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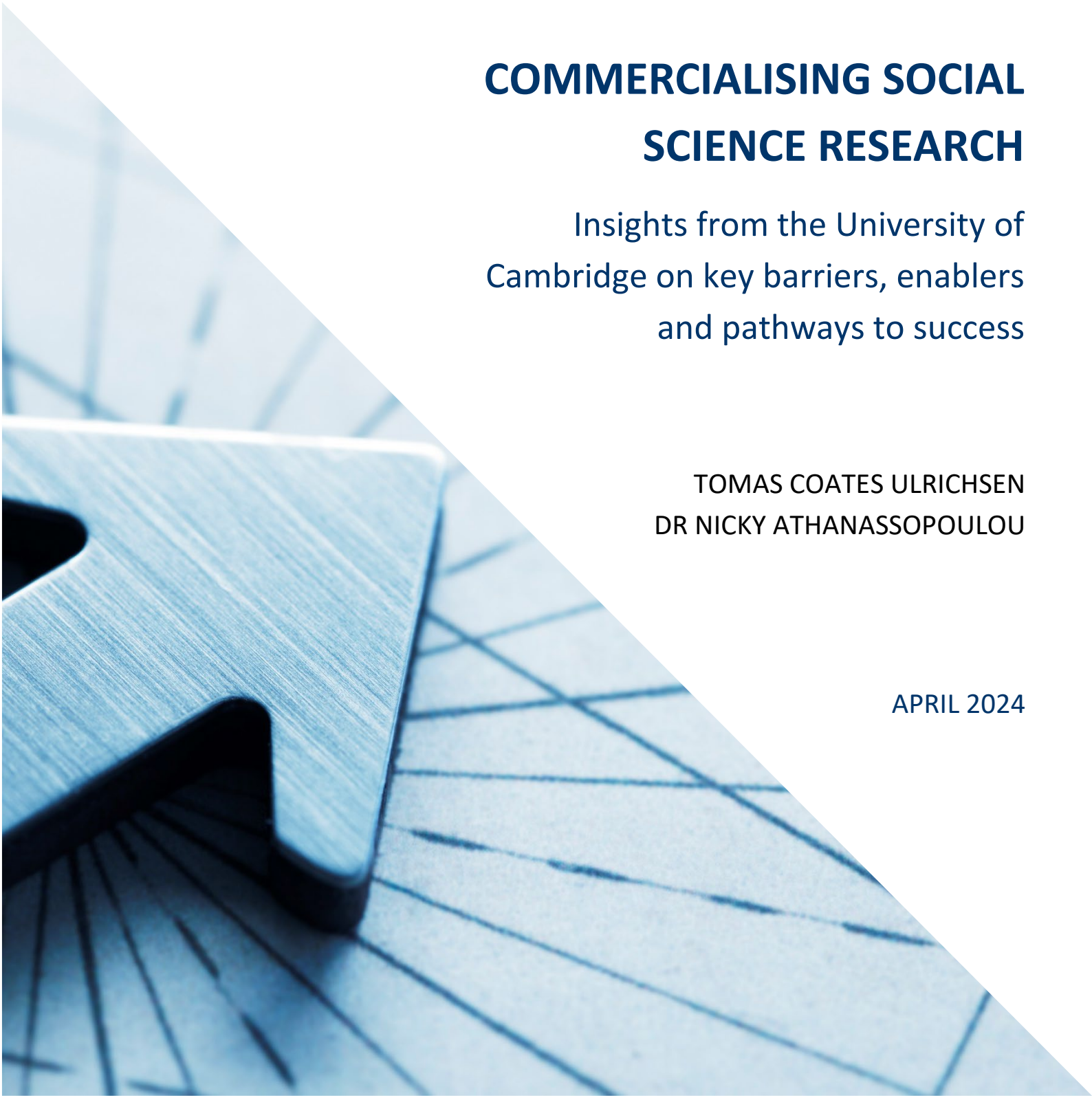

COMMERCIALISING SOCIAL SCIENCE RESEARCH

Insights from the University of Cambridge on key barriers, enablers and pathways to success

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Disclaimer

The views expressed in this report are of the authors alone. They do not represent the positions of organisations or other groups to which the authors belong. The authors have made every effort to accurately capture and analyse the information generously provided to them by those that took part in the study. Any errors in interpretation, analysis, and presentation of this information are the responsibility of the authors.

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1 Introduction

This report presents the findings of an exploratory project investigating the efforts of social scientists at the University of Cambridge in commercialising their research. It explores the following key questions:

- What do social science commercialisation projects look like at the University of Cambridge?
- What does the commercialisation journey look like in the social sciences?
- What motivates social scientists to engage in commercialisation?
- What barriers hold projects back and what enablers help them progress the journey?
- What more can be done to support social scientists and their commercialisation journeys?

In exploring the above questions, our aim is to provide insights to inform the development of a tool for use by offices within universities, such as Cambridge Enterprise at the University of Cambridge, to both assess the progress of their Social Science Research Commercialisation (SSRC) projects, and identify where greater support needs to be provided.

The commissioning of this project by the University of Cambridge reflects a rapidly growing interest amongst universities, academics and researchers and Knowledge Exchange (KE) funders in how to better leverage commercial routes and the market mechanism to enable social science research to drive economic, societal, and environmental impacts at scale. While many universities have accumulated decades of experience in supporting the commercialisation of research from biomedical, scientific and engineering disciplines, their efforts to more formally and systematically support SSRC are relatively recent.

Reflecting the nascency of this field, there is relatively little evidence and insight on the variety of SSRC opportunities, the variety of commercial routes from 'idea-to-impact', the types of significant barriers/enablers that will enable real-world socio-economic impacts to be unlocked and realised, and the support required to facilitate and accelerate the process. Furthermore, there are few tools available to help universities assess the readiness of their projects for commercial application. Through this project we therefore aim to contribute to the knowledge base on these important topics.

The report is structured as follows. Following a discussion of our approach and data, we explore the variety of SSRC projects being undertaken at Cambridge (Section 3). We then look at why social scientists are engaging in this type of activity (Section 4) and unpack the commercialisation journey they are navigating (Section 5). The report then turns to the key barriers and enablers arising in our interviews that are shaping the journey (Section 6) and the areas where more support was seen to be needed (Section 7). Building on this wealth of information and insight, in Section 8 we suggest a potential tool that could be used to capture progress of commercialisation projects and identify areas where targeted support may be necessary. In doing so, we adopt a 'readiness' lens that captures the key areas where progress needs to be made for successful commercial deployment. Section 9 provides a summary and concluding thoughts.

Approach and data

2 Approach and data

This report is based on a study undertaken for University of Cambridge. Given the general lack of understanding, frameworks, and evidence on SSRC, this study adopted an exploratory approach to advance our understanding of the key research questions set out in the introduction to this report.

2.1 Defining commercialisation in the social sciences

Before presenting our approach, it is important to define what we mean by the term commercialisation and how it is be interpreted in the social science context.

The term commercialisation is used in different ways. It can refer to the activities associated with launching an innovation into the commercial world, one of the later phases of the innovation journey. Other researchers use the term more to refer to the overall process of developing a technology or idea into a commercial application. In the university context, the term 'research commercialisation' may refer to the process of introducing ideas and inventions emerging from research into the commercial sphere, and where further development and investment is typically required to create commercially-viable products and services. The term is also used as shorthand for particular pathways of development, namely new venture creation or the licensing of intellectual property for commercial use.

UK Research and Innovation (UKRI) defines commercialisation as:

> "*…the process by which new or improved technologies, products, processes and services are brought to market. Researchers interested in exploring this need an intent and mindset to understand how they might be able to progress along the technical and commercial readiness pathways. This includes understanding who the customer is, how the customer will access the output and what longer term sustainability or the business model will look like.*" [1]

Cambridge Enterprise conceptualises commercialisation of research out of the social sciences as:

> "*…market-based solutions to channel academic expertise in solving real-world problems and addressing societal challenges. Market-based solutions comprise many arrangements, including licensing innovative ideas and tools, consulting or creating new companies (including social ventures), and bringing about entrepreneurial pathways to impact*." [2]

These definitions highlight the focus on leveraging commercial, market-based approaches to develop innovations based on ideas emerging from social science research. The Cambridge Enterprise definition recognises the many routes through which this can be delivered; the UKRI definition

[1] https://www.ukri.org/councils/esrc/impact-toolkit-for-economic-and-social-sciences/how-to-commercialise-your-research/

[2] https://www.enterprise.cam.ac.uk/challenges-and-opportunities-for-commercialisation-of-research-out-of-the-social-sciences/, accessed on 3rd November 2023

emphasises the importance of the intent and mindset of the social scientists involved in developing commercially-viable products and services.

Implicit in these definitions is the idea of replicability and scalability. In developing innovations from social science research that can be traded in the market, the solutions need to be more than just one-off transactions involving a monetary fee. This helps us to distinguish between the often ad-hoc advisory work that many academics undertake (often involving a fee), or one-off fee-for-service consultancy projects delivered in response to a specific opportunity, and the more deliberate efforts to create activities that can be sustainable commercially – for example, the development of a consultancy-based service that allows users to leverage the expertise of academics to solve problems.

2.2 Approach and data

Building on this conceptualisation of commercialisation in the social sciences, we explored the potential value of frameworks and insights developed in other contexts by the Institute for Manufacturing (IfM) Engage and the Policy Evidence Unit for University Commercialisation and Innovation (UCI) to inform our initial thinking and approach. This included our understanding of the research commercialisation and innovation processes such as the concept of readiness threads to measure progress to application; of the function of knowledge exchange more broadly and the barriers and enablers that shape it; of the motivations of academics to engage; and of the types of support being put in place to facilitate knowledge exchange. While many of these insights (although not all) were developed in the context of science and engineering opportunities, our collective experience to-date in advising commercialisation projects from social science disciplines suggests there may be useful touch points to inform our thinking. Drawing on these frameworks and insights, we reviewed the existing literature and studies.

Building on our knowledge, we then interrogated and analysed an internal project database of 127 SSRC projects supported by the University of Cambridge. Projects were supported by either Cambridge Enterprise (the Technology Transfer Company of the University of Cambridge and lead provider of support for SSRC projects within the University) or through its Economic and Social Research Council (ESRC) Impact Acceleration Account (IAA) awards. This led to a characterisation of SSRC projects at the University of Cambridge based on (i) the type of knowledge asset being commercialised, and (ii) the way in which it was commercialised.

We then used our categorisation of SSRC projects to identify a sample of 12 cases to explore in-depth, focusing on gathering information and insights from the social scientists' experiences to answer the key research questions outlined in the introduction to this report. Projects were selected to ensure broad coverage across different types of SSRC project,allowing us to understand the full range of possible opportunities, barriers and enablers, and support required. Further work will be required to understand the scale of effects and how particulars type of SSRC project differ from each other.

Note that our focus here is on the commercialisation opportunities emerging from social science research. While we limit our focus to projects that we believe fit the definition of social science commercialisation set out in section 2.1, we do not set any limits on the types of knowledge assets being produced, on the routes to commercial application, or on the type of target users and

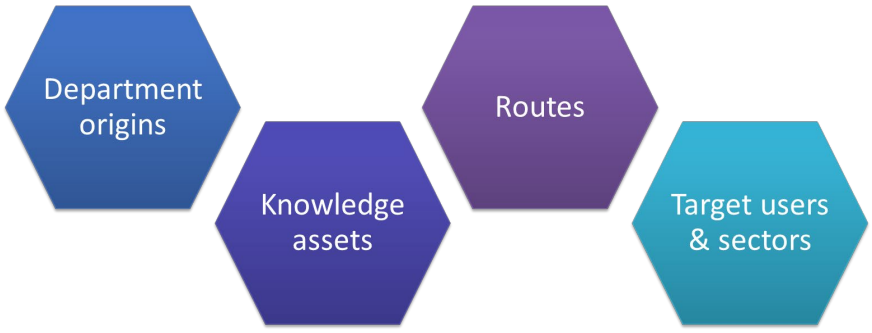
markets. We also deliberately do not limit our attention to social science research based in social science faculties. Rather, we were keen to include cases where this type of research is being undertaken in faculties where commercialisation is more common (e.g. engineering, clinical medicine).

The variety of social commercialisation projects

3 Exploring the variety of social science research commercialisation projects

One of the significant challenges limiting progress in this nascent field is a lack of systematic understanding of the different types of opportunities in the social sciences for commercialising research. To bring some clarity to this issue we draw on insights from the technology transfer literature, and in particular, Bozeman et al. (2015), which distinguishes the type of *knowledge asset* being commercialised with the way in which it is being commercialised (referred to hereafter as the *commercialisation mechanism*). Together with the characteristics and capabilities of the organisations and individuals involved in the process, and the demand environment, these will shape the commercialisation process, nature and scale of the opportunity, and the barriers faced.

Figure 1 Dimensions for capturing the variety of social science commercialisation projects



The internal databases held by the University of Cambridge on their SSRC projects provide a rich source of information to help us understand the types of opportunities emerging within the University for commercialising social science research. In total, 142 cases were analysed, relating to 127 unique knowledge assets[3].

3.1 Types of knowledge assets emerging from social science research

Table 1 presents our attempt to identify and classify the *knowledge assets* underpinning each SSRC project. We isolate five key categories:

- **Knowledge and understanding** gained from research that provides:
    - **Media and content** for training or other activities to engage target users to raise understanding and build capabilities on a particular topic
    - **Insights, tools and frameworks for making assessments, predictions, and decisions** (for example, to develop interventions to improve outcomes)

[3] Some knowledge assets had multiple commercialisation cases, reflecting varying commercialisation opportunities or pathways.

- **Software algorithms and AI-based technologies**, for example, that seek to predict outcomes, solve problems and enable dissemination and engagement
- **Data provision and access and/or collection and analysis**, for example, that systematises and significantly expands data collected through research to make it more widely available to inform decisions and understanding, or that provides a tool to collect information (informed by social science research) from groups
- **Product designs and hardware**, drawing on insights from social science research
- **Social/professional networks and connectivity**, to facilitate sharing of ideas and knowledge, or to better connect individuals (for example, in disadvantaged or highly disconnected communities) to allow them to access new types of resources and benefit from opportunities

Table 1 indicates that the knowledge assets underpinning many of the cases supported by the University of Cambridge centred on leveraging advances in knowledge and understanding to develop media and content for training and engaging users on a particular topic (26% of cases), or to provide insights and tools to inform decisions and make assessments (23% of cases). In just over a fifth of cases the knowledge asset was some form of software algorithms or AI-enabled technology, while 11% of cases were focused on building social and professional networks and increased connectivity.

Table 1 Types of SSRC cases being supported by the University of Cambridge

Type of asset		Cases		Unique knowledge assets being commercialised		Unique assets being commercialised through a spin-out/start-up	
		Number	*Share of total (%)*	Number	*Share of total (%)*	Number	*Share of total (%)*
Knowledge and understanding	Media and content for training/increasing understanding	37	*26*	35	*28*	5	*20*
	Insights, tools and frameworks for making assessments, predictions, decisions	32	*23*	28	*22*	5	*20*
Software algorithms/AI tech		31	*22*	24	*19*	9	*36*
Data provision, access, collection and analysis	Database provision/access	4	*3*	3	*2*	0	*0*
	Data collection/analysis	3	*2*	2	*2*	0	*0*
Product designs/hardware		10	*7*	10	*8*	1	*4*
Social/professional networks and connectivity		15	*11*	15	*12*	4	*16*
Other/not clear	Other	1	*1*	1	*1*	1	*4*
	Asset - Not clear	9	*6*	9	*7*	0	*0*
Total		142	*100*	127	*100*	25	*100*

3.2 Types of mechanisms for commercialising social science research

Table 2 presents our attempt to isolate the primary *mechanism* for commercialising the knowledge asset produced or enabled by social science research. The most frequent mechanisms involved creating some form of product or tool based on software or AI-enabled technology (25% of cases) or a non-software-based product or tool (18% of cases), for example, to create assessment or accreditation tools. Apps, games and digital platforms were being developed in 13% of cases; and 12% of cases involved developing some form of media, publications, exhibitions or experiences. Just over one-in-ten cases involved developing education services, while 6% of cases focused on creating consultancy services. Other forms of commercialisation mechanisms under development include network formation, database provision and access, events, and other types of services.

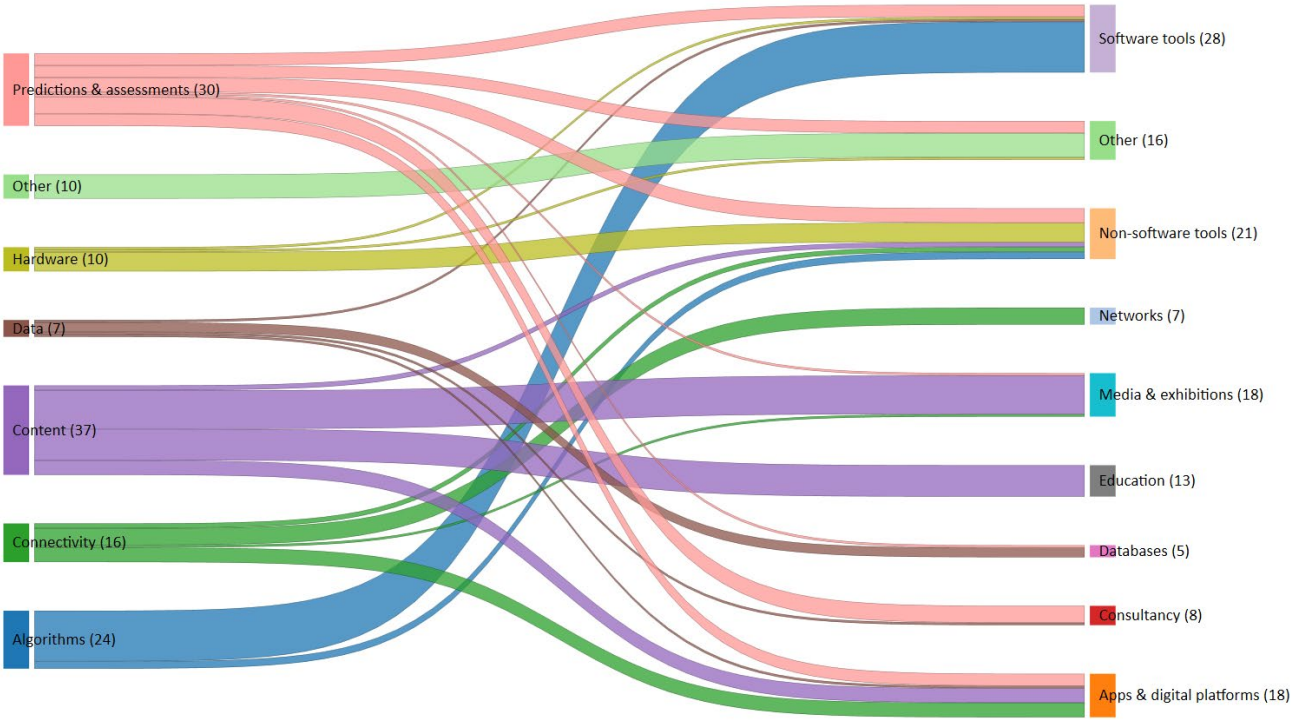
Table 2 Types of commercialisation mechanisms being pursued by SSRC cases supported by the University of Cambridge

Commercialisation mechanisms	Cases		Unique knowledge assets being commercialised		Unique assets being commercialised through a spin-out/start-up	
	Number	*Share of total (%)*	Number	*Share of total (%)*	Number	*Share of total (%)*
Products & tools (software/AI)	36	*25*	28	*22*	12	*48*
Products & tools (non-software)	25	*18*	21	*17*	5	*20*
Apps/games/digital platforms	18	*13*	18	*14*	0	*0*
Media, publications, exhibitions and experiences	17	*12*	17	*13*	0	*0*
Education services	15	*11*	13	*10*	5	*20*
Consultancy services	9	*6*	8	*6*	1	*4*
Network	7	*5*	7	*6*	3	*12*
Database provision/access	7	*5*	5	*4*	0	*0*
Other services	2	*1*	2	*2*	1	*4*
Events (e.g. symposia, conferences, workshops)	1	*1*	1	*1*	0	*0*
Object - Not clear	14	10	14	11	0	0
Total	142	100	127	100	25	100

Figure 2 aims to visualise the various commercialisation routes being deployed for different types of assets emerging from social science research. In doing so, we attempt, for the first time, to identify potential options for commercialisation routes for a given type of asset, to help guide thinking. It shows that most of the software/AI algorithms are utilised as software tools. Knowledge and understanding resulting in media and content-related assets are typically commercialised either through education services, publications and exhibitions, or apps and digital platforms; and connectivity-focused assets were typically commercialised through digital platforms or social network-building activities. By contrast, knowledge resulting in predictive tools and assessment

frameworks were commercialised through a far wider variety of routes, including both software and non-software-based tools, consultancy services, and apps and digital platforms. *Note that this is a first attempt at this kind of mapping and should be tested and validated further before deploying in practice.*

Figure 2 Visualising the commercialisation routes for different types of assets

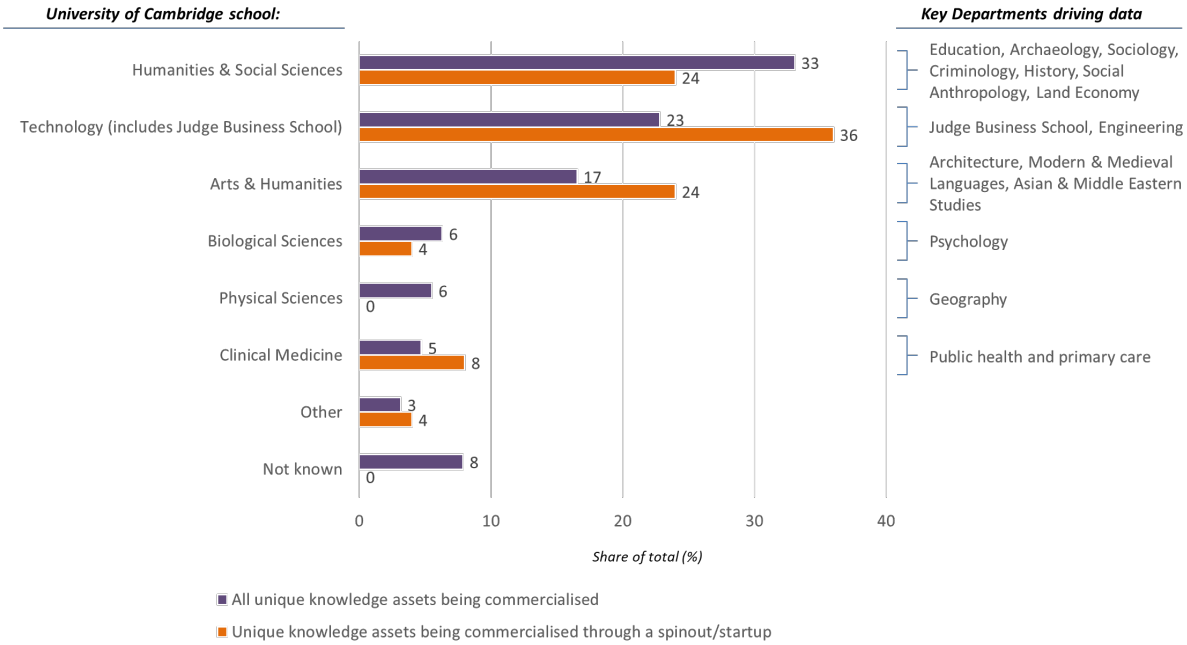


Note: the numbers may not correspond exactly to those in Table 1 and Table 2 as some projects were characterised against multiple commercialisation routes.

3.3 Departmental origins for social science research commercialisation opportunities

Social science research typically takes place within social science-focused departments in universities. However, such research is not exclusive to those departments, as social scientists are based across a wide breadth of departments including those focused on scientific and engineering disciplines and the physical and biological sciences. Recognition of researcher distribution across disciplines is relevant for the study of SSRC opportunities. Department-level incentives, culture, and support will influence whether social science researchers perceive commercialisation as a legitimate activity to pursue, as well as their decisions to engage in commercialisation, and the ability of academics to develop their ideas into commercial opportunities.

Figure 3 ***University of Cambridge schools from within which social science research commercialisation opportunities emerged, by proportion of unique knowledge assets (%) and proportion of projects pursuing a spin-out/start-up route (%)***

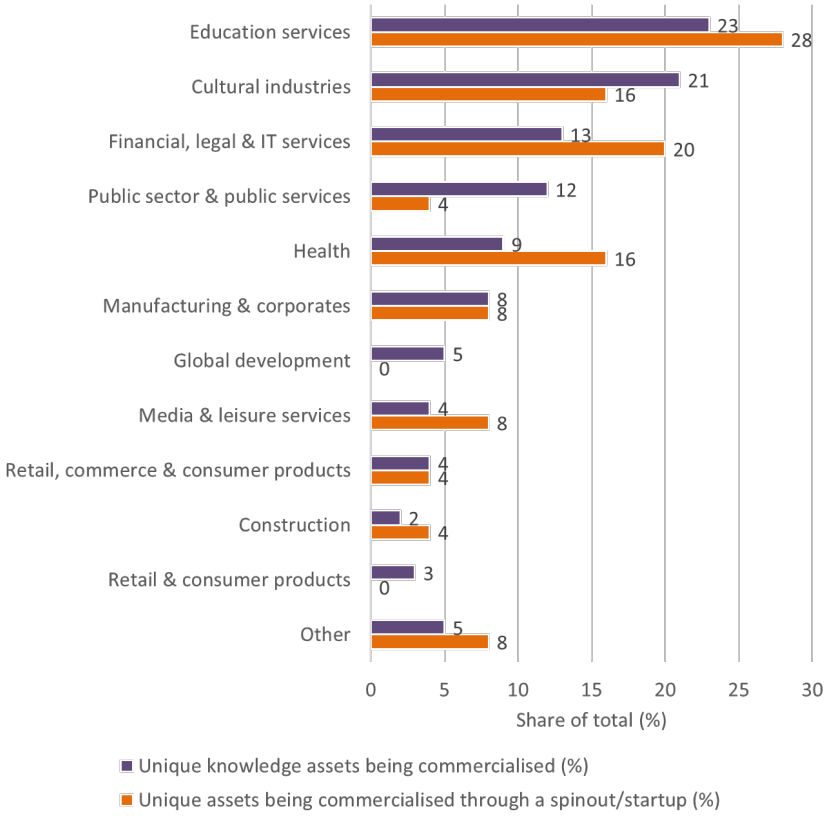


Numerous SSRC opportunities at the University of Cambridge emerged from departments based in the School of Humanities and Social Sciences (33% of unique knowledge assets) and the School of Arts and Humanities (17% of knowledge assets). However, many additional SSRC opportunities (43%) arose from social science research being undertaken in departments beyond these schools. For example, 23% of opportunities originated in the School of Technology, in part reflecting the placement of the Judge Business School within it. However, a number of opportunities emerged from social scientists based within the Engineering Department (which includes a division of manufacturing and management). Of particular note here is the fact that almost of third of the SSRC opportunities being commercialised through a spin-out or start-up developed from within the School of Technology (mostly from the Business School or Engineering). These departments possess significant experience supporting entrepreneurial activities of their academics and researchers.

3.4 Target markets for social science research commercialisation projects

The database assembled by the University of Cambridge also provided insights into the current thoughts regarding the primary sector targeted by SSRC projects. Figure 4 presents our analysis of this data. Perhaps unsurprisingly, many of the projects targeted the education sector (23% of unique cases) and cultural industries (21% of unique cases), while 12% reached the public sector and delivery of public services. However, SSRC projects are being directed well beyond these sectors to include financial, legal and IT services, (13%), health (9%) and manufacturing and corporate (8%). Commercialising social science research through a spin-out or start-up was most common when targeting the education sector (28% of spin-out/start-up cases), financial, legal and IT services sectors (20% of spin-out/start-up cases), health sectors (16% of spin-out/start-up cases), and cultural industries (16% of spin-out/start-up cases).

Figure 4 Target sectors of all SSRC cases, and spin-out/start-up SSRC cases being supported by Cambridge Enterprise, University of Cambridge (percentage of cases)



Note: Number of unique cases with target sector data = 101; Number of unique cases being commercialised through a spin-out/start-up route with target sector data = 25.

Motivations for engaging in commercialisation

4 The motivations of social scientists for engaging in commercialisation

What motivates social science researchers at the University of Cambridge to pursue commercial opportunities from their research? Our interviews, covering the commercialisation of different types of SSRC knowledge assets through varying routes, revealed a range of motivations.

In many cases there was a **drive amongst those involved to leverage their knowledge and research to make a real, positive impact and difference on society** and be actively involved in accelerating the process of delivering change. How this was delivered varied across projects and individuals. It ranged from helping societies meet specific needs such as filling gaps in education provision in areas important to a particular community, to finding ways to better support marginalised communities, raising awareness and understanding of important social issues for improving quality of life, and addressing problems that have large social good but lack economic incentives and markets to solve them. Motivations also included helping individuals in less developed parts of the world to build up their capabilities to become more entrepreneurial and pursue new opportunities, and supporting policymakers to make more evidence-led and informed decisions.

Another motivation was a sense of **frustration with how things are done at the moment** – ranging from the way in which policy is developed and delivered to a lack of innovation in industries closely connected with the arts, humanities and social sciences (e.g. publishing, education). The desire to harness and disseminate their knowledge was often borne out of academics' exposure to these sectors through their research or personal lives. These researchers were driven by a belief that there were better ways to deliver key services or products that could result in societal (and in some cases economic) benefits, and that they had the knowledge and tools to provide practical solutions.

For some of thecases we examined, SSRC opportunities provided a mechanism to **raise new sources of funding to support research and its development into real-world applications**. Financial support was seen by researchers as particularly important to enable applied research and commercialisation-related activities that were perceived as difficult to pursue through existing university structures (this barrier is discussed in more detail in section 6.4). Commercialisation opportunities also provided a mechanism to **assemble and leverage additional capabilities** (for example, to hire people with specific skillsets) that are important for the commercialisation process but are difficult to establish within existing university structures and processes.

A few of our interviewees also noted that seeking of revenue-raising commercialisation opportunities allowed them to **develop greater independence as researchers** to pursue their passions rather than having to constantly chase grants.

SSRC opportunities also provided a vehicle for academics and researchers (at different stages of their careers, and excluding postdoctoral researchers) to **explore new career pathways**, particularly if they felt frustrated and limited by the existing academic career track. SSRC also provided some respondents with an outlet to **challenge themselves in new ways beyond the intellectual challenge** of their academic position, which they found exhilarating.

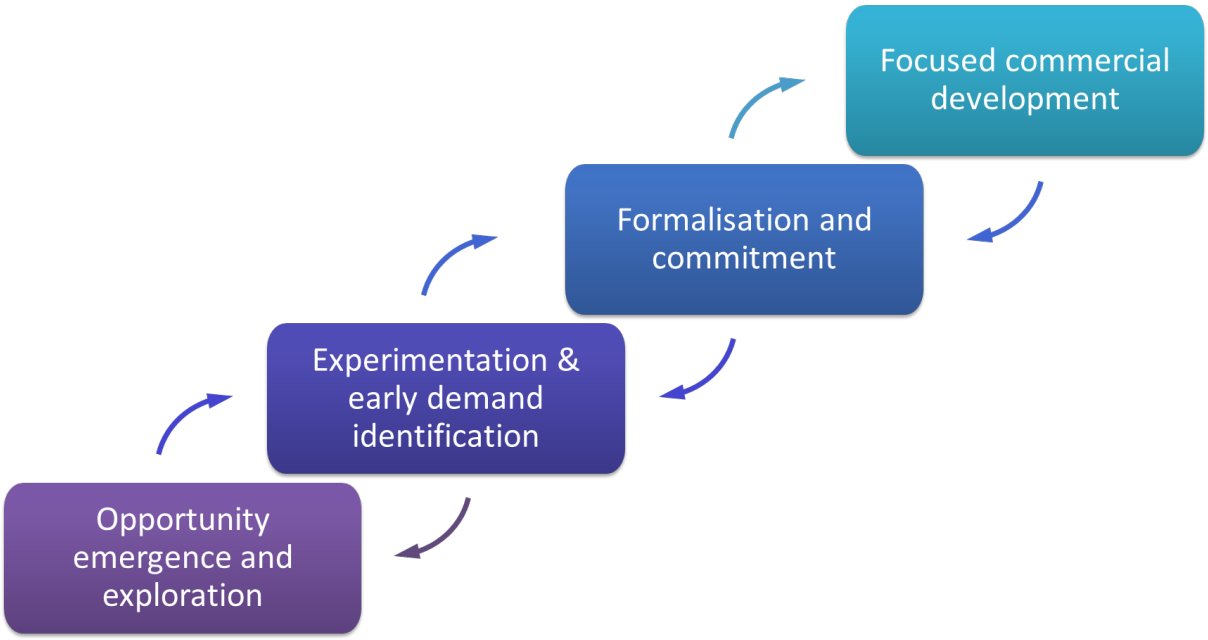
Unpacking the commercialisation journey

5 Unpacking the social science research commercialisation journey

In this section we explore insights from our twelve case studies on key aspects of the commercialisation journey. We focus initially on how the commercialisation opportunities emerged, before looking at how the commercialisation journey then typically progressed across our cases. This often included phases (Figure 5) during which:

- The opportunity begins to emerge and germinate
- The individuals experiment with the idea and gather early insights into potential demand for a product or service
- The entrepreneurial process begins to become more formalised and requires growing commitment from those involved
- The process becomes focused on what needs to be done to develop and deploy the idea commercially in the market

Figure 5 Key phases of the commercialisation journey



Of course, in many cases these phases do not follow a linear progression from one to another, but significantly overlap, with the subsequent phases building on the foundations laid by previous ones. Crucially, as those involved move through the journey, they may have to move back and forth, revisiting decisions, activities and learnings from previous phases to progress further[4].

[4] This is consistent with the work of Vohora et a. (2004) on the critical junctures experienced in the development of university spin-outs.

5.1 Opportunity emergence and exploration

The first phase of interest focuses on the emergence and exploration of an opportunity from the research being undertaken by the academic or researcher, or from the knowledge base they hold, which may have the potential to deliver value. During this phase a seed (or several seeds) are planted and begin to germinate. Across our cases, this phase typically occurred as the research continued.

Where do the opportunities come from? While in a few cases theyarose through deliberate search efforts, in many they presented themselves as a bi-product from activities in which the academic or researcher were involved. These were typically connected to their areas of expertise, and were being delivered to explore commercial opportunities from their research or knowledge base. Examples include volunteering projects, engagement with communities , and research activity (such as focus groups, interviews, field work) in which researchers engage with the public or a particular group of users in a particular location. This contact exposed them to real-world challenges and needs being faced by societies. Crucially, the social scientists were able to observe and internalise these challenges and needs, and given their expertise in the area, were able to leverage their research or wider knowledge base to imagine solutions that could help improve the outcomes of these communities. The larger 'market' for the solution may not be clear at this point, and the commercialisation opportunity begins with trying to solve a problem for a specific group on a small scale.

In other cases, it was exposure of the social scientists to industries and governments that resulted in frustration with the current set of products, services, and (policy) interventions (or lack thereof). Inefficient and out-dated processes by which these are developed, and which result in poor outcomes also led to offrustration and a sense that there "must be a better way" that can lead to better outcomes for society.

In some cases, opportunities emerged from the personal networks and experiences of the social scientist – with companies, policymakers, or in their local communities. Discouraged by the lack of provision of a service (e.g. education in a particular area, or public interventions to support marginalised communities), researchers realised they possessed relevant knowledge and insights that could help.

Substantial social science research is focused on understanding how societies function and methods of improving outcomes and relieving challenges faced. The high-profile nature of a social scientist's research and their active involvement in its public dissemination can also lead to SSRC opportunities. In one of our cases, the opportunity developed after multiple individuals with a particular need contacted the academic involved because they believed their research could help.

Finally, for some cases in our sample, the commercialisation opportunity was the natural progression of their research, and the individuals involved were actively seeking ways it could be developed into a commercial application.

Across all these cases, social scientists were able to identify an opportunity, and, crucially, if they had the desire to pursue it even on a small scale, they could leverage their research and knowledge base to solve a problem in the real world, and actively engage in the process of deploying it in practice.

5.2 Experimentation and early demand identification

This phase of opportunity emergence and exploration typically led to a period of exploration and experimentation. In many cases (although not all), this process of exploration and experimentation was relatively organic and informal, and shaped by the time, funding and opportunities available to the social scientist. For many, at the beginning of this phase, a scalable commercial route to delivering impact was not a goal; rather, solving a problem and deliver impact on a community was the driving force.

During this phase, many of the researchers in our cases sought to understand the nature and potential of the opportunity, and developed early ideas and approaches – or continued developing existing approaches – to meet the need. They continued to engage with users from which the commercialisation opportunity emerged and started to gather feedback from different sources on their approaches. The stage helped to challenge early assumptions not just about the nature and scale of demand but also about the value of the idea and its feasibility of being deployed in practice to address a challenge.

In a number of the cases we examined, academics managed to raise small amounts of funding (typically from the university) to explore the potential for impact and how to realise it. This allowed them to run a pilot project with a potential user to test out their approach and gather initial insights. For other researchers, the process focused on an incremental expansion of the (research and dissemination) activities that led to the opportunity in the first place. As the activities scaled, incremental developments and revisions to the initial solution met the growth in demand for involvement in the activity.

In some cases, the process appeared to be much more structured and formalised, with deliberate actions to seek early insight and validation of demand, developing an initial prototype and testing it with potential users.

5.3 Formalisation and commitment

At some point in the journey, what often began as a relatively informal process became more formalised. During this phase, those involved began to formally and systematically plan how to commercialise the idea. They variously:

- Confirmed (and internalised) that they had a valuable business proposition and began to think more systematically about how to commercialise it
- Became more focused and targeted about commercialisation opportunities, beginning to make choices about where and how to focus efforts
- Made decisions to invest time and effort in building a team and/or assembling the resources and relationships required to make progress
- Sought support and funding to begin considering how to commercialise their ideas; the support was informal from both friends and peers, and in many cases, through more formal channels
- Took steps to set up a company to channel their commercialisation efforts
- Identified other individuals to help drive the project forward, e.g. as co-founders in a possible venture

- Made decision to switch focus from supporting research-driven opportunities to thinking about commercial opportunities

During this phase, the social scientists involved often realised that they had to shift their mindset from one seeking to derive impact from their research to one that was more commercially-focused and entrepreneurially-driven to pursue the opportunity.

This phase often coincided with the need to make key decisions about whether to keep pursuing the opportunity and how much time and effort to commit. At this point, given the realisation of the scale of effort (and often sacrifice) required, several of our cases needed strong encouragement and support to continue with, and commit to, the journey. For those interviewed, this variously took the form of attending a workshop that validated their idea and capabilities, to entering and winning awards or prizes for early stage concepts, to meeting people with more knowledge of the commercialisation process who saw the potential, to feedback and encouragement from friends and peers.

It is also important to note that this phase is not always a specific point in time, but can take place over a longer timeframe often as the social scientist confronts career choices and struggles to combine the demands of a full-time academic position with the time and effort required to fully commit to commercialising an idea.

5.4 Focused commercial development

At this stage, the focus of the social scientist becomes centred on developing their concept into a commercially-viable application that can be deployed and scaled in the marketplace. In the cases we reviewed– possibly as a result of how the sample was identified – the next steps were often taken with the support of Cambridge Enterprise. The interviewees shared the following key activities:

- Investing resources in the development of the idea into a functioning product or service and finding ways to demonstrate its value to potential customers and users
- Assembling a team, and building relationships with key partners to help develop the application and move the opportunity forward
- Expanding engagement with users beyond those contacted during the early phases of the journey, and working to validate demand for the application
- Exploring different routes and options for commercialising the application
- Consideration of the value proposition and possible business models – in some of cases this took place late in the process and required rethinking the value proposition, target markets, and how to best deliver the product/service
- Piloting the product/service with initial users to generate valuable insights about the market, whether the product/service meet needs, and the viability of the business model
- Realising that approaches developed to meet demand on a small scale would not work as the product or service scaled-up; requiring changes to be made, particularly in relation to the business model
- Beginning to communicate with potential investors/other funders and commercial development partners about raising funds to support the continued development and expansion of the product/service

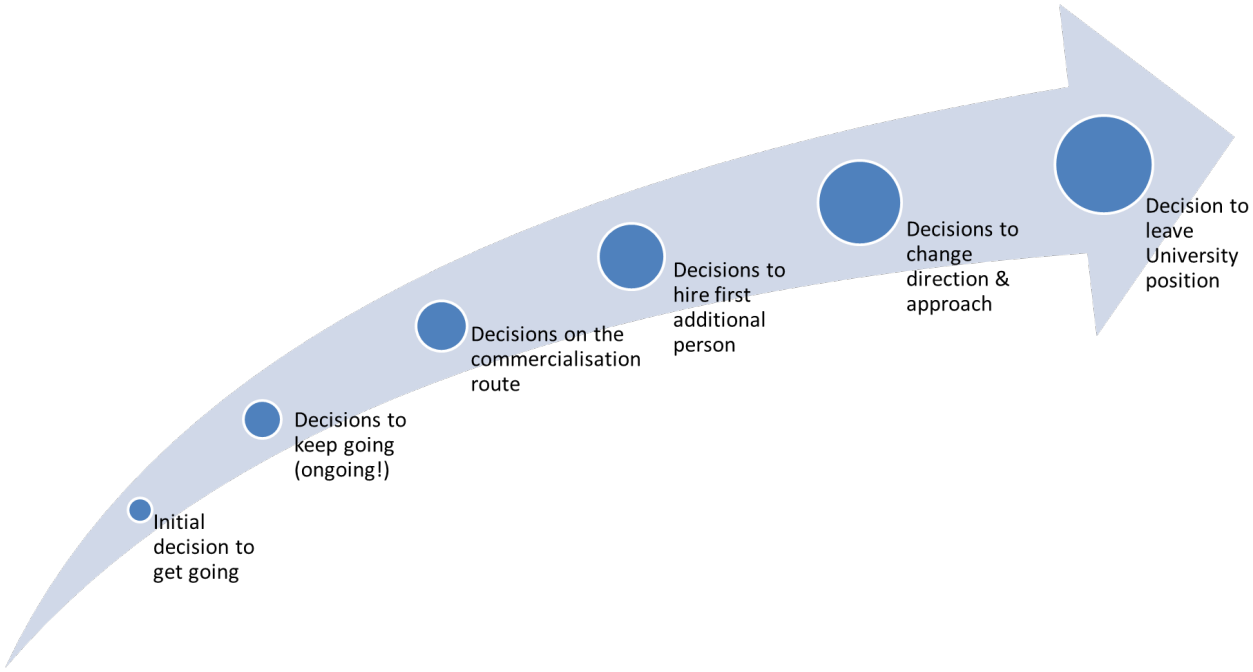
- Understanding the window of opportunity for deploying the product/service in the marketplace to maximise the chances of success. In some of the cases we analysed this could be key political or policy events such as spending reviews, elections or publications of major policy roadmaps
- Developing a comprehensive commercialisation strategy and plan that provides clarity over how to get from where they are currently to where they would like to be

In many of the cases reviewed this phase involved a lot of learning-by-doing – trying different ideas and options, learning from the experiences, and changing course and adapting as necessary. For some researchers, the process unfolded in a systematic way. For others the situation evolved much more organically and incrementally, advancing based on opportunities that emerged that required them to develop the product or service a bit further to meet a new or growing need, or on their ability to raise small pockets of funding from different sources. Often development was constrained by the time available to the academics and researchers involved, for whom commercialisation remained, even in this more formalised and focused phase, an activity additional to their full-time teaching and research workloads.

5.5 Critical decision points

The case studies also revealed that the social scientists involved with SSRC opportunities tend to face a number of critical decision points along their journeys. We define these points as ones where, had the researcher taken a different decision, the outcome would have significantly altered the course of the journey, or even brought it to an end. Reading across the sample of cases, we identified a number of critical decision points (captured in Figure 6).

Figure 6 Critical decision points faced during the commercialisation journey



The critical decision points include:

- The initial **decision to get going in the first place**; in many cases this was linked to the academic's exploration of the opportunities that appeared as their research activities progressed. Others took a deliberate decision to explore commercial opportunities from their research.

- The **decisions to keep going**; this decision was typically not experienced once and resolved, but confronted periodically, and often experienced during the transitions between phases. For example, following the emergence and exploration of the opportunity and having to decide whether to invest time and effort in finding ways to pursue it; following this phase of experimentation, making decisions on significant commitments to delivering the SSRC project; and at the point where an academic or researcher must adopt a commercially focused mindset in order to develop the product or service for deployment in the market.

- The **decision on the commercialisation route**, and in particular whether or not to set up a company, not least given the legal implications of this decision for the individuals involved in becoming company directors, and the level of public commitment this step would entail.

- The **decision to hire the first additional person** into the company or project, or to more formally involve another person in the project.

- The **decision to leave their position** at the university (e.g. academic, post-doctoral researchers or teaching roles) to pursue the opportunity full time (typically a new venture). Several of our respondents reached a point where it became too difficult to balance the time pressures of full-time job at the university with the needs of their SSRC project, and they had to decide which one to pursue.

- **Decisions to change the direction and approach** of the SSRC project. At this point, a choice can be made to pivot towards a different opportunity or market; to alter the function and structure of the product or service or delivery platform (particularly if technology-enabled); and adjustments made to the business model (e.g. to find new ways of generating sufficient revenue to cover costs).

Key barriers and enablers

6 Key barriers and enablers shaping the commercialisation of social science research

A number of studies have explored the barriers hampering the interactions between academics and partners in the economy and wider society to facilitate the exchange, translation and application of knowledge to enable and deliver socio-economic impacts. Large-scale surveys of academics have demonstrated how sets of barriers vary between academics in different disciplines (Hughes et al. 2016; Hughes and Kitson 2012).

While these studies provide a useful high-level overview of the types of barriers faced by those involved, they do not provide detailed insights into the specific types of interactions by specific communities – in this case, commercialisation-focused interactions involving social scientists in a world-leading, large research university based in the UK. Through our interviews we therefore intentionally explored the types of barriers and enablers experienced by social scientists at the University of Cambridge as they sought to commercialise their research.

In analysing the evidence gathered we isolated barriers that operate at different levels of the system and in different parts of the commercialisation process. Thes are captured in Figure 7.

Figure 7 Types of barriers hampering the commercialisation of social science research

6.1 Barriers relating to individual-level motivations and preferences

The first set of barriers mentioned in our interviews that hindered the development of SSRC projects towards commercial deployment were linked to the motivations, risk profiles, and preferences of the individuals involved. These include, in particular:

- **Personal motivation and 'activation energy'**. Pursuing the SSRC journey requires significant motivation, commitment, and energy from those involved to drive the process forward. It requires significant 'activation energy' to begin, and to shift the focus from individual projects to larger-scale commercial opportunities. This shift can be very challenging when the individuals involved already work full time, and alternative career options require less effort to deliver more stable and certain (financial) returns.

- The **personal financial and career risk** of undertaking SSRC opportunities, compared to other options that may be available (particularly for early career researchers and PhD students). These individuals may have multiple career and job opportunities available to them; committing to commercialisation of their research is typically much higher risk than other career paths.

- **Loneliness, and lack of self-confidence**. Entrepreneurship can be a very lonely endeavour, particularly during the early phases, and in departments where such activity is not (yet) common. These circumstances can result in personal difficulties including feelings of isolation, lack of belonging, and lack of confidence, as well as struggles to keep up momentum.

- **Willingness to undertake routine operational and commercially-focused tasks**. Delivering SSRC opportunities will typically require the academics and researchers involved to deliver tasks they may not be interested in (e.g. business management and more routine operational tasks), or tasks with which they may feel less comfortable (e.g. communications and marketing). These tasks are nevertheless crucial for making progress and building the commercial operation. This can result in key areas where development is needed for overall progress receiving less attention and investment of time and effort.

6.2 Barriers relating to entrepreneurial capabilities and resource development

Our interviews revealed a range of barriers linked to the need for skills development, entrepreneurial capabilities and tools to develop commercial propositions for SSRC opportunities. They included:

- **Lack of initial knowledge of commercialisation pathway options available**. Several interviewees highlighted that, early in the commercialisation journey they felt they lacked any knowledge and understanding of what types of commercialisation routes were possible, given they tended to have little or no experience of the process.

- The ability to **shift mindsets, and communication and marketing style** from being 'research-focused' to 'impact-driven' and 'commercially-focused'. Our interviewees highlighted how they learned to switch from approaches they had developed to secure research funding, deliver world-leading research, and communicate their research findings to academic audiences - to focus on delivering SSRC opportunities and communicating the scale and type of value the product or service delivers to intended users.

- The ability to **narrow down the vision and opportunity**. Researchers may prefer to keep multiple options open, not least to retain flexibility. At some point, however, decisions need to be made to focus the effort, which may create tensions between pursuing opportunities with the greatest potential to deliver social benefits and those that can be sustainable commercially.

- The ability **to understand the potential market and the willingness of users to pay for a service or product**, to inform decision-making about the business model, including pricing strategies, how best to access the market, and to demonstrate potential value to funders and investors. In many of the cases examined, the SSRC projects focused on non-traditional and under-developed markets where its potential size is unclear, and where market prices do not necessarily exist.

- The ability to **develop a suitable business model and commercialisation pathway**. Respondents highlighted the particularly challenging nature of this objective as many SSRC projects seek to deliver high social returns, subject to securing sufficient commercial returns to cover operational costs, as opposed to a more traditional profit-maximising venture or commercial project. Several interviewees felt few good options were available to them and pressured to choose between developing the SSRC project into a more traditional commercial venture or a charity, when they were seeking to develop a social impact-focused business.

6.3 Barriers relating to resource access and development

The social scientists involved in our study also faced challenged related to accessing, securing and developing the necessary resources required to deliver SSRC opportunities including:

- The **time commitment required of** individuals to invest in developing the SSRC opportunity. Academic staff, PhD students and post-doctoral researchers all have other priorities which can lead to a fear of losing momentum, especially if other opportunities seem easier to pursue.

- The ability to **find and recruit the right talent** within a university context to develop the commercially-focused product or service prior to taking it into the commercial sphere (e.g. through a new venture). One interviewee noted that they had engaged students to help develop the product/service, but they eventually all moved on. The turnover created disruptions to the development process, with the lead social scientist having to find ways of engaging new people to continue the progress made by the students.

- The ability to **find the right kind of funding** given the nature of an opportunity and the stage of development of the project, coupled with the reality that intended users and clients in this sphere typically have little money to invest in this type of development activity. Particular challenges included identification of the resources necessary to implement recommendations from workshops and training events; support with grant writing to access highly-competitive public grants; and the ability to host funding for development of an idea into a commercial application within traditional university structures.

- The **fragmented nature of the university, and of different sources of support,** can pose difficulties for researchers trying to locate relevant funding, support, and people. Interviewees emphasised the importance of raising awareness of the many sources of support available.

6.4 Barriers related to university structures, processes and incentives

The fourth set of barriers related to university structures, processes, and incentives that social scientists were operating within. These included:

- **University structures and processes** can make it harder to undertake certain types of activities within the academic university setting that are no longer research but are important for developing research findings and ideas into commercially viable applications. This included perceptions of a lack of an appropriate 'home' within the university for social scientists to undertake these more commercial activities; the ability to access and procure specialist capabilities and resources; and the ability to recruit the people with the necessary skills into SSRC projects given the available employment contracts and salary structures.

  Several of interviewees noted that these more structural rigidities can consume a lot of energy when trying to pursue commercialisation opportunities within a university setting while also delivering on their core staff duties. In such scenarios, energy and resources are diverted away from where it is needed most to develop a socially-impactful, commercially-viable product/service.

- **Cultural barriers**, particularly within the social sciences, arts and humanities, where both leaders and academic peers are less likely to be familiar with commercialisation than researchers in other disciplines. There may be fewer colleagues or peers able and willing to provide the necessary encouragement, support, and advice. Overall, it was felt there was a lack of people who can act as visible champions, and in particular those that have done it before, to provide this encouragement, support, and advice.

- **Employment contract terms** can create disincentives for researchers to engage in SSRC projects, particularly for those where contractual obligations leave little time flexibility in delivering duties.

- **Lack of recognition of the value of commercialisation activities and empowerment to deliver**. This was particularly acute if the individual involved was not a Principal Investigator

(PI) (e.g. for social science postdoctoral researchers or PhD students). In such cases those involved have to find PIs to enable their activities, for example to host grants, recruit, and authorise activities. Coupled with the lack of empowerment to deliver, it can create added hurdles and disincentives for researchers seeking to engage in the commercialisation process and invest the effort necessary to succeed.

- **Lack of formal department-level support mechanisms**. Several of our participants noted that while departmental leadership can be supportive informally, they can lack formal mechanisms to both support encourage SSRC projects and recognise the value resulting from them. This made it difficult for those involved to convert the opportunities they were identifying and exploring into more formal commercialisation-focused activities within their departments. This led some to seek new organisational / departmental 'homes' for their projects that would be more enabling of their ambitions.

  The lack of support extended to difficulties in freeing up the time needed to invest in developing their commercialisation opportunities. This reflected comments by many of our interviewees that dedicating sufficient time and effort to their SSRC projects alongside a full teaching and research workload was a challenge and resulted in personal and professional difficulties. Some called for help to buy-out their time from their contractual obligations for a fixed period of time, to allow them to devote sufficient time and energy to the pursuit of their commercialisation opportunity.

6.5 Key enablers

While the aforementioned factors hampered the ability of our interviewees to pursue SSRC opportunities, participants also highlighted a range of factors that acted as key enablers for them (Figure 7).

Figure 8 Types of enablers facilitating the commercialisation of social science research

The interviewees variously highlighted the following details:

- **Convening and networks.** Social and professional networks in Cambridge provided access to help. The city benefits from a high density of different types of people who can provide support, advice and resources (including complementary intellectual input) to help drive the commercialisation process forward. These networks – facilitated in some cases by the Colleges – make it easier to identify partners, co-founders, and people who can help address specific problems. Interviewees particularly highlighted the **value of events where people can meet and learn**, and help signpost entrepreneurs to appropriate support (both within the university and elsewhere in the local ecosystem). Indeed, efforts to convene people and build networks within the social sciences were particularly important for some researchers when it came to raising awareness and demonstrating the value of commercialisation as a legitimate activity.

- Value of **programmes that engage students** (e.g. MBAs) to provide support and insights to the commercialisation process, for example, through market research studies to support the development of the opportunity, or the contribution of data scientists and engineers in the development of technology platforms to enable the delivery of the social science-enabled product or service.

- **External validation** can provide a significant confidence boost to social scientists, demonstrating that the SSRC journey is worth investing time and effort in pursuing. This validation can come in different forms, for example, through the awarding of prizes, winning grants, and positive feedback from potential customers and users.

- **Proactive and practical support** provided by Cambridge Enterprise. Interviewees variously highlighted:
    - The value of signposting to key resources and networks, and making introductions to contacts both within the university and externally that can help build momentum
    - Providing tools and resources to support the development of SSRC projects
    - Helping academics to reframe their thinking towards commercial opportunities and challenging them to ask different questions
    - Supporting researchers to develop their value proposition and identify and explore different business models.

  In addition to providing support services and resources, several interviewees noted that having someone within Cambridge Enterprise who was interested in their project and committed to seeing it develop was incredibly valuable. In this way, the social scientist gained a peer who could provide encouragement, where this may be lacking within their own department.

- **Funding**. Access to funding was an important enabler. The interviewees variously highlighted the value of:
    - **Impact-focused and translational funding** availability and access
    - **Bridging funding** to allow individuals the time and space to explore the emerging commercialisation opportunity and its potential for success without having to commit fully (i.e. de-risk the personal decision to commit too early)

    - **Help with securing funding**, even small amounts. It was noted that social scientists working full time often do not have time or knowledge base to apply for impact-focused funding.

- **Mentoring and training** was also highlighted by our interviewees as an important enabler. They can help to nudge academics who are interested in realising impact from their research towards pursuing commercialisation as a route to delivery. Proper support de-mystifies the process while providing advice and encouragement, helps to achieve visibility on opportunities and how to realise them, and giving the social scientists the tools and skills required to deliver the commercialisation project (e.g. around assessing market potential; constructing and demonstrating the value proposition; developing business plans and pitch decks, and effective organisation design and management etc.). Initiatives variously referred to by our interviewees included training programmes provided by the Judge Business School, Social Ventures Programme, Cambridge Enterprise and the Maxwell Centre.

- **People to share the process with and supportive colleagues**. Having multiple people closely involved in the process can help to reduce feelings of isolation and loneliness that can come with pursuing this type of activity. This risk may be more acute in parts of a university where such activity is uncommon or where people might question its legitimacy. Several interviewees espoused the benefit of having a co-founder, or other individuals directly involved in delivering the SSRC project. Additional team members helped to solve problems and provide alternative perspectives; maintain momentum; and played a role focusing efforts and challenging approaches. Supportive colleagues, particularly those with PI-status, were also seen as valuable, both in providing encouragement and support, and in helping to enable key activities such as bringing in funding to the university or assisting recruitment.

The need for support, insights and tools

7 The need for further support, insights and tools

Almost all of our interviewees received some degree of support from the University. Reflecting on their journeys to-date, the challenges they faced, and their planned pathways to commercialisation, they identified key areas where they believed better tools, insights and support were needed to make the process easier, faster or more efficient and more satisfying. The variously highlighted the need for:

- **New business models for commercialising social science research**, particularly where the social scientists seek to develop opportunities that deliver high social returns through commercial routes and must therefore generate sufficient commercial returns to cover operational costs and, if necessary, provide sufficient returns to investors or funders. Interviewees felt they currently lacked options to achieve this, often feeling forced to choose between adopting more traditional company structures or setting up charities instead.

- **Greater help with finding mentors and individuals who can provide strategic-level advice and expertise**, such as experienced entrepreneurs who have succeeded in commercialising social science research. They can help to anticipate challenges, identify viable options, and help navigate what is perceived to be a complex and challenging process for those that never done it before.

- **Assistance with finding potential co-founders and motivated individuals** interested in joining the commercialisation project and driving it forward.

- **More funding to support the commercialisation process**, for example to buy-out time to allow social scientists to commit more fully to the development of a product or service; 'bridging funds' to allow them to de-risk opportunities before having to fully commit and make the decision to leave their jobs; and the provision of translational/impact funds to translate researchers' ideas into commercially-viable products and services.

- **Greater support to access funding programmes**, and helping academics to apply for funding (e.g. Innovate UK). This need reflected in part the lack of experience in and knowledge of writing applications for impact-driven funding or investment, and the difficulties in securing these types of funding.

- **More support for social scientists along the commercialisation journey**, in particular with exploring and identifying commercialisation opportunities emerging from their research, making choices during the experimentation phase to prioritise efforts and focus, and developing the value proposition and business model.

- **More localised commercialisation support within social science departments** but strongly linked to Cambridge Enterprise. Ideally this would raise awareness of commercialisation as a legitimate activity linked to research, help solve local problems and overcome local barriers, and provide an easy pathway to university-wide support and funding.

- **Training to help social scientists acquire the necessary entrepreneurial *and* commercial skills and tools** to develop their ideas into commercially-viable products and services, and to build their capability to run more commercially-focused organisations and initiatives.

- **Strengthening incentives and removing structural barriers to engage** in social science commercialisation. This included contractual issues making it harder for social scientists to engage in commercialisation, a lack of incentives and legitimacy within social science departments for this type of activity, and the way in which social science funding is structured.

- **Recognising that not all individuals leading the commercialisation of social science research are academics with PI status** on permanent academic contracts. Much of the discussion around social science research commercialisation typically focuses on academics. However, a not-insignificant number of the projects we studied were being driven by postdoctoral researchers and PhD students. They can face additional (and sometimes significant) barriers due to the lack of autonomy and empowerment, fragility of contracts, and lack of a sense of a 'home' within the university. This groups of researchers may also have alternative career options available to them that can appear very attractive from a financial and job security perspective. Unless we also work to de-risk the commercialisation process from a career development perspective, it is likely that we will not fulfil the impact potential of commercialisation out of the social sciences.

A new home for social science commercialisation activities within the University?

One suggestion arising from the testimony collected at interviews was for **a new 'home' – organisationally and physically – within the university for social scientists to pursue commercialisation activities**. This call reflected the challenges faced by the social scientists we spoke to in undertaking commercialisation activities within more traditional departmental structures. The aim would be to make it easier to bring in different types of (non-research) funding, enable more agile procurement and contracting, allow projects to recruit different types of people, better align incentives, and enable much greater recognition of value of commercialisation activities – to the University, to the individuals involved, and to wider society. A new 'home' would also bring together a community and network of like-minded individuals, helping to strengthen peer support, work together to solve problems, increase motivation and keep momentum going.

Towards a tool

8 Towards a tool for capturing the readiness of social science commercialisation projects

This study encompassed an exploration of the potential to develop a tool that could help to identify progress of SSRC projects towards being ready for deployment in the commercial world. One potential method is through 'readiness' levels.

Readiness level-based frameworks have been used to assess the maturity of projects for application in the real world for many years. They were originally conceived as technology readiness levels (TRLs) by the US National Aeronautics and Space Administration (NASA) in the 1970s to support its efforts to deliver space operations. The goal was to assess each technology based on a consistently defined set of maturity levels ending with the technology fully proven and deployed in the real world at the necessary scale to achieve the mission goal (Mankins 1995).

Since then, the use of such readiness levels frameworks to measure progress of projects towards real world applications has become widespread, particularly in technology-based fields. These frameworks have expanded beyond the core focus on the development of the technology to include other dimensions seen as critical to its ultimate deployment a as a product or service in the real world delivering impact (see e.g. Holden 2022 for the sustainable circular bioeconomy; Vik et al. 2021). Frameworks tend to emphasise dimensions that are relevant to their particular case; for example, Vik et al. (2021), in developing a balanced framework for exploring new and emerging technologies, focused on readiness in the following areas; technology market, regulation, (social) acceptance and organisational. KTH Innovation – the innovation office at the KTH Royal Institute of Technology in Sweden that helps their staff and students commercialise their ideas – developed a readiness framework to assess project progress towards commercial application. It highlights six key readiness dimensions: technology, intellectual property, business model, team, funding, and customer.

More recently, people have started to explore social or societal readiness as part of these frameworks, particularly where the focus of the project(s) is a societal impact goal. Such tools consider readiness level of societies for adopting the solution (Holden 2022; Innovation Fund Denmark 2019). If the level is low, then considerations of how to increase social acceptance are needed.

In identifying potential dimensions along which to measure progress and 'readiness', there are several existing tools that have been developed to help individuals looking to start new ventures or to commercialise projects and technologies. Examples include the Institute for Manufacturing's ESV Concept Development/Start-up Assessment tool, the business model canvas originating from the work of Alexander Osterwalder (Osterwalder and Pigneur 2010) and derivatives such as the Lean Canvas Business Model (see Aspect 2020 referencing www.leancanvas.com). These tools are typically designed to ask challenging questions of those involved about their level of preparation in areas important to the development and realisation of the commercial opportunity. Ultimately, such

questions help to isolate key areas where projects need to develop further in order to achieve commercial deployment and success.

Bringing these various insights together allowed us to interrogate the information we obtained from our interviews, namely how SSRC projects developed along the journey from opportunity emergence to the realisation of a product or service that was being (or ready to be) applied in the commercial world. Through this approach, we identified the following key dimensions along which progress typically needs to be made in order to translate emergent SSRC opportunities into commercially-viable applications that can be successfully deployed in the market.

- **Knowledge asset** (concept/technology etc.) readiness (including developing the core asset into a product or service for use in a specific application context, demonstration of its value and ability to scale-up supply to meet full market demand)
- **Complementary technologies/assets** readiness (scale of preparedness of the wider set of technology or assets required to develop, scale and deliver the product or service)
- **Business model** readiness (including value proposition, commercialisation form, value chain and partners, revenue/cost model etc.)
- **Intellectual property** readiness (including due diligence, protection methods for IP generated *and* handling IP associated with ingesting data etc.)
- **Personal and team** readiness (important to distinguish between team skills – including communication and marketing – and their readiness in terms of personal commitment, motivation and confidence)
- **Funding** readiness (access and availability of relevant and adequate amounts of funding, ability to secure funding, develop pitch decks etc.)
- **Customer/market** readiness (including windows of opportunity, demand conditions, customer absorptive capacity, market entry barriers)
- **Societal** readiness (e.g. social acceptance, legitimacy, ethical) for the product or service
- ***Institutional (regulatory, policy, legal etc.) readiness*** *(not discussed in the interviews, but a significant aspect of readiness mentioned in the literature)*

Progress will need achieved across most, if not all, of these readiness threads for (eventual) successful commercialisation of products or services.

The ability to advance along these threads is hampered through barriers experienced by the team, yet facilitated by key enablers. For example, we heard several examples where a team felt they had to take their project into the commercial world earlier than perhaps desirable (e.g. by setting up a new venture) in order to make further progress in key areas as they were finding it too difficult to advance within university structures. It is also shaped by the internal context and dynamics within which the social scientist is embedded (e.g. department environment) as well as the external context (including regional and national contexts and dynamics, and sector(s) of the economy and society they are seeking to engage).

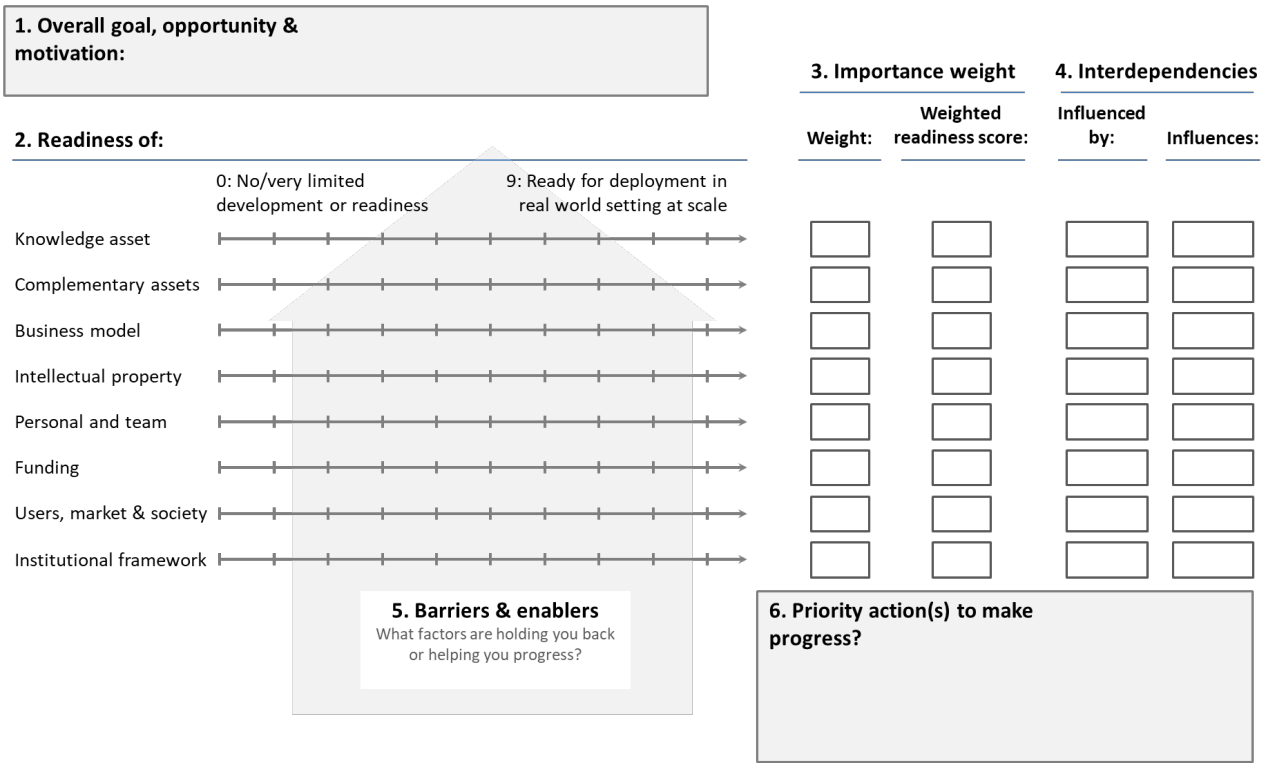
We must also recognise that there are important interdependencies between readiness threads, with lack of progress in one area preventing advancement in another; and advances in one area unlocking the ability to progress in another. Further work is needed to understand the nature and strength of these interdependencies, and the extent to which they influence overall progress.

Many of these types of readiness threads are observed in commercialisation projects emerging from the more science and engineering-focused disciplines. However, a key difference for social sciences is the nature of what is happening as the project develops in each of these threads, and the intensity of the barriers experienced. For example, the challenges of securing funding to develop new ventures and opportunities driven by social impact rather than commercial goals; a paucity of business models options; a lack of understanding of how to price the product or service; and weaker incentives for academics to engage and difficulties in building teams to drive commercialisation.

Towards a prototype tool for tracking the progress of social science research commercialisation projects

The above insights have been brought together to develop an early prototype tool for tracking the progress of SSRC projects towards successfully developing a commercially-viable product or service that has been deployed in the market. The prototype tool is shown in Figure 9.

Figure 9 Towards a potential framework for tracking progress of social science research commercialisation projects towards successful deployment



The key elements of the tool are as follows:

1. Define an overall goal for the SSRC project, including articulation of the commercialisation opportunity and the motivations that drive those involved, to guide efforts towards a key target. These goals should be revisited periodically to ensure ongoing relevance in light of new insights.
2. Review each key readiness thread and score how much progress has been made in developing a viable product or service able to be deployed in the commercial world – further work is required to define the meaning of specific points on each readiness thread.

3. Determine the importance of each readiness thread for its ability to contribute to the successful development of a viable product or service that can be deployed in the market. This could take the form of an estimated weight that could be applied to a thread's score, capturing progress on each thread to generate a weighted readiness score.
4. Identify interdependencies between each readiness thread specific to the SSRC project, identifying factors that influence each thread (i.e. the extent to which progress in other threads is required to make progress in the target thread), and how progress in that thread can enable advances elsewhere.
5. Identify the key barriers that are holding the project's development back or the enablers helping it to progress, with a view to determining where mitigations can help to accelerate progress. This includes the influence of prevailing internal and external conditions and trends/drivers that shape the environment the social scientists operate in, and which may influence their choices and actions.
6. Taken together, identify and prioritise tangible actions that can help to advance the project towards its stated goals.

It is important to note that this is a first attempt to develop a prototype tool to track progress of SSRC projects and identify target areas where further support is needed. Further work and testing would be required in order to be confident that it delivers value to the process. Such work was beyond the scope of this study.

Summary and concluding thoughts

9 Summary and concluding thoughts

This report explored the nature and variety of efforts undertaken by social scientists at the University of Cambridge to commercialise their research. Specifically, the journeys they navigate, the nature of barriers and enablers that arise whilst progressing their commercialisation projects, and how the process could be made more effective and efficient. Leveraging insights from an analysis of an internal database of 127 commercialisation projects and in-depth interviews with participants from 12 cases on these topics, we propose a prototype tool that has the potential to assess progress of social science research commercialisation projects and identify where greater support may be needed.

Key highlights from the report are captured below.

Social science commercialisation covers a wide variety of projects, many of which are seeking to deliver positive social impact at scale by leveraging the market mechanism. We found that characterising projects based on (i) the *type of knowledge asset* emerging from the social science research upon which the commercial opportunities are based, and (ii) *how this knowledge asset is developed and packaged* into a product or service, helps to provide much needed structure to the landscape.

We further found that while many of these projects originated from social science, arts and humanities departments, a sizeable number emerged from science and engineering departments (where commercialisation activities are more common and embedded). This has important implications as departmental culture, processes and support are known to shape academic behaviours and choices (i.e. whether to pursue commercialisation opportunities or not). We also showed that while many SSRC projects focused on applications in sectors we might traditionally associate with social sciences – the public sector and public services, cultural industries, education – many were focused elsewhere, including in manufacturing, health, construction and retail.

Our analysis of barriers also revealed important challenges facing social scientists who seek to commercialise their research. These included factors linked to individual motivations and preferences, including the challenges associated with feeling isolated and a lack of self-confidence as they pursue commercialisation activities within parts of the university where this is uncommon. Barriers also exist around the entrepreneurial capabilities of the social scientists, skills that are required to shift from delivering research to developing and deploying commercially-viable products and services. Barriers also emerged over the ability of those involved to secure the necessary resources to drive the project forward, including their capacity to devote sufficient time to the project while they (typically) juggled these demands with those of their full-time position at the university.

A range of barriers also emerged relating to the difficulties in delivering activities within a more traditional university setting that are no longer research but are important for developing ideas from research into commercially viable products and services. This included difficulties with procuring goods and supplies and recruiting different types of talent, employment contract-related issues making it harder to devote the time necessary to commercialising research, and embedded attitudes and cultural aversion to commercialisation at the local level, alongside the perception that this type

of activity is not valued. In addition, we must also recognise that the individuals involved in driving projects forward may not be academics on permanent contracts with principal investigator status This status matters as postdoctoral researchers and others can lack the autonomy and empowerment to advance projects.

The study also uncovered a number of enablers to commercialising social science research. Participants especially valued the networks and efforts to convene individuals from across the university and wider ecosystem to create a community of support, encourage learning, facilitate introductions and provide signposting to additional resources and support. Indeed, researchers highlighted the value of having other people more directly involved in their project (or actively supporting it) and being able to share the process with others. Value was also ascribed to instances of external validation – for example, winning awards and prizes, securing funding, or receiving encouragement and feedback from key individuals or stakeholders. Such successes can help to provide significant confidence boosts to social scientists, and give them drive to keep going with the commercialisation process. Of course, funding was also an important enabler, as was the proactive and practical support provided by Cambridge Enterprise.

Looking forward, our study identified a number of areas where further insights and support may be required. These included:

- The need for more funding, including impact and translational funding, funding to buy-out the time of the individual from their existing contractual obligations, and funding to allow them the space to experiment with their ideas before having to make tough decisions around whether to pursue the opportunity more formally. Also required was greater support to secure funding, recognising that the applications for impact-driven, translational and commercialisation-focused funding can require different skills to securing research grants.
- The need to develop new business models that are better tailored to the needs of social scientists and the opportunities they pursue.
- The need to tackle structural barriers and disincentives within universities that hamper engagement of social scientists in the commercialisation of their research.
- The need for more localised support, strongly linked to proactive and practical university-wide support.

The study also surfaced calls for an appropriate ‘home’ – organisationally and physically – within the university to allow social scientists the space and support to pursue commercialisation activities linked to their research activities. This request reflected the challenges social science academics and researchers faced in undertaking commercialisation activities within the more traditional departmental structures of the university. In creating a ‘home’, the aim would be to make it easier to bring in different types of (non-research) funding, enable more agile procurement and contracting, allow projects to recruit different types of people, better align incentives, and enable much greater recognition of the value of commercialisation activities. It would also help to build a highly-visible community and network of like-minded individuals that could strengthen peer support by working together to solve problems, increase motivation, maintain momentum, and raise awareness of the value of this type of activity.

In reviewing the experiences and insights gathered and comparing these with our own knowledge and experience in supporting and studying commercialisation processes from science and engineering disciplines, we would suggest that the overall process and tasks that have to be delivered look broadly similar. Within each task, however, the challenges faced can differ. For example:

- When developing business models, there is much greater understanding of what these can look like in many areas of science and engineering;
- When seeking funding, the value proposition may be more easily understood and socialised with investors who may lack experience in investing in the types of opportunities emerging from social sciences;
- When seeking to build teams to drive forward the commercialisation project, lab-based science and engineering groups often see their postdoctoral researchers become more focused on developing the opportunity, while social scientists are more likely to work alone and have to invest much more of their own time early on to develop the opportunity;
- When seeking to secure the value of the asset, the intellectual property at the heart of the commercialisation opportunity can be much more intangible than in science and engineering and therefore harder to protect.

This report comes at a time of rapidly growing interest amongst funders of social science research and knowledge exchange, universities, academics, and others in how to better leverage commercial routes and the market mechanism to enable social science research to drive economic, societal, and environmental impacts at scale. Our study engaged with a wide range of exciting projects that have the potential to deliver significant impact to the world. As we consider how we can better support this community, our exploratory study provides insight into possible actions that may accelerate progress and unlock even more of the potential value that can be realised from social science research.

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