Understanding the potential for sharing SHAPE commercialisation support

Light-touch Literature Review

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About Oxentia

Oxentia Ltd is a successful innovation management and technology commercialisation consultancy that started in 2004 as an operating division within Oxford University Innovation Ltd, the world leading technology transfer company of the University of Oxford.

Oxentia's mission is to provide high quality innovation management consulting services and advice, derived directly from practitioners' perspectives to organisations around the world, adding value and enabling economic growth at all levels. Since inception, Oxentia has engaged with large corporate businesses and SMEs, university spinouts, research organisations foundations, and governments as well as academics from research institutions and universities across most continents of the world across STEMM and Arts, Humanities and Social Sciences subjects. To date, Oxentia has worked with clients in more than 70 countries.

Contents

1. Introduction

1.1   About the project

The London School of Economics and Political Science (LSE), as the lead party acting on behalf of a consortium of five universities (LSE, Royal College of Art, University of Bristol, University of Leicester, University of Lancaster) successfully applied for a Connecting Capability Fund Research England Development ("CCF-RED") pilot grant for the project 'Creating the evidence base for shared TTO needs and opportunities in supporting SHAPE spinouts'.

This project seeks to establish a clear value proposition for shared Technology Transfer Office (TTO) models in SHAPE (Social Sciences, Humanities, and the Arts for People and the Economy) commercialisation. By creating a robust evidence base, it will identify how shared TTOs can best support the commercialisation needs of institutions of all sizes and disciplinary foci. Ultimately, this initiative aims to enhance the efficiency and effectiveness of spinout support across the sector, driving economic and social benefits through improved commercialisation pathways.

The project has four key objectives. First, it aims to engage a wide range of UK Higher Education Providers (HEPs) to deepen and formalise understanding of SHAPE commercialisation needs. Second, it seeks to establish a robust evidence base on current practices, highlighting capacity-building needs among HEPs supporting SHAPE spinouts. Third, the project will evaluate the merits of different "sharing models" for TTO functions (see **Box 1**). Lastly, it will offer evidence-based recommendations for strengthening SHAPE commercialisation, with a focus on England and relevant insights for devolved nations.

To fulfil these aims, LSE has commissioned Oxentia Ltd to support the consortium in the delivery of the project work packages:

1. WP1: Literature Review
2. WP2: Survey, interviews and focus groups with the UK HEP sector
3. WP3: Report and development of a decision-making tool.

The outputs and findings from these activities will be disseminated by the consortium via a launch event in April 2025, and through a newly created webpage.

Box 1: Potential models for shared SHAPE spinout support in the UK

As part of Objective #3, "sharing models" to be explored during the project include (but are not to be limited to):

i.   Groups of HEPs commissioning outsourced support from a non-higher education organisation with the skills and experience needed to support tech transfer in SHAPE spinout support.
ii.   Individual HEPs with more TTO capacity charging a fee for the use of their existing services by smaller providers.
iii. New mechanisms for cross-disciplinary collaboration facilitating the meaningful inclusion of SHAPE in STEM-based spinouts, such that SHAPE innovation 'piggybacks' on TTO support for STEM commercialisation.
iv.   Opportunities for more people-focused development through mentoring, secondment or shadowing initiatives between HEPs.
v.   Promoting more SHAPE representation in existing collaborations intended to maximise capacity and capability, including to raise funds (as in Northern Gritstone).

1.2   About the Literature Review

1.2.1   Aims and Scope

The literature review is intended to be "light touch", providing a high-level review of known literature, to inform the stakeholder engagement activities in WP2. Specifically, it was envisioned that the literature review might **aid in identifying topics or models** that could be further explored through surveys, interviews or focus groups.

In consultation with LSE, it was agreed that the scope of the literature review would include the following:

1. **SHAPE commercialisation –** What are the challenges and opportunities that make supporting SHAPE commercialisation different to STEM? What is known about best practice, or interesting approaches to supporting SHAPE commercialisation and spinouts?
2. **Best practice in technology transfer** – What are common models for supporting spinouts and commercialisation, and are there any examples of shared tech transfer support that we can learn from?
3. **Other shared services or support functions across universities** – What other examples of shared support might we be able to learn from?
4. **Conclusions** – How might all of this inform the options and design for a shared SHAPE spinout support function in the UK?

1.2.2   Approach

Given that the literature review is intended to be "light touch", it was agreed that Oxentia would rely primarily on input from the consortium members to identify relevant literature that falls within the scope of the project. In addition, Oxentia reached out to members of the Aspect network, and to our own team members (who have worked on relevant projects) to suggest further models and resources to investigate, as well as conducting some additional desk research to find out more about the programmes suggested in this approach.

This approach identified a longlist of 27 exemplar programmes, reports, and/ or articles, along with other online sources (e.g., organisations' websites) which we have then reviewed and synthesised within this report.

1.2.3   About this document

This document is the output of WP1: Literature Review. The document includes four sections: Introduction, Characterising SHAPE Commercialisation, Learnings from STEM Technology Transfer, and Profiles of Other Shared University Offerings, followed by some high-level conclusions and considerations to underpin designing the subsequent project WP2: Survey, interviews and focus groups with the UK HEI sector.

As a next step, this document will be shared with the consortium members, who will provide further reflections and feedback about how the insights and information in this report might best inform the subsequent stakeholder engagement activities.

2. Characterising SHAPE Commercialisation

SHAPE commercialisation refers to the process of transforming research and innovations from the Social Sciences, Humanities, and the Arts for People and the Economy (SHAPE)[1] disciplines into marketable products, services, or ventures. This approach aims to leverage the insights and creativity inherent in SHAPE fields to address societal challenges, drive economic growth, and enhance cultural understanding.

In this chapter we aim to explore how SHAPE differs to STEM and what the implications might be for how to best support the commercialisation of SHAPE spinouts.

2.1 How does SHAPE commercialisation differ to STEM?

Several articles and reports were identified for this review, which discuss how SHAPE commercialisation differs from STEM (Science, Technology, Engineering, and Mathematics), and what we can learn about best practice in supporting SHAPE research commercialisation. This includes two reports from the UKRI Innovation Caucus (2022, 2024), a report from the University of Cambridge (2024), the Aspect Learning Reports (2020, 2021), and several others (see References in **section 6.1**). Many of these reports echo the same points. In summary, these articles identify the following ways in which SHAPE differs from STEM:

- Often involves intangible or non-physical outputs such as frameworks, policies, creative works, cultural products, or social innovations. These outputs may address societal challenges or enhance understanding rather than producing a tangible product.
- IP is often non-patentable, including IP such as copyrightable works, methodologies, or policy recommendations, which require different strategies for protection and commercialisation.
- Often targets societal, cultural, and public sector markets. Examples include creating solutions for social equity, developing community engagement tools, or designing arts-based interventions.
- Pathways often include consultancy, licensing of creative content, collaborations with government or NGOs, or creating ventures with a focus on social impact.
- Engages a diverse range of stakeholders, including governments, non-profits, and cultural organisations, alongside businesses. The end users may be communities or specific societal groups rather than consumers.
- Success is often measured in terms of societal, cultural, or educational impact rather than purely financial returns.
- Requires interdisciplinary approaches that blend social insight, ethical considerations, and creative thinking. Stakeholder engagement and qualitative methods are central.

Further details are included in **Table 1**, which also discusses some implications for technology transfer support.

> **Conclusion:** A shared SHAPE TTO offering is likely to offer a different kind of support than a "traditional" TTO. The insights on how SHAPE differs can be used to help inform what that offering

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[1] https://www.thebritishacademy.ac.uk/this-is-shape/

might entail. However, the project partners will need to consider whether the offering should focus strictly on spinout support, or also earlier stage pipeline development. The project partners should also consider what aspects of spinout (or other commercialisation) support are best suited to a shared offering. See next sections for more on supporting SHAPE commercialisation.

Table 1: Characteristics of SHAPE Innovations and Implications for TTO Support Models
(Source: Oxentia's analysis of literature)

Characteristic	Description and Implications for TTO Support
Non-Traditional Intellectual Property (IP)	**Type of IP**: SHAPE research often generates non-patentable outputs, such as frameworks, methodologies, creative works, policies, and data-driven insights. These differ from the patentable technologies common in STEM. **IP Management**: SHAPE TTOs require tailored strategies for managing copyrights, licensing, and open-source models.
Societal Impact Focus	**Broader Value Proposition**: SHAPE TTOs often emphasise societal, cultural, and policy-related impacts rather than purely financial returns. **Public Sector Engagement**: These offices frequently collaborate with government agencies, NGOs, and community organisations to ensure the outputs are accessible and impactful.
Interdisciplinary Commercialisation	**Collaboration Across Disciplines**: SHAPE TTOs often facilitate interdisciplinary projects, combining social sciences and arts with STEM fields to create innovative solutions (e.g., using behavioural science to design AI systems or applying design thinking to urban planning). **Diverse Expertise**: Staff in SHAPE TTOs may include professionals with backgrounds in social science, humanities, and creative industries to support these interdisciplinary efforts.
Alternative Commercialisation Pathways	**Consultancy and Services**: SHAPE research often leads to consultancy services, training programmes, or community engagement initiatives. **Creative and Cultural Industries**: Outputs may include films, exhibitions, and digital content, which require unique commercialisation models such as royalties, partnerships, or licensing deals.
Stakeholder Diversity	**Broader Stakeholder Base**: SHAPE TTOs engage a wider range of stakeholders, including policymakers, cultural organisations, educational institutions, and community groups. **End-User Focus**: The end-users of SHAPE research are often individuals, communities, or public-sector bodies rather than private-sector companies or consumers.
Success Metrics	**Impact Measurement**: Success for SHAPE commercialisation is often evaluated in terms of social, cultural, or educational impact, not just revenue or market penetration. **Sustainable Development Goals (SDGs)**: Many SHAPE projects align with SDGs, reflecting their focus on societal benefits.

Skills and Capacities	**Narrative and Communication Skills**: SHAPE TTOs must effectively articulate the value of intangible and complex research outputs to potential partners.
	Community Engagement: They often require skills to foster relationships with non-commercial entities and societal stakeholders.
Policy and Advocacy	**Regulatory Focus**: SHAPE TTOs may play a role in influencing public policy, advocating for societal change, or developing frameworks that address global challenges like inequality and sustainability.
	Ethics and Social Responsibility: SHAPE projects often prioritise ethical considerations, aligning with the principles of inclusivity and sustainability.

2.2 What are the characteristics of SHAPE spinouts?

For the purposes of this review, we also wanted to investigate the characteristics of SHAPE spinouts, and what makes those different. Several of the Aspect-funded projects have offered insights on this point. In particular the Aspect Research Commercialisation (ARC) programme[2] (now the UKRI SHAPE Catalyst) delivered a talk at the Praxis Auril conference (June 2023), which characterised the types of SHAPE ventures that have participated in the programme. Of the 80 academics it had supported in its first three years:

- Nearly three-quarters (74%) were from social sciences, 19% from humanities, and 9% from the arts
- Over half were service based
- Over half were social ventures
- Many aimed to sell to government or government-funded organisations.

The ARC team also identified several challenges linked to these characteristics, and suggested the following solutions to address these:

- Cohort-based support can create a sense of community and identity, and make role moles more visible
- Service-based ventures need different kinds of support (Market/Branding & IP, Mentors, Goal Setting)
- SHAPE ventures were likely to need to commercialise without investment, meaning time buyouts, team building and activities to move to first sale quickly are enabling factors.

Another resource we reviewed that provided insight on SHAPE spinouts also comes from Aspect. A 2023 survey of Aspect members reported that 63% of members had at least one SHAPE venture, and that the numbers varied from 0-8 per institution (some of these are pre-incorporated. Whilst on average 43% of members' SHAPE portfolios were social ventures or social impact driven; the absolute numbers could also vary widely (from 0 to 100%).

Furthermore, the survey provided evidence for the volume of SHAPE innovation projects that might be likely to need support from a shared TTO offering. Again, this varies, from 0 to 99, with an average

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[2] ARC was originally funded by Aspect to accelerate early-stage SHAPE ventures using a model based on the SETsquared iCure programme. It was later combined with the Aspect TIAH Discovery workshops, to create a programme that could support academics through the different stages of idea development: Discovery, Launch, Grow, and Scale (DLGS). This programme has since been funded and rebranded as the UKRI SHAPE Catalyst, and made available to all of the UK.

of 21 and a median of 9 SHAPE innovation projects per institution. **Figure 1** shows selected charts from this survey.

Conclusion: These insights may inform the types of services and support offered by the shared SHAPE TTO. Access to time and people/expertise seems to be a critical enabler for SHAPE ventures. If these ventures are less likely to raise investment/ need capital, shared TTO models based on investment funding (returns to investors) are less likely to be feasible. Understanding how long to support ventures and when to offer support is also key. See next section on the commercialisation journey.

Considerations: Does the type of venture a HEP supports (discipline, target client, product or service), require a different model of SHAPE support? Can we use the data from the Aspect survey to identify those institutions that are likely to have more/ less resources, and use this to prioritise stakeholder interview list for this project? Similarly, for those reporting existing spinouts, could we use that data to prioritise potential interviewees (i.e., find out what support they already offer, and willingness to participate in a shared model)?

Figure 1: Selected findings about Aspect Member's SHAPE portfolios from the Aspect Member Survey 2023

Number of SHAPE projects in your 'innovation portfolio'

Organisation	A year ago	Today	Difference	% Change
A	20	99	79	395%
B	50	77	27	54%
C	42	75	33	79%
D	46	66	20	43%
E	11	31	20	182%
F	20	30	10	50%
G		20	20	
H	8	16	8	100%
I	12	15	3	25%
J	7	10	3	43%
K	1	10	9	900%
L	2	10	8	400%
M	2-3	9		
N	6	8	2	33%
O	3	8	5	167%
P	5	7	2	40%
Q	4	7	3	75%
R	5	5	0	0%
S	3	5	2	67%
T	2	4	2	100%
U		3	3	
V		3	3	
W	2	2	0	0%
X		2	2	
Y	3	1	-2	-67%
	A year ago	**Today**	**Difference**	**% Change**
Average	13	21	11	134%
Min	1	1	-2	-67%
Max	50	99	79	900%
Median	6	9	3	60%

- Number ranges from 1-99, with an average of 21 and a median of 9
- Growth has also varied, but with the exception of a few, most have grown
- A few members expect double digit growth next year, most expect around 2-3

What % of your SHAPE 'innovation portfolio' are social enterprises/social impact driven? (Your best estimate, or enter 0)
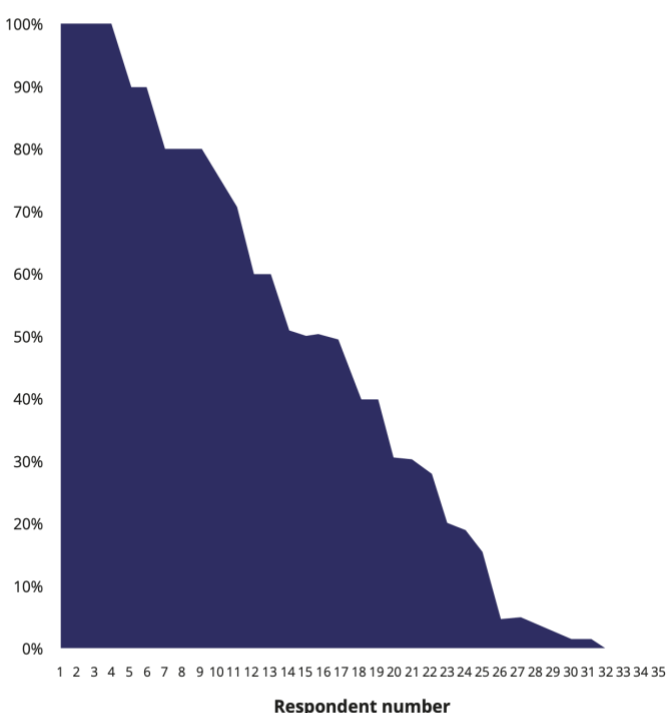
- On average this year, 43% of the SHAPE innovation portfolio are social enterprises/social impact driven projects. Responses ranged from 0 to 100%

Do you have any SHAPE ventures at your institution?


- Not Applicable
- No - We do not have any SHAPE ventures (incorporated or in the pipeline)
- Unsure
- Yes - We have at least one live (ie, incorporated) SHAPE venture
- Yes - We have at least one potential (ie, pre-incorporated) SHAPE venture we are actively supporting
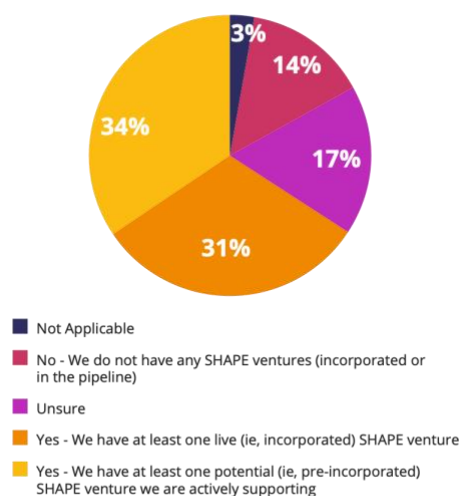
- 32% of the respondents have at least one SHAPE venture at their institution. 31% do not have one or are unsure.

Approximately how many SHAPE ventures have been created or are being created with support from Aspect activites, in the last year?
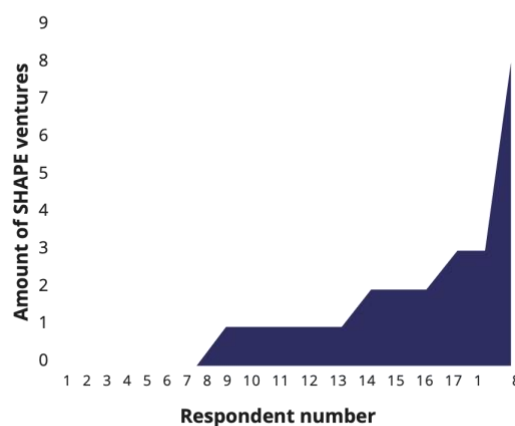
- The number of ventures per respondent ranged from 0-8 (N=12)

2.3   What are the phases of the SHAPE commercialisation journey?

The UKRI SHAPE Catalyst programme aims to support academics at the idea stage, through to venture formation. However, TTOs still need to maintain and develop a pipeline of potential SHAPE commercialisation projects and support those projects in developing their ideas.

There have been several attempts to characterise the stages of the SHAPE commercialisation journey (**Figure 2**), including a 4-stage framework from the University of Cambridge, and the DLAS model developed by the ARC programme (which is being implemented in the UKRI SHAPE Catalyst), and an 8-stage process introduced by McDonald and Mann as part of the Aspect Impact report (2023). All the frameworks encourage TTOs to deliver different types of support depending on where a project is in its journey, and tools for assessing readiness along this journey are starting to be emerge (**Figure 3**).

The literature also shows that the journey of a SHAPE venture is usually not linear. For example, it may start with a consultancy engagement or public engagement project, that could evolve over time into an opportunity for a more "traditional" license or spinout route to market (Aspect Learning Report, 2021). It is also reported that "value creation" for SHAPE can take longer than for STEM (Rahman et al. 2022).

And for some institutions, a consultancy or public engagement route is the end goal for commercialisation. In a 2021 funding scheme consultation letter, the President of the Council for the Humanities, Arts and Social Sciences (CHASS) in Australia notes that *"For many in HASS, expert consulting work will be a more common pathway to commercialisation than product development, leading to future opportunities for working with industry while bringing additional benefits to universities teaching in HASS, such as improving the delivery of work integrated learning."*

This point is also made in the Innovation Caucus report "Commercialisation of Research out of Social Science (CROSS)" (Rahman et al. 2022), in which they discuss how approaches to social sciences venture-building vary based on HEP resource:

- *"HEIs with deeper resource pools are able to approach commercialisation from a more traditional sense; that is in terms of venture/enterprise building. [….] They also tend to discuss commercialisation using traditional metrics such as licensing and intellectual properties (IPs)."*
- *"Due to lack of resources […] smaller HEIs therefore tend to prioritise other types of economic-bearing commercial activities, such as consultancy services; or non-economic bearing, but categorised under impact-bearing activities, such as policy advisory services."*

They go on to recommend that non-venture making activities also need to be captured in commercialisation metrics (so long as they bear income (e.g., consultancy), and noting that this value may take longer to be realised and may be incidental (e.g., through cost savings rather than in the creation of new products and ventures.) (For a deeper look into some of the findings from the report and a subsequent study on how to measure impact from SHAPE ventures, see **Appendix 0**.)

A final tool that may be useful for this project is a SHAPE commercialisation maturity model. Rahman et al. introduce a 3-phase model in their 2024 report **(Figure 4)**, however the model currently used by Aspect members may be more relevant, as it has existing data we can compare against. The model was introduced by the ARC team, and suggests institutions or ecosystems move through four phases: 1) Nascent, 2) Seeding, 3) Towards and Critical Mass, and 4) Building a Scalable, Repeatable Model. The majority of Aspect member reported being at the Seeding stage in 2023 (**Figure 4**).

Conclusion: The literature suggests that supporting a breadth of knowledge exchange (KE) activities in the SHAPE disciplines can be important for HEPs aiming to build their SHAPE spinout pipeline. Much of the Innovation Caucus reports echoes what had been learned through the Aspect Network and ARC about motivations, barriers, and differences in SHAPE research commercialisation, however the point that smaller/ less well-resourced HEPs are focussing less on venture building, and more on broader KE activities for social sciences is important. We may need to explore in the survey whether this is likely to prevent them from engaging in SHAPE specific support and/or if this suggests any shared models need to look beyond just spinout support.

Considerations: What types of support is happening at each stage? Which of these phases would be suitable for shared TTO support? Do HEPs have a greater need to share support at different stages in the journey (something to ask in the survey)? Should consultancy-based business (i.e., those that have not spun-out but generate income) be considered as in-scope for a shared offering? Should a wider breadth of KE support be in scope? If not, will that prevent HEPs that are less-well resourced (and use wider KE activities for reporting their SHAPE impact) from engaging in a shared TTO offer?

Figure 2: Different models showing stages of the SHAPE commercialisation journey

**Phases of the Commercialisation Journey
(Ulrichsen & Athanassopoulou, 2024)**
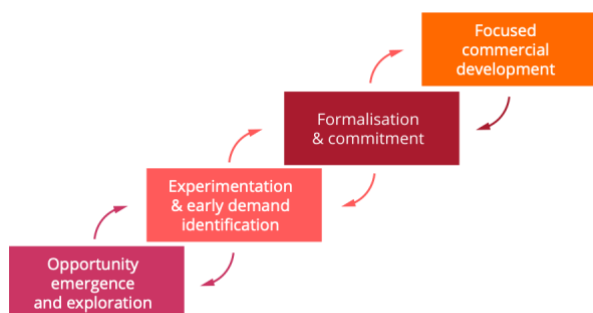
**DLAS Methodology
(Jantke, 2024)**
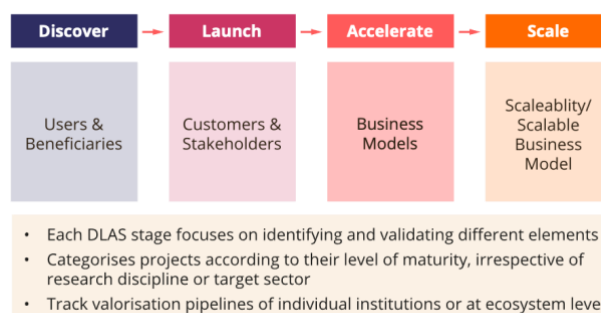
**Stages for an academic innovator (showing the "zero point" where activities shift from HEP to Innovator)
(McDonald and Mann, 2023)**
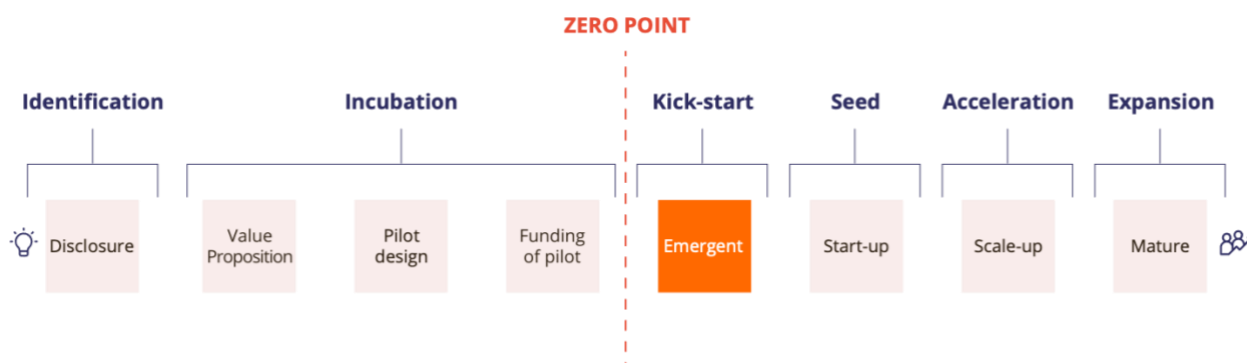
Figure 3: Frameworks for assessing and tracking SHAPE commercialisation projects

**Progress Tracking Framework
(Ulrichsen & Athanassopoulou 2024)**

**SHAPE Readiness Levels Framework
(Oxentia 2024)**

Figure 4: SHAPE Ecosystem Maturity Models

**SHAPE Commercialisation Ecosystem Lifecycle
(Rahman et al. 2022)**
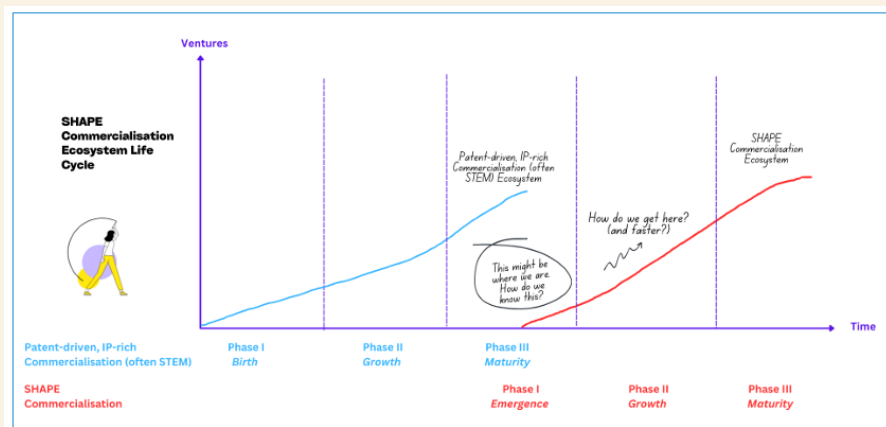
Figure 2: SHAPE Commercialisation Ecosystem Life Cycle (Authors' Creation, inspired by the Entrepreneurial Ecosystem Life Cycle concept). It is important to clarify that this graph serves merely as a visualization of the authors' perception of the current SHAPE Commercialisation Ecosystem. It does not represent scientific findings that illustrate an entrepreneurial ecosystem.

**Aspect Member's Assessment of their SHAPE Commercialisation Maturity
(Aspect Member Survey 2023)**
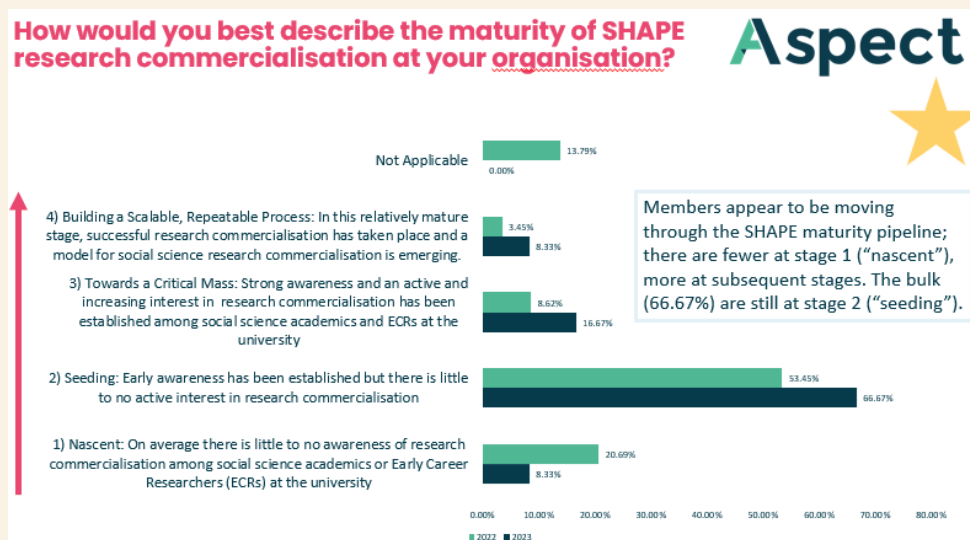
2.4   Are there differences for the Arts and Creative Industries?

2.4.1   Unique characteristics of innovations from the Arts and Creative Industries

Some additional articles we reviewed discussed the unique characteristics of innovations from the Arts and Creative sector.

The first one "Academic entrepreneurship in the creative arts" (Abreu & Grinevich 2014) explored the context, motivation, and variety of academic entrepreneurship in creative arts based on survey study of 1108 academics in the UK complemented by the institutional data from the Higher Education–Business and Community Interaction Survey, and data on individual submissions to the

Research Assessment Exercise 2008. The authors identified the following four characteristics of an academic environment cultivating entrepreneurship within creative arts: practice-based nature of research, the role or networks, particularly linked to teaching, the significance of non-monetary rewards, and the role of geographical location of external organisations engaging with academics.

Azagra-Caro et al. (2022) published a study "Academic artists' engagement and commercialisation," where they collected survey responses from over 7,000 Spanish academics to understand the relationship between art, academic commercialisation and engagement. The authors made a distinction between "commercialisation" (monetising their artistic creations or exploit them in markets) and "diffusion" or "engagement" (using art to diffuse scientific knowledge or generate ideas for research), where the latter seems more prevalent among academic artists. More than half of researchers surveyed were creating artistic work and while engagement was a norm, commercialisation efforts were rather rare. They also found out that working at the university and producing high quality research can oppose being an artist, but when a certain level of quality is achieved, researchers start engaging in artistic commercialisation.

These two studies may suggest a need for tailored support that addresses specific challenges faced by academic artists, such as balancing high-quality research with artistic practice. Academics in creative arts seem to be motivated by non-monetary motives, such as helping their students, obtaining materials for teaching, or gaining insights into a research area and external expertise. Effective commercialisation support should provide targeted resources and frameworks that align with arts and creative industries innovators' motivations, enabling market impact without compromising academic or artistic integrity.

> **Considerations:** Can a SHAPE support offering also apply to arts and creative industries ventures, or is a different kind of support needed for this?

Table 2: Key findings from "Academic artists' engagement and commercialisation" (Azagra-Caro et al. 2022)

Theme	Description

New Concept of Academic Artists	• Academic artists are researchers who produce scientific knowledge and create artistic work, such as painting, writing, or performing arts:
	   o Engaged Artists: Use art to diffuse scientific knowledge or generate ideas for research.
	   o Commercial Artists: Monetise their artistic creations or exploit them in markets.

Commercialisation vs. Engagement	• Commercialisation: Rarer than engagement, commercialisation requires additional resources and market acceptance, making it less feasible for academics. • Diffusion/Engagement: More prevalent than commercialisation, engagement allows academics to use art for knowledge diffusion and collaboration.
University Context	• University researchers are less likely to be academic artists due to institutional focus on conventional research metrics. • When high science quality is achieved, university researchers can overcome barriers and participate in artistic commercialisation.

2.4.2 IP in Creative Industries

World Intellectual Property Organization (WIPO) distinguishes the following as creative industries: music, film, video games, publishing, or advertising. Key forms of IP in this sector include: copyrights, trademarks, design rights, patents (e.g., referring to a new method in production of creative works), and licensing (e.g., particularly in music and film industry). Securing IP in creative industries, regardless of the form of the business, is crucial and returning creators the value for providing the public with an affordable access to created content. Copyright and related rights provide a mechanism for licensing creative work and a market-based framework for protecting and monetising creative work.

A recently published corporate report "IP for a creative and innovative UK Strategy 2024 to 2027" highlights the UK's ambition to support the cultural and creative industries to be among the best in the world and build an IP system that encourages investment in creativity and innovation. Between 2017 and 2022, the number of patents granted grew more than 67%, trademark registrations by more than 131% and design registrations by more than 307%. Developing an IP law targeted at arts and creative industries will be increasingly important to secure creators' rights, incentivise them to continue creating good for public benefits, and thus drive innovation in the UK economy to achieve desired aims. However, further research into the form and structure of the IP law for creative industries is required to better understand the needs of arts and creative businesses (this was outside the scope of this review).

3. Learnings from STEM Technology Transfer

This section explores what is known about models for shared TTO support, for 'traditional' STEM commercialisation. Our aim was to identify any known insights on challenges and best practice, and what the implications might be for a shared SHAPE offering. In the next chapter we then look at some examples of shared support and how do they work.

3.1 What are the limitations of 'traditional' technology transfer support?

'Traditional' technology transfer models have been in existence for many years, with the modern format generally considered to have started gaining prominence following the 1980 Bayh-Dohe Act in the US.

The WIPO website identifies five models for technology transfer: Technology Transfer Offices (TTOs), Technology and Innovation Support Centres (TISCs), science and technology parks, technology incubators and IP marketplaces (**Table 3**). With a focus on access to physical facilities, intellectual property and/or company incubation, these models do not necessarily align well with the needs and characteristics of SHAPE ventures. That said, elements may be relevant for SHAPE commercialisation, and could be considered as options for shared SHAPE TTO services:

- **Incubation training** (rather than incubation facilities) – teaching entrepreneurial skills to academics, or using frameworks from entrepreneurship teaching to help academics hone their proposition
- **Innovation marketplace** (rather than IP marketplace) – sharing profiles of methods, tools, or other resources that can be easily downloaded and used for a license fee, and/or providing a "shop window" to SHAPE consultancy or other services
- **Innovation centres** – the University of Cambridge report noted a desire amongst academics to have a physical space, and in some cases where outputs are physical (e.g., arts) a physical shopfront be beneficial (as reported in a case study project from the University of Nottingham).

Looking specifically at spinout support, the "Independent review of university spin-out companies" report by Tracey & Williamson (2023) evaluates the role of UK universities in creating and supporting spin-out companies. There, they identify the following **spin-out ecosystem challenges**:

- Spin-out processes vary widely across universities, with inconsistent deal terms and delays in forming agreements.
- Equity stakes taken by universities are often contentious, with founders and investors preferring lower university equity to incentivise growth and investment.
- Significant disparities exist in funding and support available outside the "golden triangle" (Oxford, Cambridge, London), limiting regional growth.

Based on their research, they make several recommendations (**Table 4**), including specific suggestions for SHAPE spinout support in the UK:

- "a comprehensive offer of support [that founders] can opt in or out of"
- "easily accessible, and available through a coherent set of schemes and initiatives that founders can transition seamlessly throughout their innovation journey"

- "[requiring] stronger connections, collaborations and movement between different institutions and programmes to facilitate the scientist-to entrepreneur career transition."

- **Conclusion:** The project partners should consider these findings when developing a model for SHAPE spinout support, and whether these are still relevant to SHAPE spinouts, or if models and processes for STEM are still valid.
- **Considerations:** We welcome comments from the project partners on any implications the Spinout review could have on a SHAPE support offering, and whether any traditional models of tech transfer worth incorporating into the offering.

Table 3: Five types of technology transfer organisations (Oxentia's analysis of WIPO 2024)

Model	Description
Technology Transfer Offices (TTOs)	Technology Transfer Offices (TTOs) are typically established within universities to oversee the management of intellectual property (IP) and facilitate the transfer of knowledge and technology to industry. In some cases, TTOs are also responsible for managing collaborative research and all interactions or contractual relationships with the private sector. These offices are known by various names, such as Technology Licensing Office (TLO), Technology Management Office, Research Contracts and IP Services Office, Technology Transfer Interface, Industry Liaison Office, IP and Technology Management Office, and Nucleus of Technological Innovation. The primary purpose of establishing a TTO is to transition innovations from the laboratory to society and the marketplace, thereby enhancing the impact of research outcomes on people's lives. TTOs can achieve financial sustainability in the long term; however, experience suggests that it typically takes eight to ten years for a TTO to generate sufficient income to cover its operational costs and provide a return. As a result, financial support from the government and relevant institutions is essential during this interim period
Technology and Innovation Support Centres (TISCs)	Technology and Innovation Support Centres (TISCs) are designed to assist innovators in accessing and utilising a wide range of resources to drive innovation and technology development. These resources include patent information, scientific and technical literature, advanced search tools, and specialised databases. TISCs play a crucial role in helping innovators make more effective use of these resources to facilitate technology transfer, commercialisation, and the practical application of technologies. The TISCs programme, led by the World Intellectual Property Organization (WIPO), currently operates in over 80 countries. WIPO actively supports its member states in the establishment and development of TISCs within universities and other institutions, fostering innovation ecosystems across the globe. By offering training, capacity-building initiatives, and access to technical expertise, TISCs enhance the ability of researchers, entrepreneurs, and institutions to transform innovative ideas into market-ready solutions and contribute to sustainable development.
Science and technology parks	Science and technology parks (STPs) are dedicated areas, typically associated with universities or research institutions, that aim to foster the development and growth of resident companies. These parks provide a dynamic environment that supports technology transfer, open innovation, and collaboration between academia, industry, and government. STPs often offer state-of-the-art infrastructure, such as laboratories, office spaces, and shared facilities, alongside business support services including mentorship, funding advice, and networking opportunities.

	By facilitating interactions between researchers, entrepreneurs, and investors, these parks play a crucial role in driving innovation, advancing commercialisation, and contributing to regional economic development.
Technology incubators	Technology business incubators (TBIs) are organisations dedicated to supporting start-up companies and individual entrepreneurs in developing and scaling their businesses. These incubators provide a wide array of services designed to nurture innovation and entrepreneurship. Key offerings typically include training programmes to enhance business skills, mentorship from industry experts, networking opportunities to connect with potential partners and investors, and assistance with securing funding and investment. In addition to these core services, TBIs often offer tailored support, such as access to specialised facilities like laboratories or co-working spaces equipped with advanced technology. They also facilitate connections between start-ups and academic institutions, fostering collaborations that drive research and development.
IP marketplaces	IP marketplaces are online platforms designed to connect innovators with potential partners, clients, or investors, fostering collaboration and the exchange of intellectual property. These platforms provide a digital space for technology providers and seekers to discover opportunities, negotiate agreements, and accelerate the transfer of knowledge and innovation. One notable example is WIPO GREEN, an online platform led by the World Intellectual Property Organization (WIPO). This specialised marketplace focuses on facilitating collaboration in environmentally sustainable technologies. WIPO GREEN connects technology providers offering solutions in areas such as renewable energy, waste management, and water conservation with seekers looking to implement or invest in these innovations. The platform also provides resources to assist users in navigating the complexities of intellectual property and commercialisation.

Table 4: Summary of recommendations from the Independent Spinout Review
(Oxentia's analysis of Tracey & Williamson 2023)

Theme	Recommendations
Standardisation and Transparency	• Introduce clear, market-friendly spin-out policies across universities, including equitable and competitive deal terms. • Develop shared templates for spin-out agreements to reduce negotiation delays and foster consistency.
Enhanced Funding Mechanisms	• Increase proof-of-concept funding and align timelines for translational research funding to minimise gaps. • Expand HEIF and regional funding to ensure sustainable support for smaller institutions.
Support for Academics and Founders	• Offer flexible policies to enable academics to participate in spin-outs while maintaining university ties. • Develop training programmes to enhance entrepreneurial and commercial skills for PhD students and early-career researchers
Encouraging Regional Growth	• Strengthen regional spin-out ecosystems through shared TTOs, infrastructure investments, and collaboration with local governments.
Focus on SHAPE Spin-Outs	• Tailor commercialisation approaches to SHAPE disciplines, recognising their unique requirements and societal impacts.

3.2   What is known about "good practice" in shared TTO support?

In 2017, IP Pragmatics (now Wellspring) published a paper looking at six different structures for technology transfer offices. These included: Internal TTO, Internal TTO with external spin-out support, Wholly-owned subsidiary TTB, Part-owned subsidiary TTB, Contracted Out, Shared TTO/B. The report also highlighted the strengths and weaknesses of the shared approach (**Figure 5**).

Whilst they didn't name any specific programmes, the article did mention that the Shared TTO model exists and Europe, and that in the UK, universities collaborate to share elements of commercialisation support. The examples they highlighted included:

- SETsquared – providing acceleration programmes to academics
- CRT – commercial arm of a Cancer Research UK, which has various university and industry commercialisation project partnerships and offers acceleration and support to health innovators
- NHR Innovation Units - offering practical support for all types of healthcare innovators, from start-up to established enterprise.

Conclusion: Reflecting on the nature of these examples, it's interesting to note that these are mostly all offering training, acceleration services and guidance; and the focus on sector specific support for a few of these. It also calls back to the 2020 Aspect Learning Report (see more in the **Appendix**), which noted one of the challenges in supporting SHAPE commercialisation is the breadth of industries and applications where the research can be applied, and the difficulty in hiring individuals with that breadth of support.

Considerations: Would sector or discipline specific shared TTO support be valuable? Is sharing networks another way to address this gap?

Figure 5: Strengths and Weaknesses of Shared TTOs
(Source: Excerpt from a paper discussing UK TTO Models (IP Pragmatics 2017)

Strengths	Weaknesses
• Larger pool of TT expertise, can specialise • Reduced need for internal support • Ownership makes it easier to align goals	• Additional barrier to academic engagement • Some local resource is still required • Conflicts between aims of members need careful management (especially if these change)

Shared approaches allow a group of like-minded universities to provide a wider service than the individual members would be able to deliver alone. This is easier to coordinate if the sharing is local/regional, but still does not do away with the need for local interfaces with the research base.

3.2.1   Challenges in sharing good practice

One of the 'sharing models' being explored by this project (**Box 1**) is the concept of sharing knowledge and insights across HEPs (i.e., support for professional services teams versus directly for the innovators).   A study by De Beer et al. (2017), set out to evaluate whether an existing model for measuring the performance of a TTO (The Maturity Model) could also be improved to enable practice-sharing between TTOs. They conducted a literature review, and survey and interview research with 54 TTOs across Europe and in the UK to validate their theory.

Some of the challenges they identified include:

- **Inefficiencies in TTOs**: Many TTOs struggle with inefficiencies due to bureaucratic barriers, cultural differences, and inadequate reward systems.
- **Diverse Environments**: A "one size fits all" approach to performance measurement fails to account for the contextual differences in universities and TTOs.
- **Barriers to Best Practice Sharing**:
  - Lack of clarity on TTO performance.
  - Cultural and organisational differences between institutions.
  - Limited understanding of how to adapt best practices to local contexts.

The concept behind their proposal is that by understanding the maturity of each other's technology transfer organisations, this will help facilitate best practice sharing by enabling each organisation to identify where they are "mature" or have areas of best practice to share. They propose the following steps:

- **Identifying** practices to share using detailed self-assessments (see **Figure 6**).
- **Characterising** practices and their contexts to ensure relevance.
- **Implementing** practices in new settings while addressing challenges.
- **Reviewing** outcomes and refining processes.
- **Routinising** practices to embed them in institutional culture.

Conclusion: This article suggests that self-assessments can help TTOs identify how to best support each other and share best practice.

Considerations: Is this theory valid for our purposes? If so, what might a self-assessment tool for SHAPE TTOs look like? How might this differ to (or complement) the maturity models presented in **section 2.3** of this report?

Figure 6: Self Assessment Tool for Assessing TTO maturity (De Beer et al., 2017)

Rank	Linkert Scale						Survey
		Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Weight (%)
	Human resource						
1	At least one staff member has the expertise to manage the licencing portfolio as a set of options					4	80
2	TTO has sufficient number of staff					3.9	7.8
3	At least one member of staff has marketing experience					3.6	72
	IP Strategy and policy						
1	A clear, transparent and consistent vision for technology transfer, with strategic goals and priorities					4.15	83
2	Frequent and reciprocated involvement with faculty					3.85	77
3	Sufficient resource allocation to TTO					3.75	75
4	Provide education to overcome informational and cultural barriers between TTO and faculty					3.25	65
5	Incentives for faculty to disclose					3.2	64
6	Royalty shares for faculty					3.05	61
7	Incentives for TTP staff					2.75	55

	Networking					
1	TTO has personal relationships with faculty				3.95	79
2	Formal and/or informal networking between faculty and TTO				3.5	70
3	TTO facilitates formal and/or informal networking between scientists				3.1	62
	University-Industry Links					
1	TTO understands the needs of industry				4.45	89
2	TTO facilitates formal and/or informal networking between faculty and industry				4	80
3	Provide education to overcome informational and cultural barriers between TTO and industry				3.2	64
	Technology					
1	Most technologies disclosed to TTO is not at an early stage				2.7	54
2	Most faculty members who disclose are Professors				1.65	33
	Organisation design and structure					
1	A business incubator is available for faculty				3.35	67
2	TTO has been established for ten years or more				2.8	56
3	TTO has a decentralised management style				2.65	53
4	University has a medical school				2.55	51
5	TTO is positioned externally to the University				2.5	50
6	University is publicly owned				1.95	39

3.2.2   Lessons learned from shared STEM TTOs

Examples of shared TTO services that were suggested for this review come from France and Ireland, as well as one of several UK examples.

3.2.2.1   UK: Midlands Innovation

Midlands Innovation is a successful outcome of one of the past editions of of Connecting Capability Fund (CCF) impact project "Midlands Innovation Commercialisation of Research Accelerator (MICRA)." All CCF impact projects aimed at supporting the link of higher education sector and industry by: sharing good practice and capacity across higher education institutions, facilitating external technological, industrial and regional partnerships, as well as delivering the government's Industrial Strategy aims.

The project was an alliance of eight Midlands Innovation (MI) universities: University of Birmingham, Aston University, Cranfield University, Keele University, University of Leicester, Loughborough University, University of Nottingham, and University of Warwick. It aimed at establishing the UK's largest formal technology transfer office collaboration by building a shared knowledge exchange network and access alliance's collective IP resources. It is currently a research and innovation partnership with total contribution of £10 billion to the UK economy.

As part of this CCF funding opportunity, Midlands Innovations (previously Midlands Innovation Commercialisation of Research Accelerator: MICRA), alongside Northern Gritstone University Partnership, Aspect, SET-Squared scale-up programme, Northern Accelerator, and other collaborative initiatives received support to develop their activities to enhance collaboration between the higher education and commercial sectors, which are later described in **Chapter 4, Profiles of Other Shared University Offerings.**

3.2.2.2   France: Technology Transfer Acceleration Service (SATTs)

The Societes d'Acceleration du Transfert de Technologies (SATT) is an association of 13 Regional Technology Transfer offices, which operate under a Hub-and-Spoke Model. They offer support to HEPs in their region, while sharing central funding and some processes/ communications.

The SATT model is an example of a Hub-and-Spoke model, whereby separate private technology transfer companies provide services to universities and research organisations regionally, but with shared branding, communications and a board of directors. **Figure 7** shows some excerpts from the SATT website about their commercialisation services for academics, how they position their offer ("solutions") for industry, and some recent statistics on their impact and outputs to date.

The SATTs were originally formed in 2012-2014, "with the purpose of generating the value of public research, stimulating the transfer of their results vis-à-vis the socioeconomic world, supporting both project maturation and industrial competitiveness through innovation" (Alves Baptista 2019.)

Today, the SATTs act as intermediaries between academia and industry, identifying research with high market potential and facilitating its transfer through licensing, start-ups, and industrial partnerships. The SATTs advertise services for Established under the Programme d'Investissements d'Avenir (PIA), SATTs are designed to stimulate the commercialisation of public research outcomes and support economic competitiveness.

Focus areas include health, environment, education, cultural heritage, and engineering. Services span proof of concept, patent development, clinical trials, and business support. The network includes 13 SATTs across France, employing over 450 technology transfer professionals.

Since their inception, SATTs have generated significant outputs (Alves Baptista 2019):

- Over 11,600 market opportunities identified.
- 2,596 patents filed and 841 licences approved.
- Support for 370 innovative companies and the creation of 1,361 highly skilled jobs.

According to a report on the model, the SATT model mitigates barriers such as the complexity of intellectual property (IP) management, lack of industrial connections among researchers, and administrative bottlenecks. It fosters collaboration and builds trust between universities and external stakeholders through dedicated governance structures and advisory boards (Alves Baptista 2019). Although we could not find any literature on "lessons learned" from the SATTs model, a 2016 presentation from one of the SATTs highlighted the following as the aims and benefits of the model:

- Reduce fragmentation of TT system
- Improve operational efficiency
- Foster absorption of technologies by companies (SMEs) through Proof-of-Concept funding
- Create competitiveness, jobs and wealth out of public research

One of example of SATT Network members is Erganeo focusing on identifying and maturing inventions with strong societal impact. Its activities span multiple fields, including life sciences,

digital innovation, and cultural heritage. Erganeo has facilitated partnerships with prominent institutions like the Pasteur Institute, Curie Institute, and major hospitals in Paris.

Figure 7: SATT services, solutions, and impact (SATT Network Website, 2024 https://www.satt.fr/investisseurs/)
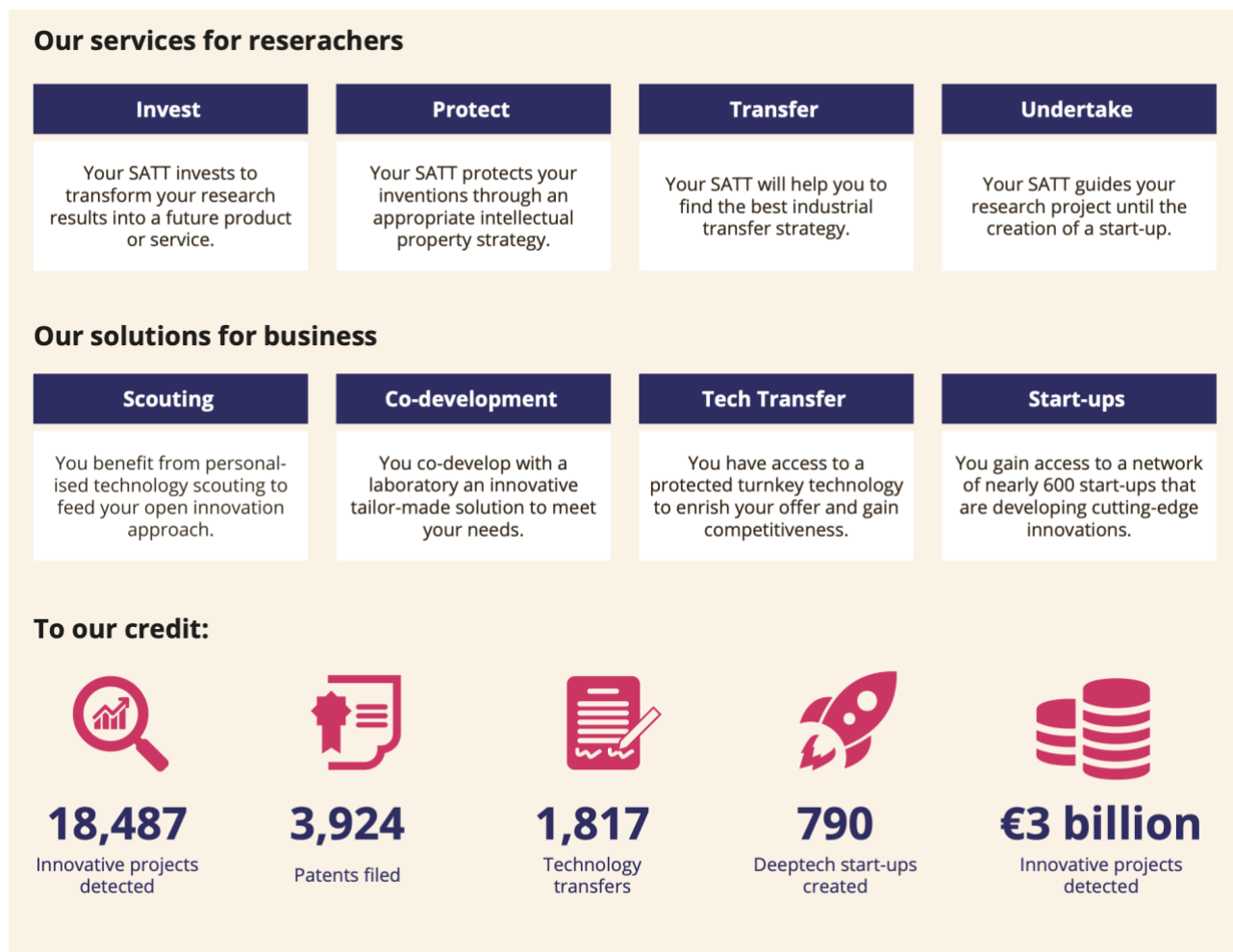
3.2.2.3 Ireland: Dublin Regional Innovation Consortium, Bridge Network, and the Technology Transfer Strengthening Initiative

Knowledge Transfer Ireland (KTI) was created in 2013 as the national support for knowledge transfer activities in Ireland. It was an outcome of Technology Transfer Strengthening Initiative (TTSI) set up in 2007 aimed at creating a professional technology transfer system across Ireland's public research institutions. Currently, KTI a central point of reference for research commercialisation and industry-academia partnerships. It is supported by Enterprise Ireland and Irish Universities Associations.

The Technology Transfer Strengthening Initiative 2 (TTSI2) ran from 2012-2016 with €22.6 million programme of funding from Enterprise Ireland. During this time, they conducted a workshop with over 50 TT professionals in Ireland, who shared their insights on best practice emerging from the consortia (KTI Report 2015). Some of the highlights which may be relevant to this CCF-RED project include:

- It's important to progress both on delivering a TT service, as well as establish a culture of commercialisation with high levels of trust between case managers and researchers.
- Make sure to have legally binding consortium agreements at the start of collaboration to align on the expectations and be able to track progress.

- TT members are seeing a cultural change, it's important that local TT staff take time to build relationships with researchers and that case managers are embedded in the research community by being physically present at the institutions.

Table 5 contains a summary of the "best practice" findings from the KTI report, and we provide more information on the workings of this both the French and Irish model **section** Error! Reference source not found..

Other potentially relevant examples of shared TT initiatives in Ireland are Dublin Regional Innovation Consortium (DRIC) and the Bridge Network:

- Dublin Regional Innovation Consortium (DRIC) is a consortium headed by TU Dublin, IADT, and DIAS. As part of their activities, they run events and workshops on IP, commercialisation, invention disclosure support, licensing, and providing advice to their members. They assisted in commercialising cutting-edge technologies from their member institutions, as well as winning high-profile TT licenses with SONY, Microsoft and Bausch & Lomb. Further publicly available information about consortium's activities or operations is limited, so it would be worth exploring their model through interviews with consortium members.
- Bridge Network is a technology transfer consortium of the following TTO offices from University College Cork, Cork Institute of Technology, Teagasc, and the Institute of Technology Tralee. It was established in 2017 and it's Ireland's biggest TT consortium funded by Enterprise Ireland through KTI-managed TTSI3 programme. The aim is to share resources and knowledge transfer expertise among consortium members by encoring invention disclosure, protecting and managing the IP, supporting technology development and the licensing process, as well as the early growth of spinouts.

Table 5: Summary of best practice in technology transfer consortia (Oxentia's analysis of the KTI Report 2015)

Theme	Description
General Insights	• Access to expertise in technology transfer (TT) is the primary benefit, with lead TTOs providing tools like contracts, non-disclosures, licensing agreements, and templates. This allows consortium partners to act as if they have a large TTO. • Effective relationships, especially between case managers and researchers, are crucial, fostering trust and collaboration. • Training through seminars and in-house events supports innovation, entrepreneurship, and spin-out development.
Consortium Strategy and Operations	• Legally binding consortium agreements clarify expectations and enable progress tracking. • Researchers increasingly view their work within a commercial framework. • Research teams must engage potential clients early to shape commercial opportunities. • Case managers stationed onsite at partner institutions enhance researcher relationships and provide ongoing support.
Managing Large Consortia	• Clearly defined roles for licensing, liaison, and administrative staff streamline operations. • Centralised negotiation processes at lead TTOs, followed by partner-level reviews, work effectively. • Centralised marketing functions at lead partners help in technology promotion and outreach. • Building trust with researchers and ensuring local accessibility of TTO representatives are vital.

Regional Consortium Delivery	• Emphasising mutual benefits over dominance ensures collaboration. • Direct engagement is key to aligning researchers with consortium goals. • Sharing documentation and adopting uniform practices help streamline operations. • Supporting strong local industry ties without disrupting existing relationships is important.
Adding Value	• Academic staff increasingly engage in research by dedicating time outside teaching responsibilities. • Industry-focused projects benefit significantly from established TTO frameworks. • Growing expectations from researchers require additional support, such as dedicated analysts. • Reporting requirements can be cumbersome, particularly for consortium leads, and partners desire direct communication from funding agencies.

Conclusions: France's SATT network operates under a hub-and-spoke model, aiming to reduce fragmentation, improve efficiency, support SME technology adoption, and drive economic growth from public research. In contrast, Ireland's Knowledge Transfer Ireland (KTI) functions as a national hub for research commercialisation and industry-academia partnerships has provided funding for various technology transfer strengthening initiatives that have led to different consortium models. These have led to learnings about the importance of trust-building, cultural shifts towards commercialisation, and the need for legally binding consortium agreements.

Despite limited information on the operational aspects of both Irish consortia and French SATT, we observe significant value in them operating together, sharing resources, and addressing common challenges.

Considerations: How to make sure that TTO staff is embedded in the research community? What are ways of building trust and relations with academics on a daily basis?

3.2.3   Lessons from a study on shared TTO models

Following the initial publication of this literature review, the consortium partners uncovered another article on shared technology transfer models (Stevens et al, 2022). The report looks at multi-institutional tech transfer offices (MiTTOs), answering questions on the number and type, how long they operated, how they were funded, benefits and challenges. The authors identified 35 MiTTOs in the report, including 13 National tech transfer offices (NTTOs), 17 Regional tech transfer offices (RTTOs), and 5 National networks of multi-institutional TTOs (NMiTTO).

The authors' summary conclusions were as follows:

- "In major ecosystems, MiTTOs tend to play an important role in kick starting tech transfer in the ecosystem and then be superseded by individual institutional TTOs.
- NTTOs appear to have an on-going role in smaller ecosystems.
- The newest model is coordinated networks of MiTTOs covering a whole country.
- Revenue sharing appears to have gone out of favor as a funding model for institutions because it is not seen as a reliable way to fund TTOs.
- Some of the stable, on-going MiTTOs are using an internal, self-funding model."

The following pages contain the summary data tables from the articles, which shows which MiTTOs they looked at, how long they were in operation, how they were funded, the benefits and challenges.

Conclusions: We note that there are fewer cited benefits than challenges; many of the organisations had a limited lifespan; the "sharing models" included other functions than just the delivery of TT services (i.e., supporting training or other activities to build awareness or pipelines). The article also prompts reflections on whether the benefits cited could be delivered via existing mechanisms (i.e., like Aspect or other consortiums), or whether a shared model is required.

Figure 8: List of MiTTO Organisations (Source: Stevens et al., 2022)

Key Dates of MiTTO Operations	Precurser	Start	End of TT	End	Duration
Single NTTOs					
Research Corporation / RCT, US	1912	1937	2009		72
Canadian Patents and Development Limited (CPDL)		1947		1990	43
National Research Development Corporation/BTG, UK		1949	1985	2020	36
University Patents, Inc, US		1964		2010	46
ANVAR, France		1967	1979	2005	26
University Technology Corporation, US		1986		1989	3
University Science Engineering and technology, Inc, US		1986		1990	4
Biotechtra, Switzerland		1996	1999		3
Tech Link, US		1996			26
Officiana de Transferencia de Resultados de Investigatión, Chile		2005		2011	6
Ascenion GmbH, Germany		2001			21
UNIVALUE, Spain		2011		2015	4
National Center for Technology Transfer, Bulgaria		2022			0
Network of MiTTOs					
PVAs, Germany		2001			21
Norwegian network		2004			18
Sociétés d'Accélération du Transfert de Technologies, France		2011			11
Chilean Technology Transfer Hubs		2016			6
DBT Network, India		2020			2
RTTOs					
Washington Research Foundation, US		1981	1992		11
Triangle Universities Licensing Consortium, US		1988		1995	7
Unitectra, Switzerland		1999			23
Technology and Innovation Management Pty Ltd, Australia	1984	1990	1998	2013	8
Tahoku Techno Arch, Japan		1998			24
Consorci de Transferencia de Coneixement, Spain		2004		2010	5
C4 Ontario, Canada		2005		2010	5
UniQuest, Australia	1996	2005	2013		8
Innovation Office West, Sweden		2009			13
Innovation Office Fyrklövern, Sweden		2009			13
Serbian innovation Fund		2011			11
Eastern Cape RTTO, South Africa	2007	2011		2014	3

ZwaZulu-Natal RTTO, South Africa		2014		2019	5
Puerto Rico Science, Technology and Research Trust TTO	2004	2017			5
Axelrys, Canada		2020			2

Figure 9: Data on MiTTO Organisations, plus benefits and challenges (Source: Stevens et al., 2022)

Number of MiTTOs by Country

Country	Number of MiTTOs
US	8
Canada	4
Australia	2
Chile	2
France	2
Germany	2
Japan	2
South Africa	2
Spain	2
Sweden	2
Switzerland	2
Bulgaria	1
India	1
Norway	1
Serbia	1
UK	1

Number of Years MiTTO Organisations were in Operation

	NTTO	RTTO	NMiTTO
Number	13	17	5
Min	3	2	2
Max	72	24	21
Average	26	11	12
Median	26	8	11

Funding Models Used by MiTTOs

External	17
Internal	5
Royalty share	6
Not available	2
External plus Royalty	5

Benefits of MiTTOs

Kick-starts member institutions in commercialisation
Establishes a pro-commercialisation culture immediately
Provides critical mass of personnel and resources
Provides access to a greater skill set than individual member institutions could afford/justify
Makes services available at no or reduced cost to member institutions, reducing barrier to entry
Allows for aggregation of complementary technologies from different sources
Provides a focal point for lobbying the importance of tech transfer to government at an early stage

Challenges Encountered by MiTTOs

Category	Issue
Financial	Scheduled expiration of funding
	Unscheduled loss of funding
	Insufficient external funding to support operations
	Member institutions resent MiTTOs retained revenue share
Strategic	Control – a natural transition from and external MiTTO to individual in-house TTOs
	Lack of commitment to commercialisation by member institutions

	Change in member institutions objectives with respect to commercialisation	
	Unrealistic expectations by member institutions of the timelines for commercialisation success	
Operational	Member institutions' researchers feel inadequate attention from MiTTO	
	MiTTO perceived as too selective in disclosures pursued/rejected	
	Institutions keep the best disclosures to market themselves and send inferior ones to MiTTO	
	Inadequate effort in training researchers, promoting commercialisation and seeking out inventions	
Cultural	Competition between MiTTO and research office established at member institutions	
	Conflict of values, culture and priorities between MiTTO and member institutions	
	MiTTO too remote geographically from member institutions	
	Inadequate communication from MiTTO to member institutions	
	Member institutions feel inadequate ability to input into MiTTO personnel and operational choices	
	Personnel in MiTTO lack pertinent qualifications and appropriate attitudes	
	Researchers uncomfortable dealing with an external entity	

4. Profiles of Other Shared University Offerings

As part of this review, we have looked at a range of different university shared support offerings. Whilst there were only a few we identified focussed specifically on technology transfer, we also reviewed other offers related to business engagement, support to SMEs and regional development, and acceleration of research outputs and other training and support.

The two technology transfer shared services, are the model from Dublin and France, mentioned in the previous chapter. Northern Accelerator, ImpactU, SETsquared Partnership, and Danish Open Entrepreneurship mainly offer acceleration and training, as well as opportunities for networking and collaboration for academics. Although they differ in the scope of their activities, many are partially funded from government funding (e.g., UKRI) or philanthropic foundations support (e.g., Danish Industry Foundation). Another cluster of shared offerings we profiled are Cumbria Innovations, Northern Gritstone and the MedTech SupeConnector. These initiatives were founded with the aim to promote economic development and growth in their respective regions.

We profiled three examples of shared SHAPE offerings. Aspect's Research Commercialisation Accelerator (now the UKRI SHAPE Catalyst), supports researchers in ideation and venture creation, by providing tailored training, mentorship, and resources to help translate their ideas into impactful ventures. The Creative Enterprise Programme (CEP) is a capacity-building initiative developed by Nesta in partnership with the British Council aimed at supporting creative entrepreneurs worldwide in establishing and growing their businesses across various disciplines, including arts and culture, fashion, handicrafts, publishing, and performing arts. Danish SHAPE Taskforce is an initiative collaborating across Danish universities to support and enhance commercialisation in the social sciences, humanities, and arts (SHAPE fields) and was inspired by Aspect activities. We also profiled the TenU which is about sharing tech transfer good practice across member, advocacy and some training offerings for academics. Although not SHAPE focussed, it does state societal impact as an aim.

Programmes we were made aware of but did not review because of lack of time (and the intended "light touch" nature of this report) were: Southern University Purchasing Consortium (not commercialisation specific, but may offer insights on sharing model); ZINC (building social ventures with input from research vs vice versa); Social Venture Fund Builder by SHAPE Impact Kollektiv.

Table 6 offers a snapshot of the programmes we reviewed. Following the table, we include profiles on these organisations, grouped by focus/ type. As mentioned in **section 1.2.2** on our approach these programmes were identified by Aspect members, the project partners in this CCF-RED project, and our project team's own knowledge. We did not undertake a comprehensive academic literature review.

Table 6: Summary of shared university commercialisation offerings profiled in this chapter

Name	Focus	Model	No. partners	Funding
Dublin Regional Innovation Consortia (DRIC)	Technology transfer	Consortia of National College of Ireland (NCI), Dublin Institute of Technology, ITT Dublin, IT Blanchardstown and IADT Dun Laoghaire	5	Enterprise Ireland and Knowledge Transfer Ireland under the Technology Transfer Strengthening Initiative.
Societes d'Acceleration du Transfert de Technologies (SATT)	Technology transfer services (with a focus on spinouts, startups and investment particularly in deep tech)	13 SATTs support the universities and research organisations in their region.	13	The SATTs are funded through the "Investissements d'Avenir" programme, with a dedicated investment fund of €856 million.
Northern Gritstone	Economic development and regional groups	Northern Gritstone is an independent business owned by its management team, a series of blue chip institutions, several of the largest local authority pension funds in the North of England as well as a number of high net worth individuals. The company was founded with the assistance of three prestigious universities: University of Manchester University of Leeds University of Sheffield.	3	In May 2022, Northern Gritstone announced a first close of £215 million. In October 2023, they announced announces a final close of £312m with more than £150m coming from local authority pension funds provided by South Yorkshire Pension Fund, West Yorkshire Pension Fund, Greater Manchester Pension Fund, Merseyside Pension Fund and East Riding Pension Fund.
SET Squared Partnership	Collaborative enterprise/enterprise partnership	SETsquared was founded in 2002 as a partnership between the universities of Bath, Bristol, Southampton, and Surrey. The University of Exeter joined the partnership in 2011, and Cardiff University became a member in 2023.	6	SETsquared's activities are primarily funded through a combination of sources, including: Higher Education Funding Council for England (HEFCE): Support through the Higher Education Innovation Fund. Membership Fees: Contributions from businesses participating in

				SETsquared programmes. Investment.
Cumbria Innovations	SME Support/ regional development	The Cumbria Innovations Platform is a partnership between: Lancaster University of Cumbria. The platform engages with SMEs across various sectors in Cumbria, offering support to those eligible under the European Regional Development Fund (ERDF) criteria.	2	The Cumbria Innovations Platform has received £3.4 million of funding from the England European Regional Development Fund as part of the European Structural and Investment Funds Growth Programme 2014-2020.
ImpactU	Social venture collaboration	A collective/consortium of UK universities working collaboratively to support and raise awareness of mission-driven businesses emerging from our ecosystems. Spearheaded by Oxford University Innovation (OUI). The London School of Economics' commercialisation team, LSE Innovation, co-leads the project's training and knowledge dissemination efforts.	5 lead partner universities & 15 member universities	Funded by Research England, UKRI; has recently secured £1.5m from UKRI Connecting Capability Fund's "Seed Funding, Training, and Support for Social Ventures."
TenU	Practice Sharing and advocacy (focus on social impact from commercialisation)	Collaboration of ten leading technology transfer offices (TTOs) in the United Kingdom, the United States, and Belgium.	10	TenU is funded by Research England; in 2022 announced £4 million in funding. The funding includes a £2.5 million grant from Research England, endorsed by the Department for Business, Energy and Industrial Strategy (BEIS).
Creative Enterprise Programme (CEP)	Capacity-building programme	A practical capacity-building programme that supports creative entrepreneurs by Nesta in	2	The development and delivery of CEP were funded by Nesta and the British Council during their active

		active partnership with the British Council.		partnership, which concluded in June 2020. Post-2020, the programme continues to be delivered around the world, with funding arrangements varying based on local partnerships and resources.
Aspect Translational Impact Acceleration Hub (TIAH)	Shared support and capacity building	Consortiaum, combining resources and testing new solutions among the following Aspect members: University of Bristol, University of Cardiff, University of Surrey, University of Sussex, University of York, University of Exeter	6	Aspect funding
Northern Accelerator	Academic entrepreneurship accelerator/ collaboration	Durham University Newcastle University Northumbria University Sunderland University Teesside University University of York	6	UKRI funding, universities' contributions and own Northern Accelerator Seed Investment Fund and Venture Capital Fund.
Midlands Innovation (previously Commercialisation of Research Accelerator: MICRA)	Research and innovation partnership	University of Birmingham Aston University Cranfield University Keele University University of Leicester Loughborough University University of Nottingham University of Warwick	8	UK Research and Innovation (UKRI) and the Industrial Strategy Challenge Fund.

4.1 Shared Technology Transfer Models

4.1.1 DRIC: Dublin Regional Innovation Consortium

DRIC: Dublin Regional Innovation Consortium (Ireland)	
Description	The Dublin Regional Innovation Consortium (DRIC) is a collaborative initiative aimed at facilitating the commercialisation of research outputs from its member institutions. It provides support in areas such as intellectual property management, licensing, and the

	establishment of start-ups, thereby bridging the gap between academic research and industry application.
Founding organisations	DRIC was established with the support of Enterprise Ireland and Knowledge Transfer Ireland under the Technology Transfer Strengthening Initiative.
Member organisations	• Technological University Dublin (TU Dublin) • Institute of Art, Design and Technology (IADT) • Dublin Institute for Advanced Studies (DIAS) • National College of Ireland (NCI) • Institute of Technology Blanchardstown • Institute of Technology Tallaght
Offerings	As part of their activities, they run events and workshops on IP, commercialisation, invention disclosure support, licensing, and providing advice to their members.
Funding	DRIC's activities are primarily funded through the Technology Transfer Strengthening Initiative, supported by Enterprise Ireland and Knowledge Transfer Ireland.
Link	N/A

4.1.2   Midlands Innovation (UK)

Midlands Innovation (UK)

Description	Midlands Innovation is a strategic partnership of leading universities in the Midlands region of the UK, dedicated to driving regional and national economic growth through research, innovation, and collaboration. It aims to accelerate the transfer of knowledge and technology from academic research into commercial and societal impact.
Founding and member organisations	University of Birmingham Aston University Cranfield University Keele University University of Leicester Loughborough University University of Nottingham University of Warwick
Offerings	o Collaboration opportunities for R&D o Tailored innovation support o Research commercialisation support o Facilitating industry partnerships, engagement, and networking o Skills development o Access to research facilities
Funding	Through initiatives like UK Research and Innovation (UKRI) and the Industrial Strategy Challenge Fund.

Link	https://midlandsinnovation.org.uk/

4.1.3 The SATT Network (France)

The SATT Network (France)	
Description	The SATT Network (Sociétés d'Accélération du Transfert de Technologies) is a collective of 13 Technology Transfer Acceleration Companies in France. Established to enhance the economic impact of scientific innovations from public research, the SATTs provide companies with high-potential technological solutions to improve their competitiveness.
Founding organisations	The SATTs were created under the French government's "Investissements d'Avenir" (Investments for the Future) programme, with the objective of professionalising and streamlining the transfer of innovations from public research to the business sector.
Member organisations	The SATT Network comprises the following 13 entities: SATT Paris-Saclay Toulouse Tech Transfer SATT Lutech Aquitaine Science Transfert SATT Nord SATT Conectus SATT Linksium SATT Pulsalys SATT AxLR SATT Sud-Est SATT Ouest Valorisation SATT Sayens SATT Erganeo
Offerings	The SATTs offer a range of services to facilitate the transfer of technology from public research to industry: Technology Maturation: Investing in the development of research outputs to enhance their market readiness. Intellectual Property Management: Protecting and managing intellectual property rights to ensure optimal commercial exploitation. Business Development: Connecting researchers with industry partners to foster collaborations and licensing agreements. Startup Support: Assisting in the creation and growth of startups based on public research innovations.
Funding	The SATTs are funded through the "Investissements d'Avenir" programme, with a dedicated investment fund of €856 million. This funding enables them to finance the technological development of innovations from French public research, bearing the associated technological and financial risks.
Link	Réseau SATT

4.2   Acceleration, Training and Funding

4.2.1   Northern Accelerator

Northern Accelerator (UK)	
Description	Northern Accelerator is a collaboration between the North East's universities that aims to help world-leading research make real-world impacts by commercialising innovation. This will in turn boost the region's economy.
Founding & member organisations	Durham University Newcastle University Northumbria University Sunderland University
Member organisations	Durham University Newcastle University Northumbria University Sunderland University Teesside University University of York
Offerings	o Providing training to help recognise and exploit intellectual property o Offer funding for academics to take high-quality research projects closer to commercialisation o Focussed scale up support for existing spin-outs from our partner universities o Provide a pool of experienced and talented business executives to match to opportunities to lead university spin-outs o Have an investment fund of seed capital to help spin-outs validate business models and demonstrate value to investors o Provide an ongoing venture fund for university spin-outs
Funding	UKRI funding, universities' contributions and own Northern Accelerator Seed Investment Fund and Venture Capital Fund.
Link	https://northernaccelerator.org/

4.2.2   ImpactU (UK)

ImpactU (UK)	
Description	ImpactU is a collaborative initiative among UK universities aimed at supporting and promoting mission-driven businesses emerging from academic environments. The programme offers training to universities and provides funding to pre-seed social ventures originating from English institutions. It focuses on accelerating the development of projects that address health, wellbeing, societal, and environmental challenges. ImpactU's training, led by the London School of Economics (LSE), is accessible across the UK, providing learning and support to founders and universities. Additionally, the ImpactU Pathfinder Award aims to accelerate companies towards investment or growth. The initiative is supported by lead partner universities, including the University of Cambridge, Coventry University, the University of Northampton, and the University of Oxford, along with several member universities

Founding organisations	ImpactU was established through a consortium of academic institutions, spearheaded by Oxford University Innovation (OUI). The London School of Economics' commercialisation team, LSE Innovation, co-leads the project's training and knowledge dissemination efforts.
Member organisations	University of Oxford London School of Economics Coventry University University of Northampton University of Cambridge Aston University University of Birmingham Cranfield University Keele University University of Leicester Loughborough University University of Nottingham The University of Warwick The University of Exeter The University of York University of Bristol Anglia Ruskin University University of Birmingham University of Reading University of Liverpool

Offerings	ImpactU delivers a range of services to foster social entrepreneurship within the university sector:
	
	   o Training Programmes: Led by the London School of Economics (LSE), these programmes are available across the UK, offering learning and support to founders and university staff.
	   o Pathfinder Awards: These awards provide pre-seed funding to social ventures associated with English universities, aiming to accelerate companies towards investment or growth.
	   o Knowledge-Sharing Ecosystem: In partnership with organisations like Social Tech Trust and the School for Social Entrepreneurs, ImpactU facilitates the dissemination of insights and expertise to budding entrepreneurs and founders.

Funding	ImpactU is funded by Research England, a council within UK Research and Innovation (UKRI) that oversees higher education research and knowledge exchange in England. This funding enables ImpactU to deliver training programmes and provide pre-seed funding to social ventures associated with English universities.
Link	ImpactU	A Social Venture Collaboration

4.2.3   Open Entrepreneurship (Denmark)

Open Entrepreneurship (Denmark)	
Description	Open Entrepreneurship is a Danish initiative designed to bridge the gap between academic research and industry by fostering collaborations between university researchers and experienced entrepreneurs. Its primary objective is to transform world-class research into successful commercial ventures, thereby enhancing the economic impact of academic innovations.

	As part of activities targeted at SHAPE commercialisation, OE has supported and facilitated the creation of a national SHAPE Taskforce that collaborates across Danish universities to support and enhance commercialisation in the social sciences, humanities, and arts (SHAPE fields). SHAPE Taskforce was inspired by Aspect Network.
Founding organisations	Open Entrepreneurship was established through a collaborative effort involving several Danish universities and industry partners. The initiative is supported by the Danish Industry Foundation, which has provided substantial funding to facilitate its operations.
Member organisations	The initiative encompasses eight Danish universities: Aalborg University Aarhus University Copenhagen Business School IT University of Copenhagen Roskilde University Technical University of Denmark University of Copenhagen University of Southern Denmark Additionally, the University of California, Berkeley, serves as a strategic partner, contributing its expertise to the programme.

Offerings	Open Entrepreneurship provides several key services to facilitate the commercialisation of academic research:
	
	   o Facilitation of Collaborations: The programme connects university researchers with external entrepreneurs and intrapreneurs, fostering partnerships that drive the development of research-based start-ups.
	   o Support from Idea to Start-up: It offers guidance throughout the journey from initial concept to the establishment of a start-up, ensuring that innovative ideas are effectively transformed into viable businesses.
	   o Access to Networks: Participants gain entry to a broad network of industry professionals, investors, and mentors, providing valuable resources and support for emerging ventures.

Funding	The Danish Industry Foundation has been a significant supporter of Open Entrepreneurship, providing funding to enable its activities. The foundation's investment underscores the importance of fostering innovation and entrepreneurship within Denmark's academic and industrial sectors.
Link	Front page - Open Entrepreneurship

4.2.4   SETsquared Partnership (UK)

SETsquared Partnership (UK)	
Description	The SETsquared Partnership is a collaborative enterprise between six leading research-intensive universities in the United Kingdom: Bath, Bristol, Cardiff, Exeter, Southampton, and Surrey. Established in 2002, it aims to support the growth and success of new businesses by providing world-leading incubation support services, enterprise activities, and access to investment networks.

Founding/member organisations	SETsquared was founded in 2002 as a partnership between the universities of Bath, Bristol, Southampton, and Surrey. The University of Exeter joined the partnership in 2011, and Cardiff University became a member in 2023.
	The current member universities of the SETsquared Partnership are:
	University of Bath University of Bristol Cardiff University University of Exeter University of Southampton University of Surrey
Offerings	SETsquared provides a comprehensive range of services to support entrepreneurs, start-ups, and scale-up companies across various high-tech and high-growth sectors: ○ Business Incubation and Acceleration: Tailored programmes to help ventures validate ideas, build teams, secure funding, and launch investor-ready businesses. ○ Mentoring and Support: Access to industry specialists, experienced entrepreneurs-in-residence, and seasoned investors who offer strategic coaching and guidance. ○ Investor Readiness and Introductions: Assistance in developing business plans, investment strategies, and connections with local funds and angel investment groups. ○ Flexible Office Space: Affordable office spaces within vibrant entrepreneurial communities, offering 24/7 secure access and a full range of office support and resources. ○ Access to Training and Events: Opportunities to participate in workshops, seminars, and events designed to enhance business skills and knowledge.
Funding	SETsquared's activities are primarily funded through a combination of sources, including: ○ Higher Education Funding Council for England (HEFCE): Support through the Higher Education Innovation Fund. ○ Membership Fees: Contributions from businesses participating in SETsquared programmes.
Link	SETsquared Partnership	the University Enterprise Collaboration

4.3   Practice Sharing

4.3.1   TenU (International)

TenU (International)	
Description	TenU is an international collaboration of ten leading technology transfer offices (TTOs) from prominent research-intensive universities in the United Kingdom, the United States, and Belgium. Established to share effective practices in research commercialisation, TenU aims to enhance the societal impact of academic research by facilitating knowledge exchange and collaboration among its members.
Founding & Member organisations	University of Cambridge (UK) Columbia University (USA) University of Edinburgh (UK) Imperial College London (UK) KU Leuven (Belgium) University of Manchester (UK) MIT (USA)

	University of Oxford (UK) Stanford University (USA) UCL (UK)
Offerings	TenU provides a platform for member institutions to collaborate on various aspects of technology transfer, including: ○ Sharing best practices and case studies to improve commercialisation processes. ○ Organising workshops, seminars, and conferences to facilitate knowledge exchange. ○ Engaging with policymakers to inform and influence innovation and commercialisation policies. ○ Publishing reports and guidelines to support effective technology transfer activities.
Funding	TenU's activities are supported through contributions from its member institutions. Additionally, it has received funding from external sources, such as UK Research and Innovation (UKRI) Research England, to support specific initiatives and projects aimed at enhancing technology transfer practices and policies. TenU is hosted by Cambridge Enterprise.
Link	TenU

4.4   Economic Development, SME Support, Investment

4.4.1   Cumbria Innovations (UK)

Cumbria Innovations Platform (UK)	
Description	The Cumbria Innovations Platform is a collaborative initiative aimed at bolstering economic growth in Cumbria by providing micro, small, and medium-sized enterprises (SMEs) with a competitive edge. It offers a diverse range of support services, combining the expertise of various departments from Lancaster University and the University of Cumbria to deliver tailored business assistance.
Founding organisations	The Cumbria Innovations Platform is a partnership between: Lancaster University University of Cumbria
Member organisations	The platform engages with SMEs across various sectors in Cumbria, offering support to those eligible under the European Regional Development Fund (ERDF) criteria. While specific member organisations are not listed, the initiative has assisted numerous enterprises in the region.
Offerings	The platform provides several fully-funded opportunities to support business innovation: ○ Innovation Masterclasses and Events: These sessions are designed to help business leaders gain the tools to shape innovative ideas, covering the entire process from concept through to commercialisation. ○ Innovation Catalyst Programme: A six-month peer-network programme specifically designed for senior decision-makers of Cumbria-based SMEs. It offers workshops, masterclasses, and interactive group challenges to explore emerging trends and innovation opportunities.

	o Access to Unique Facilities: Businesses can utilise a variety of science and technology facilities, including specialist equipment, laboratories, and workshops, to support the development and prototyping of new products and processes. o Digital Product Design: The platform offers digital consultancy to businesses keen to diversify and explore new business models that leverage data and digital technology. This includes analysing business processes to identify underused data and developing digital prototypes to assess feasibility
Funding	The Cumbria Innovations Platform has received £3.4 million of funding from the England European Regional Development Fund as part of the European Structural and Investment Funds Growth Programme 2014-2020. This funding supports the platform's mission to boost economic growth by assisting SMEs in developing and commercialising new products and services.
Link	Cumbria Innovations Platform (CUSP II) University of Cumbria

4.4.2   MedTech SuperConnector

MedTech SuperConnector (UK)	
Description	The MedTech SuperConnector (MTSC) supports early-career researchers in developing and commercializing medical technologies. Backed by Imperial College London, it offers a six-month program combining entrepreneurial training, mentorship, funding access, and industry connections. The initiative aims to accelerate impactful healthcare innovations from R&D to patient care, focusing on areas like AI diagnostics and therapeutic devices. MTSC works with partners across the MedTech ecosystem to drive innovation, shorten development timelines, and enhance healthcare outcomes. The MedTech SuperConnector (MTSC) aligns with SHAPE commercialisation by providing a pathway to translate medical technology innovations, often incorporating insights from the social sciences, into market-ready products. While its primary focus is on MedTech, the initiative's structure—mentorship, funding, and training—supports the broader SHAPE objective of transforming research into impactful societal applications. MTSC's focus on tackling healthcare challenges with innovative solutions reflects SHAPE's aim to deliver social value and enhance human well-being through practical, research-driven advancements.
Founding & member organisations	The member organisations of MTSC include: Imperial College London (lead organisation) Queen Mary University of London Buckinghamshire New University The Francis Crick Institute The Institute of Cancer Research Royal College of Art Royal College of Music Royal Veterinary College
Offerings	Entrepreneurship Training: Over 75 hours of education covering business, regulatory, and investor readiness. o Mentorship: Tailored one-on-one guidance from industry experts. o Funding: Opportunities for investment, including up to £100,000 through partner programmes. o Networking: Access to a wide network of industry professionals and fellow innovators.

	o Specialised Tracks: Focused programmes like the MSK Innovation Accelerator.
Funding	MTSC received initial funding of nearly £5 million from Research England's Connecting Capability Fund in 2018. In 2021, the programme was awarded an additional £3.44 million in follow-on funding from Research England to expand its model to institutions across the UK.
Link	MedTech SuperConnector	An annual programme to educate and support early stage MedTech businesses

4.4.3   Northern Gritstone (UK)

Northern Gritstone (UK)	
Description	Northern Gritstone is an investment company supporting technology and IP-rich startups in the North of England, aiming to build a "Silicon Valley of the North." Founded by the Universities of Manchester, Leeds, and Sheffield, it focuses on deep tech and life sciences, backing businesses that combine profit with purpose. Through long-term partnerships and funding, it promotes economic development and high-skilled job creation in the region.
Founding organisations	The company was founded with the assistance of three prestigious universities: University of Manchester University of Leeds University of Sheffield
Member organisations	Northern Gritstone is an independent business owned by its management team, blue-chip institutions, several large local authority pension funds in the north of England, and high-net-worth individuals. The founding university partners each hold a small shareholding in the company.
Offerings	Northern Gritstone provides financial investment and strategic support to early-stage companies emerging from academic research. Its goal is to develop these enterprises into world-class businesses, delivering attractive returns to shareholders while fostering positive societal and economic impact.
Funding	In May 2022, Northern Gritstone announced a first close of £215 million, indicating strong interest from investors in its proposition.
Link	Northern Gritstone

4.5   SHAPE Support Programmes

4.5.1   Nesta's Creative Enterprise Programme (CEP) (UK)

Nesta's Creative Enterprise Programme (CEP) (UK)	
	The Creative Enterprise Programme (CEP) is a capacity-building initiative developed by Nesta in partnership with the British Council. It aims to support creative entrepreneurs worldwide in establishing and growing their businesses across various disciplines, including arts and culture, fashion, handicrafts, publishing, and performing arts. The programme offers practical workshops and resources to help participants develop sustainable and resilient livelihoods. Although Nesta's active partnership with the British Council concluded in June 2020, the programme continues to be delivered globally.

Founding organisations	CEP was developed by Nesta, an innovation foundation based in the United Kingdom. The programme was delivered in active partnership with the British Council until June 2020.
Member organisations	While CEP does not have formal member organisations, it has been delivered in collaboration with various local partners and associates across multiple countries. Between November 2016 and February 2020, the programme was conducted in 25 countries, reaching over 1,800 creative entrepreneurs.
Offerings	CEP provides a range of support mechanisms for creative entrepreneurs: Workshops: Three-day workshops designed to help participants explore their personal values, identify their customers, and develop comprehensive business models. Toolkit: The Creative Enterprise Toolkit, a practical resource to assist creative individuals in planning, building, testing, communicating, and launching their new creative businesses. Train-the-Trainer Component: A model that involves training local associates to deliver the programme, ensuring it is adaptable and draws on local expertise.
Funding	The development and delivery of CEP were funded by Nesta and the British Council during their active partnership, which concluded in June 2020. Post-2020, the programme continues to be delivered around the world, with funding arrangements varying based on local partnerships and resources.
Link	Creative Enterprise Programme | Nesta

4.5.2   ARC Accelerator (now UKRI SHAPE Catalyst) (UK)

ARC Accelerator (UK)	
Description	The ARC Accelerator is a leading programme designed to support researchers from the Social Sciences, Humanities, and Arts for People and the Economy (SHAPE) disciplines in transforming their research into ventures with meaningful impact. Established in 2019, ARC addresses the unique challenges faced by SHAPE researchers in commercialising their work, offering tailored guidance to bring innovative ideas to market.
Founding organisations	ARC was co-founded in 2019 by Chris Fellingham, Sam Gallagher, and Tony Walker. It operates under the Aspect network, and delivers the UKRI SHAPE Catalyst programme
Member organisations	ARC works in collaboration with various research organisations and universities across the UK.
Offerings	ARC provides a structured four-stage pathway to support researchers through the commercialisation process: • ARC Discover Two virtual workshops exploring various impact pathways, including commercialisation, and identifying new audiences for research. • ARC Launch Five virtual training sessions designed to develop entrepreneurial skills and begin testing ideas with potential customers and stakeholders. • ARC Accelerate A six-month accelerator programme providing up to £62,500 in funding, time buyout, expert-led training, and dedicated mentorship to validate venture ideas and develop sustainable business models. • ARC Scale Support for scaling ventures to deliver impact on a larger scale (details to be confirmed).
Funding	Originally Aspect funded, and now funded by UKRI

Link	ARC Accelerator - Building impactful research-based ventures

ARC Accelerator - Building impactful research-based ventures

5. Summary of Conclusions

Below is a recap of the conclusions and considerations from each chapter, which we have shared throughout this report. As a next step, we recommend and welcome feedback from the project partners, about what reflections and considerations this review has raised about the various sharing models under considerations (see **Box 1** in **chapter 0**). We also invite further reflections on what they feel is important to capture in the survey and interviews, based on this review.

1. **SHAPE commercialisation differences to STEM**

Conclusion: A shared SHAPE TTO offering is likely to offer a different kind of support than a "traditional" TTO. The insights on how SHAPE differs can be used to help inform what that offering might entail. However, the project partners will need to consider whether the offering should focus strictly on spinout support, or also earlier stage pipeline development. The project partners should also consider what aspects of spinout (or other commercialisation) support are best suited to a shared offering. See next sections for more on supporting SHAPE commercialisation.

2. **Characteristics of SHAPE spinouts**

 Conclusion: These insights may inform the types of services and support offered by the shared SHAPE TTO. Access to time and people/expertise seems to be a critical enabler for SHAPE ventures. If these ventures are less likely to raise investment/ need capital, shared TTO models based on investment funding (returns to investors) are less likely to be feasible. Understanding how long to support ventures and when to offer support is also key. See next section on the commercialisation journey.

Considerations: Does the type of venture a HEP supports (discipline, target client, product or service) require a different model of SHAPE support? Can we use the data from the Aspect survey to identify those institutions that are likely to have more/ less resources, and use this to prioritise stakeholder interview list for this project? Similarly, for those reporting existing spinouts, could we use that data to prioritise potential interviewees (i.e., find out what support they already offer, and willingness to participate in a shared model)?

3. **Phases of the SHAPE commercialisation journey**

Conclusion: The literature suggests that supporting a breadth of knowledge exchange (KE) activities in the SHAPE disciplines can be important for HEPs aiming to build their SHAPE spinout pipeline. Much of the Innovation Caucus reports echoes what had been learned through the Aspect Network and ARC about motivations, barriers, and differences in SHAPE research commercialisation, however the point that smaller/ less well-resourced HEPs are focussing less on venture building, and more on broader KE activities for social sciences is important. We may need to explore in the survey if this is likely to prevent them from engaging in SHAPE specific support and/or if this suggests any shared models need to look beyond just spinout support.

Considerations: What types of support is happening at each stage? Which of these phases would be suitable for shared TTO support? Do HEPs have a greater need to share support at different stages in the journey (something to ask in the survey)? Should consultancy-based business (i.e.,

those that have not spun-out but generate income) be considered as in-scope for a shared offering? Should a wider breadth of KE support be in scope? If not, will that prevent HEPs that are less-well resourced (and use wider KE activities for reporting their SHAPE impact) from engaging in a shared TTO offer?

4. Arts and Creative Industries

Considerations: Can a SHAPE support offering also apply to arts and creative industries ventures, or is a different kind of support needed for this?

5. Limitations of 'traditional' technology transfer support

Conclusion: The project partners should consider these findings when developing a model for SHAPE spinout support, and whether these are still relevant to SHAPE spinouts, or if models and processes for STEM are still valid.

Considerations: We welcome comments from the project partners on any implications the Spinout review could have on a SHAPE support offering, and whether any traditional models of tech transfer worth incorporating into the offering.

6. "Good practice" in shared TTO support

Conclusion: Reflecting on the nature of these examples, it's interesting to note that these are mostly all offering training, acceleration services and guidance; and the focus on sector specific support for a few of these. It also calls back to the 2020 Aspect Learning, which noted one of the challenges in supporting SHAPE commercialisation is the breadth of industries and applications where the research can be applied, and the difficulty in hiring individuals with that breadth of networks and expertise.

Considerations: Would sector or discipline specific shared TTO support be valuable? Is sharing networks another way to address this gap?

7. Challenges in sharing good practice

Conclusion: This article suggests that self-assessments can help TTOs identify how to best support each other and share best practice.

Considerations: Is this theory valid for our purposes? If so, what might a self-assessment tool for SHAPE TTOs look like? How might this differ to (or complement) the maturity models presented in **section 2.3** of this report?

8. Lessons learned from shared STEM TTOs

Conclusions: France's SATT network operates under a hub-and-spoke model, aiming to reduce fragmentation, improve efficiency, support SME technology adoption, and drive economic growth from public research. In contrast, Ireland's Knowledge Transfer Ireland (KTI) functions as a national hub for research commercialisation and industry-academia partnerships has provided funding for various technology transfer strengthening initiatives that have led to different

consortium models. These have led to learnings about the importance of trust-building, cultural shifts towards commercialisation, and the need for legally binding consortium agreements.

Despite limited information on the operational aspects of both Irish consortia and French SATT, we observe significant value in them operating together, sharing resources, and addressing common challenges.

Considerations: How to make sure that TTO staff is embedded in the research community? What are ways of building trust and relations with academics on a daily basis?

9. Lessons on benefits and challenges of sharing models

Conclusions: We note that there are fewer cited benefits than challenges; many of the organisations had a limited lifespan; the "sharing models" included other functions than just the delivery of TT services (i.e., supporting training or other activities to build awareness or pipelines). The article also prompts reflections on whether the benefits cited could be delivered via existing mechanisms (i.e., like Aspect or other consortiums), or whether a shared model is required.

6. Appendix

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6.2   Challenges and opportunities in SHAPE

This section contains some additional information from some of the literature we reviewed, where we felt it was not needed in the body of the report, but may be of interest and/or was useful background when completing our review.

CHASS and Aspect

One of the first pieces of literature about differences in SHAPE compared to STEM was a report published by Australia's Council for Council for the Humanities, Arts and Social Sciences (CHASS), an advocacy and awareness-raising non-profit organisation. The paper "Commercialisation of research activities in the humanities, arts and social sciences in Australia" (Gascoigne & Metcalf 2005), identified the following six challenges facing SHAPE research commercialisation:

1. The value of HASS research is not well understood by industry.
2. Standardised practices for industry engagement with HASS are lacking.
3. The HASS research sector requires stronger commercialisation capabilities.
4. Universities are better prepared to support STEM commercialisation compared to HASS.
5. HASS researchers in universities lack strong incentives for commercial work.
6. R&D investment in HASS remains minimal.

It was this report that later prompted the formation of the Aspect Network in 2018, initially funded with £5 million funding from Research England's Connecting Capability Fund (CCF), to create a collaborative network of organisations looking to leverage commercial and business opportunities from social science research. Their aim was to:

- Aspect Network – Establish a global network to understand, share, and disseminate best practices in how universities commercialise social sciences.
- LSE Technology Transfer Office – Develop insights by creating a social sciences commercialisation office from the ground up.
- Zinc – Build capacity and systematically tackle barriers to commercialisation through a mission-oriented programme.

In 2021, Aspect secured £2.4 million in follow-on funding to build on the insights gained during the programme's first three years. This funding aimed to expand membership, develop further best practices in the commercialisation of social sciences, arts, and humanities (SHAPE), and ensure these practices were captured and embedded across the higher education community.

The Aspect Network's Learning reports from 2020, 2021, and 2023 noted several unique challenges and opportunities for SHAPE commercialisation, and suggested ways forward to resolve this. Among most common challenges, they identified:

1. A clear need to raise awareness, improve understanding, and enhance the visibility of the opportunities and potential of social sciences research for commercialisation.
2. The commercialisation of social sciences faces challenges due to its novelty, lack of established pathways, and **the need for distinct business models—such as those accommodating process-driven or people-led innovations**.
3. Industry awareness and funding remain significant challenges for social sciences commercialisation. While industry engagement was seen as less of a barrier in 2020, by 2021 it emerged as a key issue, alongside funding. The primary difficulty lies in communication— how the value of social sciences is perceived by industry and how academics view the benefits of industry collaboration.

4. Academics face **challenges in engaging with commercialisation due to limited time, lack of incentives, and insufficient motivation**. Institutional changes could address incentives and highlight the benefits of commercialisation for academics, but time constraints are tied to structural issues.

Despite identified challenges for SHAPE commercialisation, based on Aspect members' survey responses, complemented by 2021 Aspect Member, learnings from the LSE commercialisation office and Zinc venture-builder, authors collected the list of "top tips" when setting up a social sciences commercialisation or innovation support function. They are clustered in the following categories: communicating and engaging with academics, starting the commercialisation process, taking innovations to market, building capacity and skills within support teams, integrating the support teams, and tailoring the entrepreneurship training. For further details, please see Table 2.

Table 7: Good practice for setting up a social sciences commercialisation or innovation support office based on Aspect members' input (Aspect Learning Report 2021)

Theme	Description
Communicating and Engaging with Academics	• Use alternative terms that resonate with social scientist's values. • Institutions will benefit from exploring and communicating the complex relationship between topics such as commercial success and social impact. • Showcase the breadth of ways academics can engage in commercialisation to raise awareness of different opportunities and pathways.
Starting the Commercialisation Process	• Get invited into the conversation early on to contribute to key decisions. • Building the relationship with the academic is important – compared to STEM scientists, social scientists are more likely to work alone and may well need more hands-on support. • End products take time to evolve.
Taking Innovations to Market	• The commercialisation pathway for the social sciences often starts through consultancy. • Intellectual Property (IP) is (usually) not detachable. • Social enterprises are one of the commercialisation route for social sciences. • Be inventive with business models and think 'outside the box' regarding how data- and service-based innovations can be commercialised. • The criteria for traditional funding routes do not always fit the social sciences. • Bring in students and ECRs to partner with academics.
Building Capacity and Skills within Support Teams	• Success in social sciences commercialisation depends on the capacity and ability of the team to dedicate additional time to commercialisation. • Dedicated resource is also important to do 'developmental work' with the academics. • Commercial teams also need time to build their networks within different markets, and businesses need time to become familiar with university R&D. • Innovation teams may need training. • Leverage networks to share good practice and generate examples of commercialisation.
Integrating the Support Teams	• Frame the offering around supporting the academic as a team. • Add specialised roles to support due diligence.
Tailoring Entrepreneurship Training	• Founders should be encouraged to embrace their social science/research backgrounds to create a new mission and lead with passion.

	• Prior entrepreneurship exposure is a factor in a social sciences founder's ability to commercialise research or build a successful social impact venture. • Resources for social sciences entrepreneurs should incorporate training in the 'softer skills' of entrepreneurship. • Foster an entrepreneurial mindset and skillset from the student through to the senior academic.

UKRI Innovation Caucus Reports

UKRI's Economic and Social Research Council (ESRC) funded the Innovation Caucus, to conduct two reviews that looked at SHAPE commercialisation:

"Commercialisation of Research our of Social Science" (Rahman et al. 2022)
- o Aims: uncover challenges and opportunities and learn more about academic capacity to commercialise social sciences.
- o Method: gathered data through 19 interviews, and from webinars run by the Aspect network and Praxis Auril.
- o Outcomes: **Table 8** shows a summary of some key findings in the report.

- • "Uncovering the latent potential for arts, humanities & social science venture building" (Rahman et al., 2024)
  - o Aims: articulate the impact and value of SHAPE ventures, then identify the challenges, opportunities and support needs in SHAPE venture building.
  - o Method: building a logic model and validating the findings through dialogue with over 60 stakeholders in the UK SHAPE and commercialisation ecosystem.
  - o Outcomes:
    - ▪ Six potential impacts from SHAPE ventures (which could potentially be translated into metrics for support programmes);
    - ▪ Three-phase SHAPE Commercialisation Ecosystem Life Cycle diagram, showing where SHAPE venture building sits compared to STEMM ventures (i.e., SHAPE is at the first phase); and
    - ▪ Four recommendations for building and maturing the UK SHAPE venture building ecosystem (summarised in **Table 9**).

Table 8: Key Findings from the CROSS study (Rahman et al., 2022)

Theme	Description
Reluctance Toward Commercialisation	• Many social scientists view "commercialisation" as conflicting with their ethical and academic values. • The term is often associated with profit-driven motives, which clashes with the socially conscious nature of the discipline. • Reframing commercialisation as "social ventures" or impact-driven initiatives has shown promise in addressing this resistance.
Abstract Nature of Research	• Social science outputs are often less tangible (e.g., theories, frameworks) compared to STEM disciplines, making commercial applications less apparent. • Difficulty in capturing the value of CROSS using traditional metrics like patents and licences further exacerbates this issue.

Early Career Researchers (ECRs)	• ECRs are more open to exploring non-academic career pathways and engaging in commercialisation. • Supporting ECRs with training on commercialisation and industry collaboration can embed CROSS in their career trajectories. • Existing training frameworks, such as the Vitae Researcher Development Framework (RDF), focus on transferable skills but lack emphasis on commercialisation. • ECRs face pressures to prioritise traditional academic outputs over commercialisation, limiting their ability to explore alternative pathways.
Support Systems	• KE professionals are vital intermediaries in facilitating CROSS but often lack the specialised skills and resources to support social scientists effectively. • Smaller institutions, with limited KE capacity, struggle to prioritise CROSS due to resource constraints.
Funding Gaps	• Securing funding for social science commercialisation is challenging, as research often lacks patentable outputs or established market applications. • Seed and scale-up funding specific to CROSS is needed to address these gaps.
Institutional Challenges	• Larger universities with established KE offices have greater resources to support CROSS compared to smaller institutions. • A lack of senior academic and institutional recognition of CROSS limits resource allocation and strategic focus.

Table 9: Summary of recommendations for maturing the UK's social sciences venture-building ecosystem (Rahman et al., 2024)

Theme	Description
Redefine Value	• Develop a shared understanding of AHSS commercialisation's multifaceted value, encompassing social, environmental, and preventative economic benefits. • Create tailored metrics to measure impacts effectively.
Raise Awareness	• Launch educational initiatives to promote AHSS commercialisation, targeting academics, funders, and decision-makers. • Showcase successful case studies to shift perceptions and inspire engagement.
Strengthen Academia-Industry Links	• Facilitate collaborations between academics and industry through platforms, events, secondments, and dedicated funding streams. • Encourage mutual understanding of AHSS research's value to industry and society.
Increase Funding	• Provide targeted funding for AHSS ventures, including seed and scale-up funding. • Support hiring of Knowledge Exchange professionals with industry expertise to bridge skills gaps.
Support Systematic Growth	• Establish clear pathways for AHSS commercialisation and foster networks to share best practices. • Align university and funder strategies to better support AHSS-specific ventures.

University of Cambridge Report

Another recent review "Commercialising Social Science Research, Insights from the University of Cambridge on key barriers, enablers, and pathways to success" **(Ulrichsen & Athanassopoulou,**

2024) explores the challenges, opportunities, and processes involved in commercialising social science research (SSRC) at the University of Cambridge.

Key findings were that there is a broad variety of SSRC projects in terms of their key sectors and types of ventures created, motivations for engagement include creating social impact and gaining financial independence, as well as differences within the commercialisation process itself (**Table 10**). To address this, the authors made the following recommendations: expanding funding and support, tailoring business models, removing structural barriers, creating dedicated organisational and physical space for SSRC, and supporting systematic change (**Table 11**).

In conclusion, while SSRC spans varied sectors and initiatives, its commercialisation is often hindered by structural rigidity, limited resources, and cultural aversion to commercial pathways. To address that, authors recommend expanding funding and tailored support, removing structural barriers, and establishing a culture of commercialisation through dedicated spaces and organisational change.

Table 10: Key findings from "Commercialising Social Science Research, Insights from the University of Cambridge on key barriers, enablers, and pathways to success" (Ulrichsen & Athanassopoulou, 2024)

Theme	Description
Variety of SSRC Projects	• SSRC encompasses diverse projects, including media and training content, software tools, and social networks. • Many SSRC initiatives originate from arts, humanities, and social sciences departments, while others emerge from STEM disciplines. • Key sectors targeted by SSRC include education, cultural industries, public services, and health.
Motivations for Engagement	• Social scientists are motivated by a desire to create societal impact, address real-world problems, and influence policy and practice. • Financial independence and frustration with existing approaches to addressing societal challenges also drive engagement.
Commercialisation Process	• The journey typically includes phases of opportunity emergence, experimentation, formalisation, and focused development. • Social scientists often face critical decision points, such as balancing academic roles with entrepreneurial demands or selecting commercialisation pathways.
Barriers to SSRC commercialisation	• Lack of entrepreneurial confidence, isolation, and difficulty balancing academic and commercial activities hinder progress. • Limited funding, insufficient time, and difficulty recruiting specialised talent create significant barriers. • Structural rigidity, cultural aversion to commercialisation, and lack of formal support mechanisms within departments pose challenges. • Many SSRC projects target non-traditional markets, making pricing, business models, and value propositions more complex to develop.
Enablers for SSRC commercialisation	• Cambridge's rich ecosystem facilitates connections with peers, partners, and mentors. • Awards, funding, and positive stakeholder feedback boost confidence and momentum. • Cambridge Enterprise provides essential tools, training, and guidance, reframing researchers' thinking to explore commercial pathways. • Impact-focused funding and bridging funds allow researchers to explore ideas without committing prematurely.

Table 11: Recommendations from "Commercialising Social Science Research, Insights from the University of Cambridge on key barriers, enablers, and pathways to success" (Ulrichsen & Athanassopoulou, 2024)

Theme	Description
Expand Funding and Support	• Increase impact-focused funding and translational resources to buy out researchers' time and reduce personal risks.
Tailor Business Models	• Develop commercial models that align with SSRC's focus on social impact over profit.
Remove Structural Barriers	• Address contractual issues and incentivise departments to support SSRC efforts.
Create a New 'Home' for SSRC	• Establish a dedicated organisational and physical space for social science commercialisation within universities to streamline support and create a community of practice.