Profile and career development path of Knowledge Transfer Managers

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Table of Contents

Introduction

This report lays out a modern competence profile designed to help Knowledge Transfer (KT) professionals operate effectively in an open innovation context characterised by the multiplication of Quadruple Helix interactions. In such an environment, supporting knowledge transfer means moving beyond the technology-push model of unidirectional transfer of knowledge from academia to society. To this end, KT professionals must embrace the broader concept of "valorisation" which is defined as "*using knowledge from innovative research for the benefit of the economy and society in order to create (social) impact*". Thus, an important question for KT professionals is "*What are the needs of companies, citizens and other stakeholders, and how can our insights contribute towards making solutions available*?".

The overarching aim of YUFERING WP3 is to develop and implement a flipped knowledge transfer model across the YUFE alliance. This objective stems from the initial assessment that generally speaking, KT professionals need to develop **a more outside-in or demand-driven approach** to gain insights into the needs of other stakeholders from the Quadruple Helix, in order to pave the way for effective valorisation. Another way to describe this demand-driven model of knowledge transfer is the so-called "**Flipped approach**" (De Cleyn et al., 2014; De Cleyn & Gielen, 2016).

As part of YUFERING WP3, a first concept note[1] already defined **the seven core dimensions** of **Flipped Knowledge Transfer**: demand-driven (outside-in), solution-oriented, involvement of societal & business actors[2] (SBAs) during the co-creation process, bi-directionality of the transfer process, multi-, inter- and transdisciplinary, focus on value creation and impact, involvement of both tech and non-tech innovation (e.g. social innovation).

demand-driven (outside-in)

solution-oriented

involvement of societal & business actors (SBAs) during the co-creation process

bi-directionality of the transfer process

multi-, inter- and transdisciplinarity

focus on value creation and impact

involvement of both tech and non-tech innovation (e.g. social innovation)
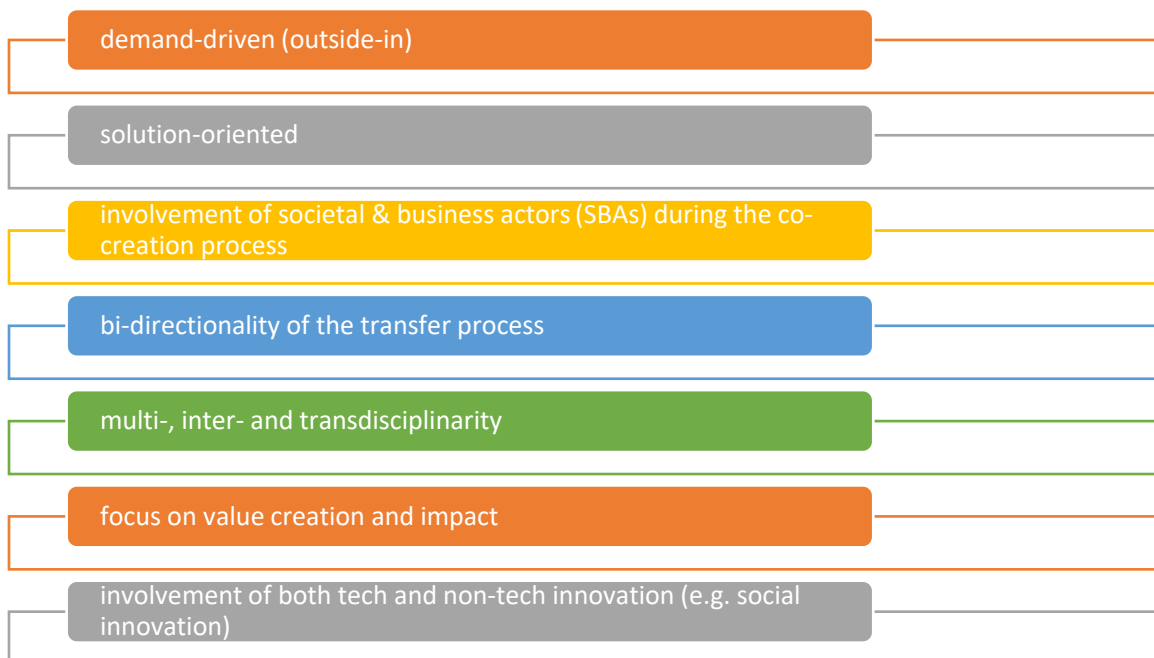
Figure 1: seven core dimensions of Flipped Knowledge Transfer

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[1] YUFERING WP3, Concept note on Flipped Knowledge Transfer, approved 7th July 2021.
[2] Societal and business actors refer to stakeholders such governments, companies, cities, citizens, investors, etc.

As indicated in the YUFERING project proposal, the purpose of Task 3.5 is to develop a **common interdisciplinary profile and career development path for knowledge transfer professionals (Deliverable 3.3)**. This modern job profile aims to provide a comprehensive picture of the skill set required for knowledge transfer professionals to be able to interact and engage effectively with SBAs.

The role of knowledge transfer professionals in university knowledge transfer performance is the subject of extensive literature, which points out to the **diversity of skills needed to effectively manage knowledge transfer interactions**. Whilst **technical skills** such as knowledge of intellectual property law or technology-specific domain knowledge and expertise remain crucial resources, softer skills such as communication, networking, negotiation and commercial awareness are also fundamental to the proper functioning of a knowledge transfer office (KTO) (Lockett & Wright, 2005). Such **soft skills** also refer to one's ability to manage stress, mediate disputes, deal with difficult people, prioritisation skills or organisation and management skills (Szoka, 2006). As boundary spanners operating under the conditions of market and technological uncertainties, KTOs must therefore **leverage a wide array of competencies**, which means that **attracting and retaining qualified personnel is both crucial and challenging** (Markman et al., 2005). In light of such challenges, implementing adequate support structures and incentives for intermediary human resources may thus contribute positively towards higher university knowledge transfer performance (Gerbin & Drnovsek, 2016). The discussion of the competencies required for optimal knowledge transfer performance should therefore also consider the occupational conditions under which knowledge transfer professionals operate, as well as their career prospects.

To develop this **common interdisciplinary profile of knowledge transfer professionals and career pathway**, input was collected across a variety of YUFERING WP3 activities, including:
- 5th and 6th meeting of the YUFE Knowledge Transfer Expert Network, which took place on 22nd April 2022 (online) and 10th May 2022 (University of Cyprus) respectively. In total, 28 representatives of YUFE universities participated in these meetings, including 18 members of the YUFE Knowledge Transfer Experts Network);
- Surveys of YUFE Knowledge Transfer Experts conducted in September 2021 (10 valid responses) and April 2022 (13 valid responses);
- The mapping of knowledge transfer practices across the YUFE alliance, which was conducted as part of YUFERING task 3.1;
- The interviews of knowledge transfer professionals from YUFE partner universities, which were conducted between March 2022 and February 2023 as part of the gap analysis in YUFERING task 3.2.

The target group of this concept note includes mainly knowledge transfer professionals and ecosystem managers. The Competence Framework for Researchers developed as part of YUFERING WP4[3] provides a comprehensive overview of the competencies required from researchers to engage in knowledge transfer.

The first section of this concept note lays out the new competence profile for knowledge transfer professionals, which constitutes an **add-on to the existing competence framework for Registered Technology Transfer Professionals**. The second section provides an analytical overview of the challenges to full-fledged knowledge transfer career pathways, and presents options for improving the long-term attractiveness of knowledge transfer as a career pathway

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[3] See YUFERING Task 4.2 *Enabling talent to grow – the YUFE Competence Profile for Researchers*, Grant agreement, p. 21

Competence profile of knowledge transfer managers

From the perspective of the flipped or demand-driven knowledge transfer model, **the purpose-driven KTO's journey to impact relies on a complex blend of competencies to successfully manage Quadruple Helix interactions across the ecosystem**. Such a skill set is designed to empower knowledge transfer professionals to put a greater emphasis on demand-driven activities and co-creation methodologies, with the aim to support the development of new products, services and processes meeting the needs of citizens, policy-makers, companies, etc. These comprehensive skill sets are, however, rarely found in single individuals, but rather **shared and built collectively within larger teams of knowledge transfer professionals in which both traditional knowledge transfer skills and more outward-looking entrepreneurial skills are found**.

To **account for the complementarity of traditional and new outward-looking skills, the competence profile developed in YUFERING WP3 builds upon the existing and recognised work of the ASTP[4] and ATTP[5]**, and more specifically on the existing competence profile for **Registered Technology Transfer Professionals (RTTP)[6]**. RTTP corresponds to the international standard for knowledge transfer and commercialisation professionals working at universities, in industry or in government labs. It recognises demonstrated competence and experience across **six competence groups**:

- Strategy & Business Insight;
- Entrepreneurial Leadership;
- Legal and Technical Knowhow;
- Effective Engagement;
- Governance and Project Management;
- Knowledge Transformation and Management.
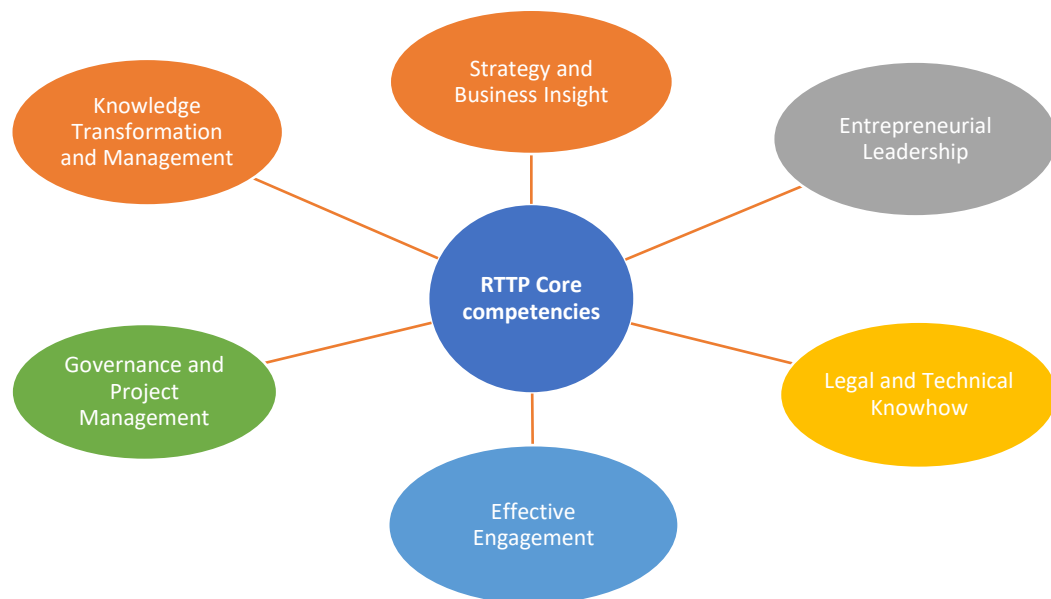
Figure 2: six core competence groups of RTTP

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[4] Association of European Science and Technology Transfer Professionals
[5] ATTP is the alliance of different organisations active in the field of Technology Transfer like e.g. ASTP or Praxis Aurealis. The ATTP's mission is to promote and maintain global standards in knowledge and technology transfer. ATTP does this via the Registered Technology Transfer Professional (RTTP) designation, the international professional standard for KT practitioners working in universities, industry and government labs.
[6] For more information regarding the RTTP core competencies, please consult: https://attp.global/application-process/introduction-to-rttp/

Thus, by **putting forward YUFE add-on competencies focused on demand-driven knowledge transfer**, our ambition is to develop a proposal for a harmonised skill set for facilitating and stimulating flipped knowledge transfer in order to enhance R&I impact.

As mentioned in the introduction, the new YUFE competence profile of flipped knowledge transfer professionals draws upon data collected as part of a variety of YUFERING activities. The survey conducted by UNIRI in all ten YUFE partner institutions in September 2021 to support the development of the KT expert network already provides valuable information regarding the ideal skill set of KT professionals. The responses (13 responses) suggest that, **when it comes to flipped knowledge transfer specifically, business competencies supporting engagement with external stakeholders are the most sought-after**[7]. Respondents ranked the RTTP core competencies in the following order of importance:

1. Entrepreneurial Leadership;
2. Strategic & Business Insight;
3. Effective Engagement;
4. Knowledge Transformation and Management;
5. Governance and Project Management;
6. Legal and Technical Know-how.

Based on a preliminary analysis of YUFERING material, **some add-on competencies were identified as relevant for the knowledge transfer team and ecosystem management**, as opposed to relevant specifically for individual professionals. The YUFE competence profile thus presents the add-on competencies according to the above importance ranking. These competencies belong to the "Governance and Project Management" category, and are thus presented in the separate sub-section dedicated to team and ecosystem management competencies.

For each **RTTP competence category**, a table is created. Each table first provides an overview of the existing core RTTP competencies for each group. The tables then list the different add-on competencies identified as part of YUFERING WP3 activities, and provide descriptions for each. In the last column, each table provides a list of "critical situations" (i.e. real-life professional context events, meaning situations which Flipped knowledge transfer professionals are often confronted with and for which certain (add-on) competencies are necessary or need to be developed).

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[7] In the future, it may be interesting to ask this question to a broader pool of practitioners beyond the YUFE alliance.

A. Add-on competencies for flipped knowledge transfer professionals

The identified add-on competencies are best understood as competencies required from knowledge transfer professionals to effectively manage and support flipped knowledge transfer interactions. The existing RTTP competencies constitute a common set of core skills for all knowledge transfer activities, and thus already partially cover the competencies required for managing flipped knowledge transfer. Nonetheless, some essential competencies need to be highlighted and further defined. In the following tables, we thus seek to further elaborate upon these competencies **(YUFE add-ons)** which **are considered as crucial for the flipped approach**.

In the second column of the table, we provide a short description of a frequently occurring **(critical) situation** in which these competencies are considered as crucial.

1. Core competence group: Entrepreneurial Leadership

RTTP Core Competencies	Critical situation	YUFE add-on competencies	Examples
Active engagement in securing funding; Leading negotiations; Developing new ventures • Aligning funding opportunities with strategic aims and priorities • Identifying and securing new funding to support KE projects and/ or initiatives. • Leading, structuring and realising complex negotiation, reconciling different perspectives to achieve resolution e.g. conflicts with lawyers, accountants • Overcoming institutional issues or partner barriers through flexible, creative solution finding • Supporting new business 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	*There is often unexploited potential for Quadruple Helix collaborations, accompanied by a lack of budget and knowledge of relevant channels to support collaboration.* *Convincing researchers to work on a demand-driven project is not always easy, even when a topic is relevant to their expertise. There can be a mismatch between external stakeholders and academics in terms of topics of interests and immediate priorities.*	**Knowledge on how to promote collaboration through relevant funding schemes for demand-driven knowledge transfer** • Actively engaging and increasing awareness of funding opportunities for demand-driven knowledge transfer available at local, national or EU level • Leading or supporting researchers and SBAs in the process of elaborating and submitting joint funding applications	- *Searching for external funding (bilateral contacts, but also scouting for relevant calls)* - *Staying current on R&I policy developments relevant to demand-driven knowledge transfer* - *Attending webinars organised by funding authorities about new funding opportunities* - *Educating researchers on the long-term financial benefits of collaboration with SBAs as a potential source of future income supporting the activities of their research group* - *Communicating effectively with researchers about the relevance of engaging with SBAs to achieve societal impact* - *Engaging with and convincing external partners to develop joint proposals with the aim to attract external funding making collaboration a reality*
		Navigating uncertainty effectively • Being able to extend one's comfort zone beyond familiar processes and valorisation instruments	- *Willingness to support applications through new channels engaging for instance with new types of SBAs* - *Seeking support from colleagues having experience with specific funding channels* - *Sharing best practices with other Knowledge Transfer experts*

2. Core competence group: Strategy & Business Insight

RTTP Core Competencies	Critical situation	YUFE add-on competence:	Example
Strategic thinking; Market-led, entrepreneurial approach; **Business and commercial skills** • Identifying/ sourcing opportunities/ initiatives • Translating market knowledge into commercial opportunities • 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	*Knowledge transfer professionals often find themselves having to deal with divergent needs and expectations of SBAs and academia.*	**Customer-oriented** • Being attentive to the needs of customers, and proactively going outside of the university to investigate and to understand these needs and the context in which customers operate	- *Being familiar with tools for stakeholder mapping, customer journey, etc.* - *Attending networking events* - *Visiting companies/ stakeholders* - *Collaborating with intermediary organisations like Chambers of Commerce, sector federations, etc.* - *Searching for common grounds between the partners (win-win)* - *Building long-term relationships based on trust with relevant partners/stakeholders in the ecosystem*
		Making effective connections between stakeholders and across disciplines • Thinking outside the box in order to connect different stakeholders from the Quadruple Helix, also across disciplines to promote multi-, inter- and transdisciplinary collaboration. • **Specialisation of FKT experts by fields of knowledge and/or technology** according to defined strategic priorities is a key element for the efficient engagement of SBAs and academia. Such specialisation allows SBAs and FKT experts to be "on the same page" when the engagement process starts and during the co-creation process (during which FKT experts may also be involved)	- *Creating mixed teams with Knowledge Transfer experts having different backgrounds to stimulate the multi-, inter- and transdisciplinary approach and to better understand the different angles* - *Processing new information to identify potential matches* - *Defining strategic priorities based on foreseen market needs/trends scouting, in relation to the strengths of the university and its partners in the ecosystem* - *Designing and implementing internal processes for collaborating with **Flipped KT experts external to the university** (usually called "Knowledge & Technology Integrators"), in order to improve efficiency of FKT processes and achieve a multiplier effect*

3. Core competence group: Effective engagement

RTTP Core Competencies	Critical situation	YUFE add-on competence	Examples
Communication; collaboration and influencing skills • Building new networks for University/ business collaboration • Researching and creatively planning to identify potential partners • Applying the marketing mix to relevant markets/ segments • Finding partners, investors and collaborators • Informing and persuading potential partners • Managing effective relationships with stakeholders with different cultures or backgrounds e.g. contracts, milestones, deliverables, managing disputes, resolving problems	***Effective engagement means laying the foundations of lasting relationships beyond ad-hoc cooperation***	**Building quality relationships and networks** • Having an ability to build trust and develop quality working relationship with both SBAs and academics	- *Managing positive direct interactions with SBAs and academics*
		Storytelling • Appealing to customers through coherent and effective storytelling increasing the visibility and raising awareness of successful knowledge transfer activities (push and pull)	- *Developing an active social media presence* - *Showcasing collaboration success stories on university website, social media and at relevant events, including those organised by external stakeholders (awards, prizes, etc.)*
		Team work • Working effectively as part of a diverse team of knowledge transfer professionals	- *Knowing when and who to ask for support for the benefit of securing successful valorisation trajectories (including external experts if useful)* - *Developing teamwork and communication skills*
		Navigating organisational constraints of different environments • Being able to navigate the respective organisational specificities of university and SBAs	- *Managing the demands of SBAs in light of feasibility constraints*
		Orientation towards specific actions	- *Prioritising concrete and specific actions leading to effective project delivery*

4. Core competence group: Knowledge Transformation and Management

RTTP Core Competencies	Critical situation	YUFE add-on competence	Example
Administration of systems and processes; supporting the effective transfer or exchange of knowledge	*Once a flipped knowledge advisor has a growing portfolio of Quadruple helix projects, the challenge of a good monitoring system and management of projects arises.* *To increase the likelihood of future collaborations, contacts between SBAs and academia must be stimulated.*	**Knowledge of strategic intelligence tools**	- *Using strategic intelligence and business insight tools to understand market needs and increase foresight capacity* - *Management and monitoring instruments/tools to effectively follow-up on deliverables and contractual agreements/ customer relations*
		Creating opportunities for interaction • Creating frequent opportunities for academics and SBAs to meet and network	- *Proactively organising university-SBAs speed-dating, spin-off and start-up community events, etc.*

5. Core competence group: Legal and technical knowhow

RTTP Core Competencies	Critical situation	YUFE add-on competence	Examples
Understanding the key legal, technical and domain-related issues required to effectively transfer knowledge • Assessing the 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 licences and agreements • Understanding and demonstrating expertise in commercial law and finance frameworks • Interpreting, advising on and managing risk • Complying with relevant external terms and regulations including national/ international legislation and jurisdictions.	*When collaborating with companies or other external partners, in searching for a 'win-win', legal barriers or diverging expectations regarding IP arise and create bottlenecks*	**Basic technical expertise** • There is a need to have basic knowledge related to IPR, different potential business-models and the most common situations and their legal implications (legal templates)	- *Collaborating with IP experts and legal advisors within the team* - *Learning from colleagues through sharing of best practices (for instance via networks of KT professionals[8])* - *Seeking opportunities for life-long learning*
	Co-creation refers to the involvement of both academia and SBAs throughout the process of knowledge creation and transfer to future customers. However, the use of co-creation processes raises new challenges and issues, related for instance to IP or more practical aspects (ex: how to sustain mid to long-term collaboration in structurally different organisations?)	**Knowledge of co-creation methodologies** • Having knowledge of co-creation methodologies to facilitate cooperation between academics and SBAs, and being able to implement them throughout a variety of projects	- *Examples: we may refer here to the pilot use-cases conducted as part of the YUFERING project (WP3), Biocatcher and INROBICS FKT pilot use cases*

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[8] At YUFE-level, the YUFE Knowledge Transfer Expert network constitutes a supportive (Flipped) KT community within which KT professionals from new and experienced KTOs alike can share experiences and best practices.

B. Add-on competencies for team and ecosystem management supporting the flipped approach

The identified add-on competencies linked to governance and project management are best understood as competencies required to effectively manage ecosystems and teams of KT professionals with a view to supporting the flipped approach.

1. Core competence group: Governance and Project Management

RTTP Core Competencies	Critical situation	YUFE add-on competence	Example
Managing projects, knowledge and information flow; developing and managing systems and processes for knowledge exchange • 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 • Developing, setting up and managing customer experience/ delivering or facilitating outputs • Developing, setting up and managing systems (including ICT systems) to handle knowledge from its creation or capture until the completion of the objectives, and ensuring that information flows efficiently to achieve KE/TT objectives.	*One person cannot have all the required competencies, which means that various types of profiles must be combined. KTO management needs to recruit complementary profiles.* *Regarding the career path, the most valuable profiles eventually quit their positions, moving to spin-offs or industry. The job development path should be interesting enough to keep senior staff (salary is part of the equation), otherwise expertise may be lost. On the other hand, former KT professionals who made a career switch to industry or spin-off can also be good connections/ambassadors.*	**Managing complementarities between knowledge transfer team members** • Identifying and coordinating complementarities between knowledge transfer professionals with specialised roles to create a well-functioning team of professionals with diverse yet complementary skills	- *Pairing business developers or liaison officers with strong connections to local ecosystems with more traditional knowledge transfer profiles to effectively manage FKT types of collaborations*
		Promoting the attractiveness of knowledge transfer as a career path • Developing strategies to enhance the visibility and attractiveness of valorisation activities to attract the right skills profiles to the profession	- *Updating university website and/or developing brochures to showcase the university offer in terms of careers* - *Embracing the purpose-driven narrative of flipped knowledge transfer: communicating about the societal role of knowledge transfer in bridging the gap between SBAs and academia*
		Managing staff turnover effectively	- *Making the most of staff turnover as an opportunity to make new connections and gain access to new networks, while attracting new people with new ideas* - *Preserving the knowledge of former staff in-house through regular staff meeting and high-quality knowledge database (+ monitoring database and dashboard)*
		Promoting university offer in terms of tools and infrastructure towards SBAs	- *Effectively promoting the university offer in terms of infrastructure, tools and data towards SBAs (e.g. availability of service labs for industry)*

		Identifying strategic valorisation domains and promoting specialisation[9]	- *Identifying connections between the academic offer and ecosystem specificities* - *Allocating resources in relation to ecosystem strengths with a view to maximise knowledge transfer outputs* - *Driving policy change towards domain specialisation at university* - *When possible promoting specialisation of KT experts by discipline or technology to support efficient engagement during the co-creation process*

[9] As pointed out by several representatives of YUFE partner universities, whilst domain specialisation allows for the efficient allocation of knowledge transfer resources, its implementation already requires a critical mass of human resources dedicated to knowledge transfer. Domain specialisation may thus not always be possible in smaller knowledge transfer teams, but it is mentioned because the Flipped demand driven approach with co-creation is very time-consuming. Making strategic priorities and focusing on some key-focus area's to apply the flipped approach, can be an answer. In YUFE 2.0, the YUFE flipped knowledge transfer community aims to act as a platform for sharing FKT opportunities and for supporting YUFE partners with selected valorisation cases in order to stimulate flipped knowledge transfer.

A modern career pathway for knowledge transfer professionals

A key takeaway from the various activities carried out under YUFERING WP3 is that there is no 'one-size-fits-all' approach to career pathways in knowledge transfer, due to both institutional specificities of the different YUFE partners, but also to the nature of the profession itself. In a nutshell, knowledge transfer as a line of work is doubly disadvantaged by the specificity and width of the required skill set, and by unfavourable terms of employment and wage compared to other sectors (e.g.: industry), which altogether make recruitment and retention of staff a challenging endeavour. Such challenges may however be mitigated by maximising complementarities within knowledge transfer teams and offering opportunities for skills development. In addition, efforts must be sustained to improve the attractiveness of knowledge valorisation as a career path.

During the gap analysis interview conducted under YUFERING WP3, several respondents reported that it is not possible for one individual to possess all the required skills for effective management of flipped knowledge transfer processes. This means that the required skill set is usually covered by a mixed team of KT professionals with diverse backgrounds, however critical mass remains a contingent issue. For smaller institutions, it is not always possible to put together a multi-skilled team in the initial phase of KTO development. It also appears that the sustainable growth of a KTO is highly contingent upon support from university upper management. This means that university management needs to embrace valorisation and KT as an strategic priority alongside research and education.

This section first provides an overview of the hurdles to fully-fledged careers in valorisation and makes the case for investing in staff training. It then turns to discuss recruitment and retention strategies in relation to the flipped approach.

A. Seeking staff complementarities and investing in staff training to mitigate challenges to recruitment and retention in knowledge transfer

1. Structural challenges to recruitment and retention

Data collected as part of YUFERING WP3 activities indicates that YUFE partner universities face similar challenges when it comes to staff recruitment and retention, albeit to different degrees due to national specificities:

- <u>Lack of competitive compensation:</u> in the global war for talent, the demand for highly-skilled workers means that competition from other sectors, and in particular industry, makes it difficult to attract sought-after profiles through financial incentives. Universities usually work with fixed pay-scales which often do not match the salaries offered by the industry to similar profiles. From the perspective of public universities, respondents mentioned that incentives for career development can be more limited in comparison with private universities or industry.

- <u>Lack of employment security:</u> while it is not the case for all YUFE members, it was reported during several interviews that some universities were confronted with limited and/or fluctuating financial resources, which means that they are sometimes not able to offer employment security to all KT staff members. Thus, KT staff may sometimes be working under fixed-term contracts, often based on project funding. This makes it challenging to retain staff over longer periods of times. In other YUFE institutions, the KTO is supported by dedicated government funding for human resources and valorisation projects, which guarantees a minimum size for the KTO. Thus, we observe that minimum guarantees in terms of structural funding are crucial to allow KTOs to retain staff and build expertise.

- <u>Lack of awareness of knowledge transfer as a career path</u>: valorisation activities may suffer from a lack of visibility, which restricts the pool of potential candidates who would consider knowledge transfer as a career option.

2. Creating complementary teams and investing in staff training

Together, the aforementioned structural hurdles make it challenging to attract and retain the right profiles, which in the long-run may have adverse effects of knowledge transfer performance. To mitigate these challenges, it is **important to build teams with diverse skills profiles and to invest in staff training**:

- Focusing on collective rather than individual pools of competencies: considering the vast array of competencies needed to effectively manage (flipped) knowledge transfer, all-encompassing competence profiles are best understood as collective rather than individual attributes. Recruitment efforts should thus focus on missing skills within the team, rather than on trying to find ideal, comprehensive profiles.

- Building skills in-house: competencies which cannot be directly acquired may also be developed overtime through peer-learning and specialised training. This can be done through the ASTP and also by harnessing the potential of YUFE as a support community for KT professionals (trainings for knowledge transfer professionals, YUFE flipped knowledge transfer office, study visits, etc.). In the future, networks such as the YUFE alliance can also offer opportunities for skills development through inter-institutional mobility in the form of job rotations or job shadowing for different durations (several weeks to several months). This is in line with the objective of the YUFE Staff programme to create wider career and training opportunities within Europe/YUFE alliance. In the next phase, we could also develop a special offer of training/mobility tailored to the needs of FKT professionals. We may investigate possibilities to fund such mobility periods for FKT experts through the Erasmus+ Staff Mobility scheme. Several KT professionals from the YUFE network have already participated in similar initiatives, for instance by visiting the KTO and/or student entrepreneurship centre of other YUFE institutions (e.g. visit of KT professionals from NCU to the KTO of the University of Antwerp, and to the student entrepreneurship lab of the University of Essex, etc.).

B. Creating attractive career paths for knowledge transfer professionals

Whilst structural challenges such as employment and compensation terms may be difficult to address in the short-term, lower hanging fruit may be within reach. Considering the outward-looking outlook of the flipped approach, the evolution of KT practices may constitute an opportunity to attract new, more entrepreneurial-minded profiles to the profession:

Recruiting beyond the usual candidate profile

The flipped approach requires universities to recruit beyond their usual pool of candidates, i.e. former PhDs and post-docs, to benefit from the knowledge and experience of more sales-oriented profiles to support university-industry co-creation processes. This includes for instance business-minded professionals with a background in industry or consulting, and who may not necessarily have a PhD. Nevertheless it is also important that the Flipped KT candidate has a sufficient understanding of the academic world and understands the mindset of academics. Previous work experience at the university thus remains a valuable asset. At the same time, he or she also needs to be "hands on" and action-driven to move forward. Another alternative candidate profile which may be worth considering is recent university graduates. Indeed, talents must often be produced in-house by training young people for the jobs of the future.

Improving the visibility of valorisation as a high societal impact career path

Efforts must be sustained to enhance the reputation of the KT profession as a high societal impact career path. For instance, greater emphasis may be put on the role of KT professionals in bringing new solutions to the market, and on the socio-economic role of valorisation and its contribution to value creation. KT professionals may achieve job satisfaction by helping translate the innovative ideas of researchers into solutions to the major challenges of our times for the benefit of society, or by translating the needs and demands of society towards researchers (bi-directional process).

Promoting valorisation as a varied job with many opportunities for personal development

The job of an FKT professional is a highly-stimulating one. KT professionals are confronted with a variety of tasks and projects, they are able to develop a large network of diverse stakeholders, and have plenty of opportunities to learn new skills and further develop their competence profile (ASTP, etc.). These aspects of the job are important vectors of attractiveness for the profession, which should be put forward as part of job descriptions. Whilst careers in valorisation are often horizontal with few possibilities for promotion, this can be offset by the feeling that one can 'grow' as a professional, for instance by being frequently exposed to cutting-edge innovation and highly-intelligent individuals, by benefitting from new training opportunities and from opportunities for networking with stakeholders outside of university, often on an international level.

Taking advantage of flexible careers

Whilst turnover is inherent to workforce management, knowledge transfer professionals may wish to re-enter the profession after some time spent in industry. Keeping in touch with former staff may thus be a worthy investment, as they may latter on come back with newly acquired industry experience and contacts. At the same time, turnover means working with new people bringing in new ideas and their own professional connections.

Fostering ongoing interactions with SBAs through dual appointments and joint workspaces

Sustained interactions with key local SBAs may also be achieved through the creation of joint appointment (so-called "liaison manager" positions) between the university and major local organisations such as chambers of commerce or other intermediary organisations within the local ecosystem. Such liaison officer positions constitute attractive career options for knowledge transfer professionals, while constituting a valuable resource for universities and SBAs alike. To maximise effectiveness, liaison manager positions need to be created in line with the strategic priorities of the university/KTO is terms of domain specialisation. In addition, universities may consider the possibility of inviting staff from different SBAs to have their workspace within the university (so-called 'SBA Implants'), which would allow SBAs to interact with researchers and learn about their work on a daily basis. At the same time, researchers would learn from SBAs about their challenges, needs and insights.

C. Food for thought: policy implications

Some EU-level policy recommendations emerged from the discussion on competencies for flipped knowledge transfer management and career pathway:

- <u>Investing at the EU level in capacity to go to the labs and capture potential for valorisation:</u> business developers act as crucial intermediaries between researchers and KTOs, which may not have the capacity to go to the labs themselves to identify and foster opportunities for valorisation. Based on interview data, it is clear that national policies and legal frameworks supporting knowledge transfer and KTO operations differ significantly from one Member State to the other. For example in some YUFE institutions, the KTO is supported by structural government funding which enables it to effectively stimulate valorisation projects (e.g. budget for Proof-of-Concept projects, for the development of an IP portfolio, for appointing dedicated valorisation and liaison managers). In other YUFE institutions there may be a lack of similar funding, which leads to significant discrepancies between the YUFE partners in terms of available means (i.e. funding but also human resources). In the future, it is hoped that more Member States, possibly thanks to EU support, will be able to dedicate more resources to knowledge transfer and valorisation through structural budget lines supporting the basic functioning of KTO operations (minimum size, business development/liaison manager positions, PoC funding). In Belgium, the Flemish Industrial Research Fund (IOF) is a good example of such structural funding supporting a broad spectrum of valorisation activities.

- <u>Educating students for careers in valorisation</u>: in the future, it may be possible to develop courses, credentials or even degree programmes preparing young people for jobs related to knowledge transfer. Such initiatives may be developed on a European scale, as the national scale may not offer the required critical mass of prospective students. Building further on the outcome of the YUFERING project and on the FKT trainings which we will also develop under Task 3.6, we may also investigate whether we could in the future develop such an offer within the YUFE alliance.

Executive Summary

1. Towards a Common Profile of (Flipped) Knowledge Transfer Professionals

Knowledge Transfer (KT) professionals are increasingly required to operate in an open innovation context characterised by the multiplication of Quadruple Helix interactions. To effectively manage these interactions and create impact, KT professionals need to be acquire a broad skill set allowing for effective management of various knowledge co-creation activities leading to a greater number of solutions being made available to citizens, policy-makers and entrepreneurs.

Drawing upon original insights from KT professionals of 10 European universities, we supplement the RTTP framework with so-called "**YUFE add-on competencies**" identified as crucial for supporting the flipped approach. We also provide recommendations to support the career pathways of KT professionals in light of challenges linked to recruitment and retention. To help the reader better visualise the output of this work, the following infographics provide an overview of the YUFE add-on competencies needed to manage flipped KT across the six RTTP competence categories, both at individual and KTO level. Key takeaways regarding the competence profile and recommendations for modernising the career pathway of KT professionals are then summarised in a separate section.

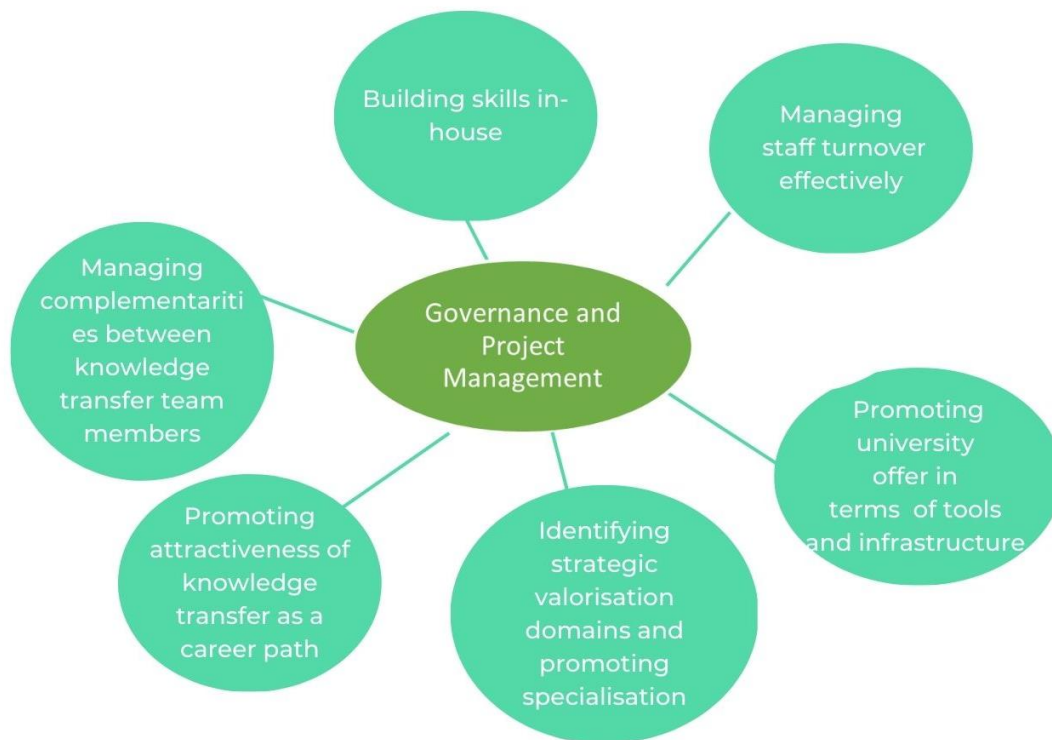*Figure 3: Add-on competencies for flipped knowledge transfer professionals*

Figure 4: Add-on competencies for team and ecosystem management supporting the flipped approach

2. Key takeaways on the Profile and Career Development Path of Profile of (Flipped) Knowledge Transfer Professionals

- A core competence for the flipped approach is the ability **to make effective connections between SBAs and experts outside** of the KTO but also with (specialised) KT professionals inside the KTO. FKT professionals must perform a **bridging function**: they need to have the ability to understand and translate the needs of various SBA into opportunities for collaboration. This requires **a customer-oriented attitude** on the one hand, but also a good knowledge of where to find the necessary expertise **inside the university/KTO.**

- The FKT professional also needs to be a **good team player** in order to get support from more specialised colleagues within their own institution/KTO (e.g. on IPR, legal, financial aspects).

- As the FKT professional acts as a liaison manager and bridge-builder**,** they need to have or develop **the ability to build trust and long-term quality relationships and networks**. They need to be able to understand and navigate the constraints of different environments.

- FKT professionals also need to know where they can find the **necessary funding/investment partners to support and implement collaboration projects.**

- **Do well and make others aware of it**: visibility is key to raise awareness of opportunities among potential partners. It can be achieved for instance by showcasing successful collaboration cases on social media, by organising awards and awarding prizes, etc.

- From our interviews with KT professionals and Heads of KTO, the **FKT approach appears to be very time-consuming**, which is why it is also recommended to **develop a strategy defining the priority areas** in which an FKT approach will be implemented. According to this key focus areas, FKT experts who are familiar with the domain may be appointed or recruited. Such **specialised profiles** allow SBAs and FKT experts to be "on the same page" when engaging initially, and later on when the co-creation process starts. If possible, the **creation of dual appointments** with key local SBA (so-called "**liaison manager" positions**) in line with the defined key focus areas can be an effective solution.

- However, specialisation within the KTO will not always be possible depending on the resources of the KTO, its size and years of experience. The sustainable **growth and development path** of a KTO is highly contingent upon the degree of support obtained from university management, as well as upon supporting measures in national policy.

- Moreover, one FKT professional usually cannot possess all of the necessary skills. It is essential to focus on **creating a complementary team while investing in staff training in order to build skills in-house**.

- FKT professionals should also be encouraged to **learn through peer networks**, such as the ASTP. Within YUFERING, we established **the YUFE Knowledge Transfer Expert Network,** which will form the basis of a future **FKT Community** in our YUFE alliance. Within this community, best practices can be shared and FKT colleagues can support one another with complex

valorisation cases. In the future, we may be able to develop a special training offer or job shadowing for FKT, for instance in the framework of the Erasmus+ Staff Mobility scheme.

- The job of a **Flipped KT professional** is a very challenging and **varied one**. It needs to be promoted as a job entailing **many opportunities** for **learning on the job, creating societal impact and achieving personal development**. It also needs to be promoted as a job which can lead to new **career opportunities** in other sectors (spin-offs, start-ups, governance and policy, other KTOs, innovation hubs, etc.).

- For a KTO, an active HR policy focused on the one hand on **attracting new young people,** and on the other hand on **maintaining good relationships with former staf**f, is highly desirable. While attracting new talents allows for incorporating new skills, news perspectives and new networks into the KTO, keeping in touch with former staff may facilitate the flipped approach.

- The use of **strategic intelligence and business insights tools** to understand the needs of the market and SBAs can support the Flipped approach. It is also important that FKT professionals have access to good data monitoring instruments and tools for the efficient follow-up of their Quadruple Helix interactions.

- Some **EU-level policy recommendations** emerged from the discussions as well. A first suggestion is to invest at EU level in the scouting capacities of KTOs (capacity to "go to the labs") to identify and create opportunities for valorisation. Second, it is suggested to support initiatives to educate students about and for careers in valorisation, possibly through a European initiative (e.g: developing a course at Master's level within a European University alliance).

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