Climate change and sustainability: Growing awareness of climate change and sustainability is leading to increased demand for technologies and knowledge related to clean energy and environmental management.
- Regulation and ethics: Ethical and regulatory issues related to technology, such as data privacy, cyber security, and ethics in artificial intelligence.
- Demographic changes and human talent: The availability of skilled Knowledge Transfer/Technology professionals.
- Global crises and pandemics: Unpredictable events, such as pandemics, can have a significant impact on the future of the industry.

Approaches/skills needed to prepare the Knowledge/Technology Transfer professionals of tomorrow.

- Be aware of technological developments in your field and related areas. For example: artificial intelligence, biotechnology, nanotechnology, quantum computing.
- Understanding of intellectual property laws and the ability to manage patents, copyrights and other legal aspects related to technology transfer.
- Cultural differences, regulations and international trade policies of the main economic blocs and major technology developing countries.
- Ability to evaluate technology and market developments. Analyze the likelihood of technical and commercial viability of a technology and distinguish opportunities in different markets.
- Ethics and social responsibility: As new technologies emerge; it is essential to consider the ethical and social implications. Practitioners should be aware of these issues and work to promote responsible practices in technology transfer.

- Data analysis skills: The ability to analyze data and trends to make informed decisions is increasingly important in technology transfer.

BRAZIL

Shirley Coutinho

External factors that will affect the Knowledge/Technology Transfer profession over the next ten years.

New knowledge and technology based on AI and its protection represent a big challenge for managers and legislators in the near future, in particular concerning the actual Authors Right and Patent Legislation and treaties. The ChatGTP and similar technologies based on AI are posing very difficult questions related to authors rights mostly related to different fields of arts (music, paintings, literature, etc.) and there is no legislation, treaties, or best practices to offer answers to the questions that remain opened, and that must be answered in the next ten year.

Approaches/skills needed to prepare the Knowledge/Technology Transfer professionals of tomorrow.

The managers and professionals must be very well prepared to face the actual challenges and being aware of the need of a continuous learning process to be able to face the future challenges posed by the very fast process of the creation of new knowledge and technology. Ethics, creativity, open minded, a profound learning process of the knowledge accumulated by the nature in million of years for innovative tools, processes and services aiming at the sustainable development, and the courage to propose strategies and best practices for the improvement of innovation to face the demand for social innovation aiming at promoting alternatives to minimize the inequalities, and also legal measures considering the differences among people even those that live in the same region.

BRAZIL

Bety Ritter

External factors that will affect the Knowledge/Technology Transfer profession over the next ten years.

The world has been increasingly facing adverse situations, which will require faster responses in science and technology, to which knowledge and technology transfer professionals will need to be able to face in various areas of knowledge. The Covid-19 pandemic, for example, demonstrated a global vulnerability that countries would not be prepared to face, if it were not the stock of knowledge generated in scientific and technological institutions, which allowed the development of vaccines in record time.

In the global scenario, political disputes and polarization has proven to be a powerful enemy, leading to bloody wars whether in Eastern Europe or the Middle East, facts that

demonstrate the military power of nations based on high technologies, but which, on the other hand, produce an impact inhuman in the affected populations, also requiring special attention from S&T professionals in the search for solutions.

Another aspect that will increasingly deserve the attention of professionals in the S&T field refers to the environmental sustainability of our planet (sustainable production, clean energies, water, etc.), which depends on urgent measures that need to be taken now, to ensure the long-term future of humanity.

In this context, the introduction of technologies based on artificial intelligence, which is surprising every day due to the complexity and the level of autonomy it gives to its products, requires a deep reflection on the ethic limits of its application and its effects that can dramatically affect the human life.

All of this requires an enlargement of knowledge, not only for researchers, but also for knowledge/technology transfer professionals, who will be required to deal with the complexity of these topics within the scope of the institutions in which they work.

Approaches/skills needed to prepare the Knowledge/Technology Transfer professionals of tomorrow.

In this complex and dynamic scenario in which we are inserted, technology transfer professionals will be required, in addition to the creativity and technical training inherent to the exercise of their functions, to have more comprehensive knowledge in other areas of S&T, directly involved in the development of new technologies. Artificial intelligence, machine learning, in addition to constant advances in biotechnology, are some examples of areas that will certainly continue to develop at an unprecedented pace, producing impacts on the way of protecting and transferring knowledge, with implications for the legal way in which knowledge is protected, covering not only patent and software protection, but also copyright.

One of the main challenges to be faced concerns stimulating the development of social technologies, which allow us to envision a path to reducing inequalities and expanding the inclusion of minorities in the benefits produced by S&T.

Therefore, a proactive stance and an open mind for continuous learning, in addition to staying permanently updated on advances in the scientific and technological world, are fundamental requirements so that professionals can face the challenges that lie ahead.

BRAZIL

Ana Torkomian

External factors that will affect the Knowledge/Technology Transfer profession over the next ten years.

I believe that the biggest challenge over the next ten years will be dealing with Artificial Intelligence. This will probably require changes in intellectual property legislation and may have an impact on both patent drafting and transfer efforts, which will require training for professionals working with knowledge/ technology transfer (KTT). In addition, the world is

going through a time of wars, when joint efforts to achieve the Sustainable Development Goals were expected. These external factors are also likely to influence research at universities, the interests of companies and government actions, impacting on the activities of KTT professionals.

Approaches/skills needed to prepare the Knowledge/Technology Transfer professionals of tomorrow.

On the one hand, it will be necessary to know Artificial Intelligence tools, such as GPT Chat, for example, in order to use them to one's advantage. On the other hand, Artificial Intelligence as an object of transfer will also have to be understood in the light of legislation that must mature, since the legislation currently in force does not cover all the issues related to AI, at least not in all the countries taking part in this meeting. Soft skills will continue to be important for KTT professionals, as will a holistic vision capable of understanding the political, social and environmental issues surrounding the world.

CANADA

Anouk Fortin

External factors that will affect the Knowledge/Technology Transfer profession over the next ten years.

Rapid advancements in technologies like AI. The rapid evolution and adoption of AI is and will continue to greatly impact the technology transfer field. Some of the known risks and challenges associated with AI includes matters related to inventorship and ownership of intellectual property, data privacy and security, biases, and lack of transparency as well as the need for the legal, ethical, and regulatory frameworks to evolve and catch up with the state of the technology. AI can also positively impact the tech transfer field by accelerating innovation (automation, predictive analytics etc.) and powering tools and resources supporting many of our activities (contract drafting, technology/IP valuation and management; prior art, freedom to operate and market analysis etc.). However, to make the most of and mitigate some of the risks associated with AI, institutions should invest in developing AI governance frameworks and robust cybersecurity, ensure sufficient resources allocation, and find/train a knowledgeable workforce.

Government policies and regulations: Changes in intellectual property laws, data protection regulations, and policies related to research funding can significantly influence the strategies and processes involved in knowledge and technology transfer. For example, Canada has recently developed national security guidelines for research partnerships and requires that a risk assessment be conducted on research partners to access federal grant funding. This has impacted universities and led to changes in who they are partnering with and the sources of research funding they are pursuing. Provincial governments in Canada have implemented various initiatives related to innovation to foster entrepreneurship, economic growth, competitiveness, and technological advancements within their respective regions. These initiatives can include funding programs, supporting partnerships between academic and industry and the creation of IP agencies that support

and provide education and resources related to IP protection and commercialization. All these initiatives are subject to changes based on political context and priorities.

Cultural and societal changes: Shifts in values, a growing emphasis on ethical considerations and environment sustainability, a commitment to equity and diversity and focus on indigenization have and will continue to have a transformative impact on tech transfer processes and strategies. Institutions must adapt their strategies to align with changing values, sustainability goals, equity considerations and Indigenous rights. Successful technology transfer in this evolving landscape requires a holistic approach that embraces ethical, environmental, and social responsibility. Changes in societal values will influence consumer preferences, the type of technologies prioritized for transfer, how such transfers are affected, and the terms and conditions associated with such transfers.

Workforce and talent dynamics: Demographic shifts, skills shortages, and changing workforce expectations (such as remote work) could impact the availability and quality of professionals engaged in knowledge and technology transfer. Technology transfer requires a skilled and adaptable workforce. The demand for such a workforce can be very competitive, not only between technology transfer organizations but with the market at large. Organizations must offer competitive compensation and attractive work conditions to attract and retain skilled professionals – but academic, public, and non-profit institutions may have little flexibility in what they can offer, making attracting and retaining workforce difficult. Combined with an aging workforce, this also leads to challenges in succession planning.

Approaches/skills needed to prepare the Knowledge/Technology Transfer professionals of tomorrow.

The skills demanded of Knowledge/Technology Transfer (KTT) professionals are undergoing a profound transformation in response to the ever-evolving landscape of innovation, research, and industry. To not only stay relevant but to excel in their roles, both current and future KTT professionals should proactively acquire and develop a diverse set of emerging skills.

First and foremost, digital and AI literacy are becoming indispensable as technology continues to advance at an astonishing pace. Understanding the intricacies of digital tools, artificial intelligence, and data analytics is essential for harnessing the full potential of innovative technologies. Additionally, as cybersecurity threats loom large in the digital age, KTT professionals must also gain expertise in safeguarding intellectual property and sensitive data.

Moreover, the growing emphasis on sustainability, environmental, equity, diversity and inclusion awareness are reshaping the priorities of KTT professionals. They should be equipped with knowledge and skills to assess the environmental impact of technologies and promote sustainable and equitable practices throughout the innovation transfer process.

Cultural and ethical competency is increasingly vital in a globalized world where collaboration crosses borders and cultures. Professionals should be culturally sensitive and ethically aware to navigate diverse perspectives and ensure equitable knowledge exchange.

Proficiency in innovation ecosystem mapping and collaboration is crucial as innovation often thrives within complex networks of organizations, startups, and research institutions. KTT professionals should be adept at identifying these networks and fostering collaborations that drive innovation.

Assessing the societal impact of technology is another emerging skill that will be in high demand. Professionals should be able to evaluate how technology affects communities, economies, and individuals to ensure responsible and ethical knowledge transfer.

Lastly, economic development and policy fluency are critical skills for advocating for supportive policies that facilitate knowledge and technology transfer. Professionals should be able to engage with policymakers and influence the regulatory environment to foster innovation and economic growth.

Preparing the K/TT professionals for the challenges and opportunities of the future requires a proactive approach that integrates education, training, and practical experience. Courses, workshops, tutorials, webinars focused on these emerging skills within and outside of the context of technology transfer should continue to be developed and offered. We strongly believe in and support peer-to-peer learning. Professional associations, networking events and conferences, peer-support groups and exchange platforms, mentorship and exchange programs all boost engagement and performance, while providing exposure to different perspectives and experiences. Participation in initiatives, collaborative projects and programs that involve cross-functional teams, are interdisciplinary, have international or cross-cultural components or involve different actors in the innovation ecosystem (government, industry, incubators, accelerators, VC etc.) should also be encouraged, to gain exposure to different perspectives, develop networks and the ability to engage with diverse stakeholders.

CROATIA

Vlatka Petrović

External factors that will affect the Knowledge/Technology Transfer profession over the next ten years.

Locally, the technology transfer profession is still in the very early stages, unfortunately exacerbated by the high turnover of technology professionals leading in some cases to the loss of institutional memory of previous initiatives. A significant local factor will be the development of national policy and connected financial instruments, especially if financing for such professional positions is successfully linked to a national PRO/HEI program financing. Such an approach would introduce technology transfer-oriented indicators in the mainstream PRO/HEI negotiations with national government stakeholders, which has not been the case before.

The profession will also be affected by the global geopolitical factors affecting both innovation and trade, including fragmentation and the rising crises. In addition, there is a growing trend for topic/mission-oriented policies leading to more directional research & innovation and commercialization – especially in areas linked to green transition and the need for greater sustainability and resilience in most complex societal systems.

Approaches/skills needed to prepare the Knowledge/Technology Transfer professionals of tomorrow.

The technology transfer profession in countries with low numbers of professionals has previously lent itself to the balance of generalist and specialist approaches, with varying

success. There will be an increased need in the future for the PRO/HEI-based professionals to profile themselves in relation to type of the external client/stakeholder served while also broadening the range of skills to address situational needs, going into the direction of an account manager approach. This would entail an even stronger combination of strong soft skills and client orientation, coupled with project management skills needed to bring in specialist expertise (which may not be internal to TTO or the organisation, nor, in the long term, human). Both in interactions with the researchers and external stakeholders, various aspects of relationship management will become even more important as technology transfer professionals will need to address both increased interaction complexity and demands on the attention and time of all involved individuals.

EUROPEAN COMMISSION

Giancarlo Caratti

External factors that will affect the Knowledge/Technology Transfer profession over the next ten years.

We are noticing that that in the 2020's, after several decades of general world stability, 'history is on the move again'. This started with the Covid outbreak in 2020, then the Russian invasion of Ukraine, the abrupt expansion of China, and more lately with the rebellions in most sub-Saharan African countries increasing migratory pressure, not to mention the increased extreme weather events such as floods, hurricanes, melting glaciers and forest fires, signalling unprecedented rapid changes in our climate. Europe's external strategy is faltering since it was strongly leaning on exports of goods to China, energy import from Russia and securing military defence from the USA. We Europeans, we must start rethinking our future from scratch. This of course also impacts on technology transfer which must become faster, more flexible, and thematically focused on critical aspects at the country, continental or global scale, in order to accelerate technological development and find the solutions.

Approaches/skills needed to prepare the Knowledge/Technology Transfer professionals of tomorrow.

The increasing tech development speed is, of course, impacting tech transfer skills. While in the previous century, it was common thinking that tech transfer would happen by itself, by simply moving around people and competences, today most governments and research organizations have understood the need to have 'skilled intermediaries' operating between the lab and the market, to reconcile the magic world of science with the harsh world of business. When I told the chairperson of a large organization having thousands of researchers that I was taking the position of head of tech transfer, the comment was 'we call them half engineers. Apart from a few cases, such as Thomas Alvar Edison, a researcher is not a manager and wishes to remain so in her/his career. We need T-shaped profiles where a scientist knows a bit about business and a businessman knows a bit about science. The speed of change and the increased number of patent submissions, particularly in the digital world, is putting increased pressure on the IPR framework. It is therefore important to establish the profession of 'tech transfer' with globally acknowledged criteria to evaluate candidates and labels which are recognized by all major associations worldwide and are periodically reviewed.

HONG KONG

Alwin Wong

External factors that will affect the Knowledge/Technology Transfer profession over the next ten years.

Opportunities

- Governments giving more emphasis and therefore resources to improving the national innovation systems to fuel economic growth and their social-economic impact, such development would require add dimensions and skillsets for the tech transfer professionals.
- Stakeholders in the triple helix system have been placing more attention to the values of intellectual properties as assets, enabling tools to business strategies, with a stronger demand for technology management [and transfer] professionals to help realized their value potential through their strategic deployment.
- The Grand Challenges, some manifested through ESG, posted increased opportunities for tech transfer activities to thrive in related verticals.

Threats

- Sanctions arising from geopolitics, regional human conflicts would reduce flow of technologies across nations of conflicting interests and ideology at the international level.
- Industrial espionage, IP theft and even technological sabotage have become more prominent as different national camps confront each other.
- Populism and controversial immigration policies would hamper the otherwise more fluid flow of technologies and innovations across border in search for new markets.
- The world could very well see polarization in technology and innovation capacity build up in different countries like the dichotomy seen in Gini indices from developed and emerging economies.

Approaches/skills needed to prepare the Knowledge/Technology Transfer professionals of tomorrow.

The tech transfer landscape has certainly expanded in the past years and will continue to do given the technological innovations around the world. The linear value-added processing of tech transfer has become multi-dimensional, requiring different kind of talents, skill sets and expertise. Its practice could be analogous to the healthcare industry, in which education needs and opportunities span across vocational, professional, and managerial level in closely linked but very specialized verticals.

Formal education systems would only cater for individuals' baseline training in foundation skill sets, through academic curricula, whereas the ecosystem and the industry could

offer post-academic learning through on-the-job training, professional certification, and venues for life-long learning through conferences and specialized training. All of such require resources in time and money. To enable a career learning continuum of tech transfer practitioners, the sector should evidence measurable outputs with demonstrated values for government and industries, respectively through metrics, impacts and financial returns.

Compared to the complex demands of talents and experience of tech transfer practitioners to address the increasingly sophisticated space, there are only still limited structural learning and professional recognition such as CLP and RTTP from peer organizations.

Gap analysis of the talent requirements for innovation systems against the current manpower output from education is the first step to spot 'hot spots' for skills and expertise in demand. Peer organization can advocate for specialization in formal academic education programs for the tech transfer labour market. For continuous learning beyond academic curriculum, topical training and work attachment remain the two most accessible modes, but cost effectiveness and local relevance should be carefully evaluated by providers across the world.

INDIA

Vijay Vijayaraghavan

External factors that will affect the Knowledge/Technology Transfer profession over the next ten years.

- The emergence of early-stage enterprises with significant capacity in high-throughput research and IP creation will result in active value creation for academic IP with these early-stage enterprises' rapid translation of such IP.
- The emergence of new Economies in Asia, South America and the Mediterranean region will create new hubs of technology generation and acceleration of IP assets for regional and global deployment.
- The practical life of IP assets will shrink with rapid innovations in some segments, such as life sciences, digital technologies, and communications, shrinking the useful deployment span of the assets.
- Public and private enterprises will co-create innovation, with public research focusing on developing platform technologies and private enterprises, translating them to products and solutions.
- Increasing trade restrictions will bring an embargo for IP assets to be deployed in some regions, limiting the potential for global deployment of path-breaking IP assets.
- Technology transfer professionals will have a far wider role in enterprise-level engagement rather than triggering licensing opportunities. Deeper engagement in technology translation and market-end value realization will drive the future of engagement.

Approaches/skills needed to prepare the Knowledge/Technology Transfer professionals of tomorrow.

- Knowledge of Global trade dynamics as IP will be transnational within complex intra-regional trade conflicts and networks.
- Combining skills of nurturing enterprises incubated in the academic ecosystem and creating value in them to realise best value for academic innovations that are transferred to these enterprises.
- Ability to build a global network of enterprises that can support impact creation far wider than limited regional deployment of such innovations.
- Pooling innovations vesting with multiple global organisations to address globally impacting problems and ability to design technology delivery models with wide reaching impact.
- Harnessing skills in complex dispute resolutions in global trade conflicts and corporate race for market leadership.
- Ability to communicate the impact of innovation to ensure continued investments in innovation generation.

ITALY

Alessandra Baccigotti

External factors that will affect the Knowledge/Technology Transfer profession over the next ten years.

At the EU level, in the past couple of years the European Commission has been strengthening its policy for knowledge valorization, which is being implemented through new “Guiding principles for knowledge valorization” and codes of practices, such as the Code of practice on the management of intellectual assets for knowledge valorization. This is affecting and will affect the KT profession for several reasons.

On one hand, it is positive to see that KT intermediaries are acknowledged as relevant channels for knowledge valorization and in several documents, it is proposed to promote capacity building for KT intermediaries, such as KTOs and KT professionals – this could create a more favorable environment for our profession and give us more visibility and relevance in the innovation ecosystem and internally (in our institutions). On the other hand, EU policies state quite clearly that we need to go beyond a “traditional” technology transfer approach, based on patents/licensing etc., towards a broader concept of intellectual asset management, where assets are not only IPRs, but also other “forms” of knowledge generated from research activities. This poses some challenges because KT professionals have by now learnt how to deal with IPRs whereas knowledge that is not codified in an IP title is more difficult to manage. By the way, the proposed approach means that we should also better learn how to create value from results generated by non-technological research, in particular Social Sciences, Arts and Humanities.

At the national (Italian) level, over the years the research assessment system has changed the way so-called third mission activities are assessed. In particular, the methodology has

changed, passing from quantitative metrics to assessment of case studies (as in the UK REF). Also, technology transfer activities (IP valorization and entrepreneurship) are now just two of many other areas that will be evaluated, ranging from public engagement, lifelong learning, cultural heritage, open science etc. In other words, knowledge and technology transfer seems to be more and more “diluted” in the wider landscape of third mission/social impact activities acknowledged by the national government.

From the organizational perspective it is not clear whether KTOs should continue to deal with IP commercialization and more functions/services will be added to deal with social impact-related activities or if our offices should change a bit their strategy and become more concerned with societal impact than generating revenues from research commercialization.

Finally, there is a lot of talk about Open Science and Open Innovation but there is also a lot of confusion of what they exactly are and how to deal with IPRs in such contexts.

In my view, KT professionals of tomorrow should get prepared to “defend” their profession in a context that has changed and seems to put more value in societal rather than economic value.

JAMACIA

Loreen Walker

External factors that will affect the Knowledge/Technology Transfer profession over the next ten years.

I think that the big external factor which will affect the profession over the next 10 years (and beyond) is technology. New technology will affect not only how the profession is practiced but also the types of inventions which will be created and the new knowledge which will be developed. This will create a lot of uncertainty not only in the profession but also in the world. Those countries which do not have a good knowledge/technology base will be further left behind. The profession may, for example, be called upon to help to bridge the knowledge/technology gap through education not just for its members but for officials in countries with poor knowledge/technology base.

With the advent of generative AI, the practice of the profession will definitely change as AI will be able to carry out some of the functions of professionals, for example, evaluating invention disclosures, drafting patent claims, contracts and other documents and creating models. On the other hand, professionals will have access to a lot more information to help them to do their jobs, for example, finding collaborators.

New knowledge/technology will be created resulting in new inventions. Professionals will need to be constantly learning to be able to keep up.

Approaches/skills needed to prepare the Knowledge/Technology Transfer professionals of tomorrow.

These professionals must be more technology savvy. They must learn to interact with computers and computer programs in a similar way as they do with people. They must also be prepared to undertake ongoing learning as the pace of new knowledge/technology creation intensifies. All of this will not be comfortable in the beginning.

MEXICO

Guillermo Roura

External factors that will affect the Knowledge/Technology Transfer profession over the next ten years.

The most important external factors that will affect knowledge / technology transfer profession in the next ten years comprise the influence of new technologies, social movements, and strategic areas according to the world changes due to health, financial and climate shifts. Personally, I consider the more important factors are the following.

- Artificial Intelligence, machine learning and alike.
- Digitalization of services.
- Knowledge on subjects different from technology transfer: sustainability, social innovation, health regulations, entrepreneurship.
- Cost of certification.
- The own strategic areas that each country establishes.
- Lack of funds or government support for innovation activities, both in public and private sectors.
- Crossroads between technological and social innovation.
- The impact of current social and humanistic issues: gender equity, gender equality, sustainability, climate change.
- International financial changes and/or movements.

It is of the most importance that knowledge / technology transfer professionals pay attention to these factors that will impact not only our professional activity but also the future skills that we will need to better perform our work. In this sense, the approaches needed to prepare the knowledge/technology transfer professionals of tomorrow are the following.

Approaches/skills needed to prepare the Knowledge/Technology Transfer professionals of tomorrow.

There are some relevant skills needed to all professionals, such as management and negotiation skills as well as knowledge about social and humanistic aspects that should influence in a wider way our activities. And two more approaches that will positively impact our activities. On one hand, be more prepared to engage in local and international calls for financing R+D+i activities which are directly related to the knowledge and tech transfer activities. On the other hand, it is of the most important to collaborate between TTO's and networks for both training and joint projects.

- Certification.
- Locally or internationally.

- Project management frameworks
- Negotiation skills.
- Knowledge about social and humanistic aspects such as: gender equity, gender equality, sustainability, climate change (knowledge about social innovation).
- Search, preparation, and participation in local and international calls for entrepreneurship and R+D+i financing, local and international.
- Collaboration between networks, both public and private; or collaboration with other TTO's and technology transfer professionals.

NETHERLANDS – ASTP

Art Bos (Board of ASTP comments)

External factors that will affect the Knowledge/Technology Transfer profession over the next ten years.

- Role of KTOs moving from reactive responding to requests from research to a more proactive role to help facilitate and shape opportunities based on the expertise of the research centers.
- Expansion of responsibility of KTO from focus on handling research staff and institutional relationships to embrace wider roles for students and other local entrepreneurs.
- Increasing awareness at political level of the importance of role of KT in current economic and societal and political challenges.
 - Democratization of KT with Definition of KT embracing wide range of roles
 - Relocation of KT into a wider context of acknowledging much wider range of actors including civil society, other stakeholders with a possible effect of these replacing traditional effective utilization and commercial impact via traditional KT activities instead of adding to the range of KT activities.
- SDGs becoming embedded in academic/national cultures, thus SDGs and aim for solutions in sustainability start to drive goals of KTOs.
- KPIs and metrics and indicators are increasingly being requested.
 - Yet still no common view on what/how/why to measure the impact of research/ KT outputs (and associated measurement of KTO impact)
 - Different demands from KPIs depend upon whether the information is being sought internally (to enhance operational monitoring) or externally (assessment by funders/hierarchy).
- Increased external focus on the need for professional recognition and career development.

- Geo-politics start to impact on KTO- e.g., restrictions on access to sharing certain knowledge /dual use concerns/export controls etc.
- "Inhibition of globalization"- trends to localization of focus for partnering/societal/economic impact.
- Recognition that combining SSHA and STEM strengths need to become standard approaches in research as well as KT activities.
- Balancing achieving continued impact by maintaining ability to handle formal IPR issues as well as operating in an environment of Open Innovation and Open Science.
- Potential changes in approaches with/from industry, as many of these factors also impact Industry- leading to changes to the established relationships between academia and industry.
- Role of AI (perhaps also including the topic that newcomers feel enabled to enter the KT space with access to such tools, and yet are not nearly as able to deliver KT activities, as established KT professionals).

Approaches/skills needed to prepare the Knowledge/Technology Transfer professionals of tomorrow.

- Increased focus on the need to understand what soft skills are needed- and offered as training. We can use the list generated in current [KT Soft Skills](#) project KT SoftSkills (see also attached document 1).
- Professional skills also need to be enhanced: need to think about what added functions (e.g., transdisciplinary projects) or ways of doing business (multi-stakeholder relationships)?
- What technical skills are likely to be needed? AI/technology...
- Storytelling/sharing successes need to be promoted skills.
- Consideration can also be given to the document entitled "Definition of Knowledge Transfer" as one of the outputs of a previous global summit, subsequently endorsed by ATTP and available as a reference point for skills development. [Defining KE-TT Profession 2020.pdf \(astp4kt.eu\)](#)
- Outputs from the YUFE project looking at Career Development of KT professionals pulls together a project deliverable by 10 institutions, looking at enhancing the next generation of RTTP recognition. [Who we are | YUFE | Young Universities for the Future of Europe](#)
- Recognition and career pathways for those involved as professionals in Research & Innovation management is also a key topic being addressed across Europe. For example, the European Commission under ERA (European Research Area) Action 17 has identified a need to enhance the innovation landscape by addressing the challenges of how to further career development in R&I so has funded two current projects - [RM ROADMAP Project Home](#) and [CARDEA | University College Cork \(ucc.ie\)](#)

- Potential consideration of the role of ISO56002:2019 on Innovation Management as a driver at institutional level, which may need to be considered when reviewing skills of KT professionals (e.g. recognized with RTTP). [ISO 56002:2019 - Innovation management — Innovation management system — Guidance](#)

NEW ZEALAND

James Hutchinson

External factors that will affect the Knowledge/Technology Transfer profession over the next ten years.

- The rising influence of Artificial Intelligence tools to do everything from determining the best term sheet for an opportunity to fast-tracking the ideation of commercialization pathways to formulating new commercialization opportunities from scratch.
- The orientation of innovation ecosystems towards solving big global challenges in a way that crowds in both public and private investment for the betterment of humanity.
- The increasing focus on impact shifting TTO business models towards maximizing societal benefit and away from institutional revenue models, and that better align with investor expectations.
- Rising researcher entrepreneurship and understanding of commercialization as an impact pathway, resulting in more willing participants in the tech transfer process.
- The increasing prominence of indigenous knowledge systems and guardianship over indigenous knowledge on the ways in which tech transfer and commercialization is progressed, particularly IP frameworks and relationships with indigenous stakeholders.
- The growing role of start-up/venturing ecosystems in emerging nations (and those with low corporate absorptive R&D capacity) as a mechanism for economic development and growth.

Approaches/skills needed to prepare the Knowledge/Technology Transfer professionals of tomorrow.

- Understanding and embracing of new Artificial Intelligence tools to fast-track and scale the work typically undertaken within the profession.
- More sophisticated approaches to deep-tech venturing, beyond the typical spin-out/start-up models, orientated towards solving global challenges
- Understanding an embracing principle of indigenous knowledge and guardian as it applies to tech transfer, commercialisation, and IP frameworks.
- At a higher level – more visible and structured career and professional development pathways to enable new and existing professionals to enter, flow through and exit the profession – to ensure we have a free-flowing and vibrant pool of talent.

PUERTO RICO

David Gulley

External factors that will affect the Knowledge/Technology Transfer profession over the next ten years.

New national policies that create funding mechanisms to reinvigorate regional ecosystems transitioning from traditional industries to research and technology industries that incorporate themes of “clean, green, sustainable, and advanced life sciences”.

Approaches/skills needed to prepare the Knowledge/Technology Transfer professionals of tomorrow.

Knowledge/experience in

- regional economic development strategies based upon science and technology.
- translational research approaches to promote commercialization.
- managing multiple collaborations/partnerships across the “value chain” from discovery to market

SLOVENIA

Urša Jerše

External factors that will affect the Knowledge/Technology Transfer profession over the next ten years.

One of the most significant factors that will shape the future of Knowledge/Technology Transfer (KT) is climate change. Climate change affects us globally, and the challenges we face require joint efforts. This means strong collaboration between private and public sectors, academia, industry, and citizens, not just locally but globally. More than ever, we will need smart and green solutions coming from academia to be transferred into society. The role and impact of KTOs will become more visible and valued.

We will need to implement human-centered solutions that demand a holistic and interdisciplinary approach. Technology solutions will need to be supported by social sciences, humanities, and arts, which automatically brings more participation and engagement of various actors and stakeholders such as citizens, communities, NGOs, and social entrepreneurs. This will affect KT in a way that KT projects involve more stakeholders from different backgrounds and nationalities and many different scientific fields involved. It will be challenging to manage the interpersonal relationships among the stakeholders.

The management of IPR will get more challenging and complex as well. One reason is the multidisciplinary nature of the projects. Another reason is the rise of open science and open innovation. They will challenge the traditional models of knowledge and technology transfer that rely on intellectual property rights, patents, and licenses. This may change the

role and impact of KTT professionals from being intermediaries or brokers to being enablers or catalysts of open science and open innovation ecosystems. The paradigm might shift from money generation-driven projects to impact generation-driven projects. This may affect the way KTOs are financed and which skills knowledge transfer officer's need.

Global crises and uncertainties are important factors that can negatively affect Knowledge Transfer and Technology Transfer Offices (KTOs). This is especially true for KTOs that are not yet well-established, as their added value has not yet been fully recognized by academic society. As a result, they may receive less funding for research and development (R&D) or have less presence of venture capital. To overcome these challenges, KTOs will need to be more flexible, resourceful, and adaptable to global challenges.

Approaches/skills needed to prepare the Knowledge/Technology Transfer professionals of tomorrow.

In terms of preparing the Knowledge/Technology Transfer professionals of tomorrow, digitalization and artificial intelligence are two key areas that require new skills and mindsets. There are already many tools, platforms, and channels available that can enhance and speed up the KTT process. However, using these tools is not rocket science. Managing people relationships will remain the core challenge and power of the KTOs. Soft skills such as teamwork, problem-solving, communication, proactivity, resilience, conscientiousness, creativity, curiosity, and trustworthiness will still be the skills of tomorrow.

As innovation and entrepreneurship become more important for addressing global challenges and creating value for society, we need to find new ways to foster a culture of innovation and entrepreneurship within our institutions and ecosystems. We need to encourage and support researchers to engage in KTT activities such as patenting, licensing, spin-off creation, consulting, or collaboration. We will need to provide them with adequate incentives, resources, training, mentoring, and recognition which at least in our region (Central and Eastern Europe) has not been done sufficiently. As we demand more skills from KTOs, we should also find ways to incentivize KTO officers to work in the KTOs and be result-driven.

And most importantly, we should always be open and willing to learn from others. Sharing our experiences and best practices with our peers from other institutions and countries can help us adopt new ideas or methods that can improve our work. We should never stop learning and improving ourselves as professionals.

SOUTH AFRICA

Andrew Bailey

External factors that will affect the Knowledge/Technology Transfer profession over the next ten years.

AI will, and already is impacting the profession over the next ten years. I feel that it will bring a mix of things:

- Advances in terms of (rate) technology development and capabilities (e.g., developing software code, intelligent design of molecules, advanced data analysis for a wide range of applications from healthcare through to finance, markets, etc.).
- K/TT professionals will need to embrace and harness it in terms of tools that will assist market analysis, patentability assessment, claim drafting, market research and lead generation, developing technology fliers / getting a sense of very technical research papers.
- We will need to also deal with issues relating to AI inventorship, ownership of IP created by AI, copyright (ownership, infringement of existing copyright materials used for training) and ethics / liability considerations in bringing AI-enabled technologies to market (e.g., who is liable should a self-driving car kill a pedestrian). Legislation is likely to develop rapidly around this and one is already seeing developments; extending the legislation across the globe, achieving a level of uniformity in terms of approach will be challenges that many may be involved in, but also where we will need to keep up with our own knowledge of the changing legislation, clauses in contracts, etc.
- Within the Southern African Development Community (SADC) region the next decade will see increased attention and funding associated with research, research offices and the establishment of an increasing number of technology transfer offices. It is interesting that similar to South Africa (2010) Malawi (~2020) passed legislation requiring public HEIs to have TTO offices and in 2021-2022 the Science & Technology Fund was launched to finance research, science, technology and innovation. Botswana is also progressing towards a National Research Fund.
- The hope is that the network of emerging TTOs within the region will grow and strengthen significantly in the next ten years. Considerable foundation for this has been laid through an exchange and capacity building project initiated by WIPO in collaboration with the Japan Patent Office and SARIMA.
- Several significant funders, such as the Bill & Melinda Gates Foundation, are building the capacity of universities in Africa to administer large grants and to position themselves as capable recipients of funding. Translation is the natural extension of these efforts and hopefully similar projects will focus on developing K/TT skills.
- In South Africa we will see the outcome of the first University Technology Fund, which will start existing from investments. A first in Africa, the fund is a very early-stage VC fund that partners with universities to jointly invest in spin-off companies. Hopefully the fund will have demonstrated that university technologies are an investable asset class within the country. The decade will also see the establishment of a second UTF fund, with an increased number of universities participating.
- SHAPE innovation will become more mainstream. Institutions will better understand what to support, how to support initiatives and develop KT/TT skills in the space as well as define their impact objectives.
- I feel that there will be a changing basket and introduction of new metrics to gauge and demonstrate impact at technology, departmental, institutional, and regional levels, possibly aided by AI!

Approaches/skills needed to prepare the Knowledge/Technology Transfer professionals of tomorrow.

Professionals in the space already need to master a range of inter-disciplinary skills to be successful and this is only going to increase in complexity. A number of (older) people in the South African TT space have worked in industry, especially in new product development. The industry paradigm or 'eye' is very important, and I often wonder if this experience is problematically lacking in new entrants to the profession who come into a TTO immediately after graduation?

But, even for professionals with industry experience, understanding the "route to market" in a particular sector is key. This is essential so that the TT professional can guide inventors and fresh entrepreneurs through the requirements of different technology readiness levels, develop appropriate funding proposals, etc. to make products market ready. At UCT we developed two guides that are as much for researchers/entrepreneurs as they are for TT staff detailing considerations in taking either a pharmaceutical product, or a medical device to market. I would hope that more, similar guides can be developed by the K/TT community for other products and sectors, along with intensive training courses. Most practitioners will encounter a new technology type/sector that you are not familiar with, and one needs a mechanism to rapidly upskill.

Industry sabbaticals (ideally into business development, or new product development departments) could also be a very useful upskilling process. Another approach that SARIMA has used effectively is to fund Expert-in-Residence programmes. A couple of universities used the programme to appoint an industry consultant with medical device regulatory expertise to work with the TTO and researchers for a few months. The portfolio of medical device IP was reviewed to get a perspective for each device on trials that would be necessary, its class, etc. and to estimate the likely costs of bringing the products to market. The TTO would gain experience across all devices in the portfolio and inventors gain insight into how to take devices they have developed into the market / become aware of the challenges. Webinars can be presented to the broader community, that use the institution's technologies as exemplars of different routes to market.

The Expert-in-Residence could, however, also be a skilled K/TT professional who could work with a very inexperienced and new office in their environment for a month or two, to assist them with researcher engagement, interaction with senior management to win their support, practical techniques to assess new inventions / technologies in a hands-on, guided fashion.

Exchanges to well-established TTOs are also useful. The WIPO-JPO-SARIMA On the Job training programme has worked very well, bringing 12 candidates from SADC countries to be hosted in pairs at an established TTO in South Africa. Pairs were selected from different institutions in the same country so that over the 8-week period they would hopefully bond and could together stimulate a network and practice and sharing of learnings in their home country. This creates a "skilled" hub in the country, that also has a network to the host institution expertise, etc. for ongoing advice and guidance. The pair can also discuss the adaptation of learning into their institutional and home country contexts together.

Another area where development is needed is around the creation of investible opportunities for early-stage VC. Creating a pipeline of attractive and sufficiently mature

technologies takes knowledge and experience to ensure that they are sufficiently de-risked, and the business cases articulated. To build this one could look at (a series of?) workshops where a K/TT professional would receive feedback and assessment on one of their own opportunities, as well as provided with detailed case studies, examples of pitches and applications that have been successful. One often does not get insight into the full application and deal structure negotiated. There may be TTOs that would be willing to share the information with others.

SPAIN

Helena Montiel

External factors that will affect the Knowledge/Technology Transfer profession over the next ten years.

There are several elements that RedTransfer considers relevant in an analysis of human resources in knowledge transfer professionals of the future. They are the following:

- **New and more specialized professional profiles:** In recent years, different elements have been incorporated in the K/T Transfer process. This will mean that there will be more and more specialized profiles in the process. The generalist profile of knowledge transfer technician is going to give way to increasingly specialized profiles. In addition to the profiles of large sectors such as IPR, entrepreneurship and project management, expert profiles will appear in open science, data management and management of ethical issues related to the transfer of knowledge.
- **Professional Career:** The professional career will be an external factor that will condition the development of professionals. As they do not have a defined profession, professionals dedicated to the K/T Transfer must be recognized. Otherwise, they cannot be retained or recognized. This progression should be closely linked to the remuneration of professionals. It should incorporate both the aspects of progression related to the assumption of more and bigger responsibilities (vertical career) and the recognition of experience, efficiency, and effectiveness (horizontal career).
- **Remuneration and different ways of working:** Remuneration is a basic issue in any work activity and is influenced not only by production or productivity, but also by the institutional context in which it is carried out. Universities, hospitals, research centers and companies must be competitive when it comes to salaries. On the other hand, the different ways of working that emerged in the pandemic will cause professionals to adapt to new ways of working. Classic offices with employees working there every day will give way to remote forms of connection.
- **New tools:** The existence of large databases or the emergence of artificial intelligence will undoubtedly affect the K/T transfer process. This will mean that K/T transfer professionals will have to adapt their jobs and skills to manage these tools and get the most out of them.

Approaches/skills needed to prepare the Knowledge/Technology Transfer professionals of tomorrow.

As in any professional activity, Knowledge Transfer requires knowledge and skills. RedTransfer understands that there is no university training specifically appropriate to work in Knowledge Transfer, although for some specialized profiles certain training could be appropriate. Doctoral training provides an understanding of research processes that helps the Knowledge Transfer function carried out by academic entities.

It is also key to understand the Innovation System in which Knowledge Transfer occurs, with its legislation, institutions, agents, and relationship mechanisms. All these subjects can be taught in structured courses, in person or remotely and can help facilitate mobility between the different Knowledge Transfer profiles. Likewise, transversal knowledge such as the use of computer tools and databases, or quality management can be incorporated.

Innovation is a competitiveness factor that is much more complex and less studied than others. A lot of knowledge is generated around experience and, therefore, having addressed cases in the Knowledge Transfer activity and exchanging practices are very relevant sources for acquiring knowledge. RedTransfer suggests that Knowledge Transfer CVs incorporate these cases and experiences, and these should also be valued in the selection processes.

Various roles are involved in Knowledge Transfer, so interpersonal relationships and attitudes are essential for succeeding. Active listening, oral or written communication, negotiation, meeting management, building trust, team building. All of these are social skills that contribute enormously to the effectiveness of Knowledge Transfer

Finally, the professional relationship between equals should be a mechanism for exchange and access to new knowledge. Events, forums, social networks should be key in the development of professionals' skills.

THAILAND

Chalermpol Tuchinda and Orakanoke Phanraksa

External factors that will affect the Knowledge/Technology Transfer profession over the next ten years.

Considering the policies, economic conditions, and social environment, below are some key external factors that will affect the knowledge/technology transfer profession over the next ten years.

- Global technological advancement: To keep up with emerging technologies and adopt them in a timely manner, technology transfer professions in particular from low-middle income countries would find these technology trends a big challenge.
- Government policies and incentives: With respect to geopolitics and international trade and investment, policies may be adjusted according to the geopolitical changes, direction, and different focus of international trade/investment.
- Economic stability: A favorable business environment, stable economic growth,

and investment-friendly policies will attract more resources and expertise for the technology transfer arena.

- Professional skill development: The availability of a skilled workforce with expertise in emerging technologies is crucial for successful technology transfer. Retaining technology transfer personnel is another challenge for many universities and public research institutes.

Approaches/skills needed to prepare the Knowledge/Technology Transfer professionals of tomorrow.

Aligning with the responses in question 1, Artificial Intelligence (AI) is playing a critical role and will impact many careers including the technology transfer profession in the future. Although AI may not be able to replace every profession like those with sensitivity that require human's sense/touch, there are many specific skills that human needs to adapt. While technology transfer professions in low-middle countries are busy catching up with traditional training, it is important that they are aware of the fact that certain skills may be replaced by AI. As a result, there could be other approaches and skill set that need to be addressed at this Summit. Other skill set may be varied ranged from ensuring the accuracy of patent search by AI, to IP Management and Commercialization affected by AI.

TURKEY

Ahu Altinkut Uncuoglu

External factors that will affect the Knowledge/Technology Transfer profession over the next ten years.

- Policies and regulations: Changes in policies and regulations related to IP, data protection, and multi-stakeholder collaborations can affect the knowledge/technology transfer profession.
- Economic fluctuations and changes: can significantly affect the knowledge/technology transfer profession. Economic downturns may reduce funding for R&D and innovation, slowing down knowledge transfer activities. In contrast to this, economic growth and globalization can create new opportunities for knowledge exchange between countries and organizations.
- Technological transformation and advancements: Technologies prioritized due to rapid technological transformation and pandemic effect is critical. Professionals in this field need to continually update their skills and adapt to new technologies to effectively manage the transfer of knowledge in a changing technological landscape.
- Education – online learning and training platforms: Changes in these domains may influence the skill sets required for professionals in this field. Continuous education and professional development will be crucial to stay updated with the latest approaches in knowledge/technology transfer.
- Demographic- social and environmental factors: The aging workforce and retirement of professionals can impact the knowledge transfer profession. An increasingly diverse and

multicultural workforce may create new challenges and opportunities for cross-cultural knowledge transfer. Changing societal and environmental concerns can influence the knowledge/technology transfer profession.

Approaches/skills needed to prepare the Knowledge/Technology Transfer professionals of tomorrow.

- Collaboration skills: Collaboration and networking skills are also important for building partnerships and fostering knowledge exchange.
- Project management (Waterfall-Hybrid-Agile): Knowledge/Technology Transfer professionals often work on multiple projects simultaneously, requiring excellent organizational and time-management skills.
- Technical expertise: Knowledge/Technology Transfer professionals should have a strong background in the relevant field to understand and effectively transfer complex knowledge and technologies.
- Recognition for market trends and commercialization: Understanding the value and potential applications of technology is crucial for Knowledge/Technology Transfer professionals. This involves recognizing market trends, identifying commercialization opportunities, and assessing the feasibility and viability of transferring knowledge or technology.
- IP portfolio management: Being knowledgeable about IP laws and regulations, including patents, trademarks, copyrights, and trade secrets. They should be able to navigate the complexities of IP protection, licensing, and commercialization.
- Legal & and ethical considerations and cultural adaptability: Professionals need to be aware of legal and ethical frameworks. They should adapt their approaches to different cultural contexts and work effectively in diverse teams.
- Entrepreneurial mindset and staying updated: It involves being proactive, embracing uncertainty, and thinking creatively to facilitate successful knowledge transfer and commercialization. Professionals should be committed to continuous learning, engage in professional development opportunities, and stay updated with the latest trends and advancements.

TURKEY

Fazilet Vardar

External factors that will affect the Knowledge/Technology Transfer profession over the next ten years.

In the next decade, strategies, processes, and impact of Knowledge/Technology Transfer will be deeply affected by several external factors:

- New models for collaborative ecosystems such as open innovation, open-source initiatives, Public-Private Partnerships as well as changing policies and funding

initiatives will reshape organisations and professionals will need to facilitate and manage these partnerships effectively to maximize impact.

- Developed economies will face further new threats such as procurement issues, aging populations while, emerging economies and markets will offer new opportunities together with unique challenges, and these will need to be reconciled and managed skilfully to create win-win impacts in KE/TT operations.
- Globalization and International collaborations will emphasize differing needs forcing professionals to navigate diverse cultures, legal frameworks, international regulations, and business practices to facilitate effective transfer across borders.
- Changing preferences and expectations of end-users, market dynamics as well as socio-economic and environmental demands and trends within various industries will define the needs of the KE/TT key players.
- Understanding how new and disruptive technologies can be applied, transferred, and commercialized effectively will be imperative for their successful integration.
- Demographic changes, wars and immigration will emphasize the importance of cultural and ethical considerations and inclusivity.

Approaches/skills needed to prepare the Knowledge/Technology Transfer professionals of tomorrow.

Preparing Knowledge/Technology Transfer professionals for the challenges and opportunities of tomorrow will require a combination of traditional and emerging skills:

- Developing excellent written and verbal communication skills, including digital literacy such as proficiency in data analysis, collaboration tools, and knowledge management systems in order to convey complex technical information to non-experts; negotiating skills to navigate complex agreements, resolve conflicts, and secure favourable terms for all parties involved.
- Skills for networking and building strong relationships to establish strong wide-spread contacts in academia, industry, government, and other relevant sectors to leverage collective expertise and resources in order to identify opportunities and facilitate successful transfers.
- An interdisciplinary knowledge covering a broad understanding of various disciplines, including science, technology, business, law, and ethics, coupled with a knowledge in intellectual property laws, data privacy regulations, and other legal and regulatory aspects enabling professionals to bridge gaps between different sectors and facilitate effective transfers.
- Skills in project management to efficiently plan, execute, and monitor transfer projects coordinating resource allocation and timeline management and ensuring ethical operations successful transfer.
- Expertise in identifying and assessing risks associated with transfer activities and developing mitigation strategies, crisis management and contingency plans and to

navigate unexpected challenges like legal disputes or public relations issues and to foster resilience planning skills.

- Adopting a user-centric focus prioritizing the needs and experiences of end-users to ensure successful adoption and implementation.
- Developing an entrepreneurial mindset to explore opportunities, such as technology commercialization or spin-off ventures, to maximize the impact of KE/TT efforts.
- Acquiring cross-cultural competences to bridge cultural differences and foster effective relationships have a global perspective and be aware of international business practices and norms.
- Being adaptable and open to change and taking a proactive approach to self-development and commitment to lifelong learning and staying up-to-date with the latest trends, emerging technologies, industry developments and regulatory changes

UNITED KINGDOM

Anji Miller

External factors that will affect the Knowledge/Technology Transfer profession over the next ten years.

- Greater recognition of TT/KT activity (third mission) alongside other institutional activity (Research and education)
- New technologies and the system and the needs they will dictate e.g., AI
- Globalisation of technologies and means of working
- Increased awareness of innovation to political, economic, and societal strategies
- Increased professionalization of the sector and roles
- Desired consensus on TT/KT metrics and performance
- Greater public private partnership activity

Approaches/skills needed to prepare the Knowledge/Technology Transfer professionals of tomorrow.

The TT/KT sector is changing and has changed substantially over the last decade, and this has been both in response to functional needs as this third mission integrates into the educational entities and widespread best practice. The changes are more visible in certain geographical locations, but they are undeniably present. Consequently, the new TT/KT professional has a broader knowledge of the sector practice and needs to seamlessly integrate and align with institutional functions and partners feeding into development path of any given innovation. Alongside the fundamental TT skills recognized by the sector, the additional skills used and needed by the competent modern TT/KT professional includes:

- A good understanding of funding and early-stage investment
- Coordination and management of cross sector partners (project and program management) – this is skill widely used by EU funding models and Gates supported projects, but relatively new to other geographical regions
- Higher level of awareness and use of soft skills
- Wider knowledge of cultural and regional differences
- The delivery of TT best practice with a complete DEI lens

There is a need for current training to reflect some of the above and take into account the changes that newer technologies, (i.e., AI, Advanced therapies and cross discipline technologies) and previously less well understood innovation such as the humanities and arts, and exploitation of know-how (consultancy), demands for commercialization.

UNITED STATES

Ian McClure

External factors that will affect the Knowledge/Technology Transfer profession over the next ten years.

The following external factors will be the most influential on the Knowledge/Technology Transfer profession over the next ten years:

- The evolution of AI as a tool for both student experience/teaching and research. This is coming hard and fast – K/TT will need to adapt quickly, as well as data security and IP law and policies.
- The convergence of national security, innovation policy, and university R&D. We are seeing this convergence as national security conversations are more prominently including innovation as a national security pillar, and universities are being looked to as major engines of global innovation competitiveness. Here, local and national governments are asking more of their universities in terms of research that is “use-inspired”, “industry driven”, and economically impactful.
- Government funding of TT, in the U.S. and globally. Because of the above convergence external factor, government funding of TT will become paramount and will quickly resource the TT practice, but also put it closer to government control and oversight, which can be good and bad.

Approaches/skills needed to prepare the Knowledge/Technology Transfer professionals of tomorrow.

The top skills needed to prepare for Knowledge/TT, which are not currently taught prevalently in curriculum agendas for degree granting institutions, include:

- Training/Coaching skills: More and more emphasis is being placed on training/

coaching teams through entrepreneurship accelerators and similar translational research cohort-based programs.

- Project Management: the PMP certification is not prevalent enough in the K/TT profession but will become increasingly important as K/TT is asked to do more things like build industry consortia, pursue multi-party grants from government funding, and lead coalitions around regional IP management plans. Every K/TT office should seek or have a PM within the office in the next 3-5 years.
- Sales: Rather than marketing, sales is a professional skill that can be taught and certified, and needs to be a heightened skill sought by offices.
- Intellectual property understanding, including the law, policy, and economic theory related to IP strategies.