



Project and programme research centres

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Project and programme research centres: Lessons for scholarship, policy and practice





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- Terry Williams, professor of management science, University of Hull.

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Daniel Nicholls, APM research manager

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1. Introduction

Project research is crucial. It shapes professional standards, including the *APM Body of Knowledge*, helping practitioners to assess personal, project and programme performance and informing their professional development via a range of critical institutions. Such research is essential, because projects are increasingly important in all sectors and organisations (APM, 2019). However, project performance is often dismal (NAO, 2016). Projects often have substantial cost and schedule overruns and under-perform on delivery. The large, complex, controversial and software-intensive projects of the kind that the UK is investing in often perform particularly poorly (Flyvbjerg, 2017; Meier, 2008; Miller & Lessard, 2001; Morris & Hough, 1987; Nightingale & Brady, 2011). Given the scale of current investment, even tiny percentage improvements could generate billions of pounds of benefits.

Despite their prevalence in practice, the scope and influence of projects in the project-related literature remain unclear. This is reflected, for example, in conflicting views about the level of temporariness of projects (Bakker et al, 2011; Cattani et al, 2011), the bounds of the project environment (Engwall, 2003) and how to characterise project capabilities and learning (Davies & Brady, 2000; Nightingale & Brady, 2011). Perhaps differences are most acute with regards to how project performance should be measured (Denicol et al, 2020; Miller & Lessard, 2001; Samset & Volden, 2016; Shenhar, 2001; Shenhar et al, 2001).

This theoretical ambiguity is mirrored in practice, where questions arise as to the efficacy of project management accreditation given its bias toward technical tools (Morris, 2013; Morris et al, 2006; Pinto & Winch, 2016). Moreover, existing public sector guidance is often anecdotal and is rarely validated by robust research. While it is based on best practice, best practice is not necessarily good or a solid basis for enhancing future performance. As such, existing tools are at best insufficient for dealing with the uncertainty within which projects are often embedded and for significantly improving project delivery.

Project-research and practice ecosystems

There is widespread awareness that multiple organisations are carrying out project-related research in a variety of ways. However, there is no single source available that provides information on these global institutions.¹ To make a start in this direction, this exploratory study collates a list of such organisations. We seek to understand the different institutional models that have been adopted globally to facilitate formal collaboration between universities, professional bodies, government and industry.

In so doing, we find that there is no pre-existing template for how such organisations are designed. However, they generally present as knowledge ecosystems that are dynamic in nature, continually developing and characterised by interrelation and co-evolution among actors over time (Ritala & Almpantopoulou, 2017).

Regardless of the form of organising, understanding the nature of academia-policy-practice ecosystems provides an insight into the work that they do, lessons about how to design such ecosystems and the opportunities that they afford affiliated researchers, as well as public and private sector partners. This contributes to a deeper understanding of both the projects community and the organisation and evolution of knowledge ecosystems. The latter, in particular, is in line with a previous call for more research in this respect (Järvi et al, 2018).

Knowledge ecosystems generate many benefits for universities and affiliated organisations. Thus, the report serves as a resource for those carrying out, or seeking to carry out, project delivery research. To that end, this report looks to map the landscape of project-related institutions by identifying those that triangulate policy, practice and scholarly outcomes. More specifically, the report has three purposes:

1. Identify independent, semi-permanent research institutions that have access to data on government projects and research that data to come to useful conclusions.
2. Conduct in-depth investigations of those institutions with equivalent and related profiles to establish if there is a model that Project X can use to advance the current ESRC funding base.
3. Present key research areas that would benefit from increased collaboration between universities, professional bodies, government and industry.

“There are multiple organisations carrying out project-related research in a variety of ways. However, there is no single source available that provides information on these global institutions”

Project X

¹For terminological clarity, we use the term “institutions” in an overarching sense, encompassing both formal and informal synonyms like ‘centre’, ‘organisation’, ‘entity’, ‘group’ and ‘programme’.

“Robust research on project delivery is needed to inform both academic research and practical training”

Project X

Our findings suggest that there are multiple organisations carrying out project-related research in a variety of ways. However, with no single source available that provides information on these global institutions in one place, awareness of the work that they do is somewhat disparate and fragmented. Though we cannot claim to provide an exhaustive list of project and programme research institutions on a global axis, our aim with this study is to provide a starting point for the mapping-out of these global institutions. In doing so, the authors seek to raise awareness and promote a better understanding of these institutions to the project world.

The rest of this report is structured as follows:

Section 2 presents the guidance for practitioners and senior leaders.

Section 3 presents the methods and data description.

Section 4 provides in-depth cases.

Section 5 provides an overview of the key lessons learnt from the research.

2. Summary of findings

This report aims to explore whether there are currently any semi-permanent research institutions that have access to project-related government data and actively use this data to come to useful conclusions for research, policy or practice. To do this, we took a multi-method approach, as outlined in Section 3, to identify existing project and programme research (PPR) organisations operating at the interface of policy, practice and scholarly outcomes.

In addition to developing a non-exhaustive global list of PPR-related organisations, this report presents a deep dive into four illustrative examples of such organisations. In doing so, we observe the commonalities and disparities between the strategic and structural developments, extant form and motivations from across the case studies.

Based on an examination of these four cases, our key observations are as follows:

- **Collaboration** – collaborative relationships established and maintained across the 'golden triangle' of business, government and academia can be mutually beneficial through the co-creation of outputs that contribute to each party's strategic objectives and reputational footprint.
- **Interdisciplinary work** – working across intellectual boundaries can deepen and expand the potential for innovative knowledge exchange across fields, sectors and organisations.
- **Balancing long-term/short-term outputs** – a fundamental tension exists between an institution's long-term and short-term demands for output. There is no blueprint for managing this tension. Instead, it must be aligned and periodically managed against each organisation's mission.
- **Mentorship and leadership** – beyond building research capabilities, harnessing the capacity for a future generation of strategic decision-makers is crucial for the continuity of PPR organisations.
- **Entrepreneurial funding generation** – funding provides security and the opportunity for long-term planning and recruitment, both of which are crucial for research continuity and creating an impact in academia and practice.
- **Network convening** – Ultimately, PPR institutes convene networks across business, government and academia, which requires that the right people show up at the right time. This calls for exploring interesting and relevant problems which attract researchers and practitioners. Professional associations have an important role to play in this regard.

Implications for practice

The findings in this report have practical implications for three types of actor – those attempting to develop project-related institutes, actors that are part of such institutes and those who seek to collaborate with them. For institute developers, the report highlights the various ways that an institute can be structured both strategically and structurally. It also provides insight into potential collaborators doing complementary work. For those who are part of such institutes, it provides a bird's eye view of how one's institute fits into the global landscape and compares with other institutes. Finally, for those from the private or public sector looking to collaborate with such institutes, the report outlines the range of benefits that such a collaboration can spur.

"Some of our deep insights were only possible because we managed to maintain long-lasting collaboration with some firms, which enabled us to see how things evolved over time rather than having a snapshot of a project within the firms. That is why having long-term funding and ongoing relationships with firms and policy people is so crucial for research institutes' success"

Professor Tim Brady,
former deputy co-director,
ESRC Complex Product
Systems Innovation Centre

3. Methods overview and data description

To build greater awareness of the institutional landscape for PPR, we sought to identify organisations operating at the interface of policy, practice and scholarly outcome. We were particularly interested in research institutions with independent, semi-permanent profiles that have access to data on government projects, and research that data to come to useful conclusions. To populate a database of institutions, we adopted a variety of data collection methods: cold-emailing, web-based searches and semi-structured interviews.

More particularly, data was collected in three phases. During Phase 1, we focused on building a sample of relevant organisations by contacting a sample of established project-oriented professional bodies, including member associations of the Project Management Institute (PMI) and the International Project Management Association (IPMA), of which APM is a member. For a full list of the professional bodies and associated members contacted, see Appendix A. In addition, we consulted senior scholars and practitioners familiar with the specialist landscape of PPR institutes. From the responses gained, we identified 67 institutes from across four regions – Europe, the Middle East and Africa; Asia Pacific; North America; and Latin America, as illustrated in Figure 1.

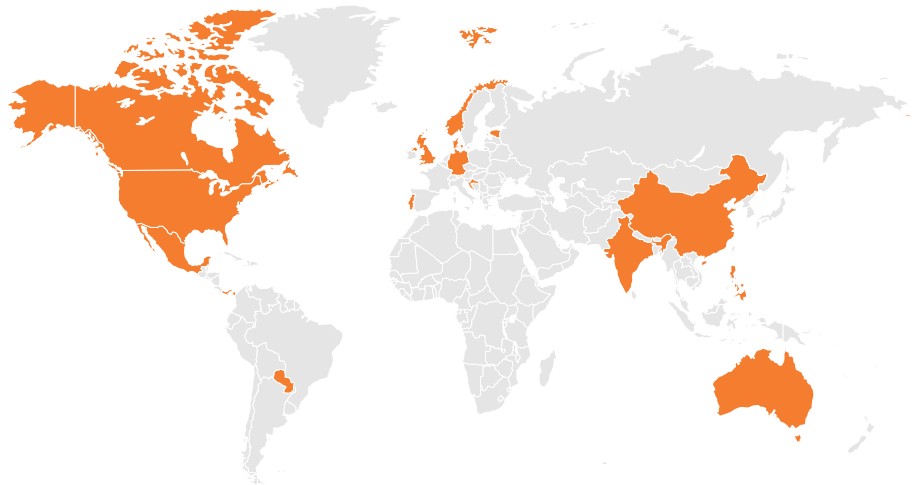


Figure 1: A map illustrating the location of the institutes as recommended by professional bodies and academics from the field of project management

“To populate a database of institutions, we adopted a variety of data collection methods: cold-emailing, web-based searches and semi-structured interviews”

Observing Chart 1 (see page 10), the highest proportion of the 67 identified institutes are located in Europe, the Middle East and Africa (70 per cent), though from this grouping the majority represented EU member states (Austria, Croatia, Denmark, Estonia, Germany, Luxembourg, the Netherlands and Portugal), as well as Norway, Switzerland and the UK. Of the institutes identified in Asia Pacific (13 per cent), all are located in Australia, China, India and Singapore. Eleven per cent of the institute sample are located in North American territory, both in Canada and the US. Finally, the smallest proportion (six per cent) of institutes recommended are located in Latin American countries (Panama and Mexico).

Of the 67 institutes identified, 34 per cent have university affiliations, 11 per cent are private organisations, 12 per cent are multilateral bodies, 31 per cent are government bodies and 12 per cent identified as associations (see Chart 2, page 10). The majority of institutes focus their research efforts on a single type of research – either explicitly for academic, public or private outputs, while a small proportion combine these (Chart 3, page 10). The institutes in our sample are active across a range of disciplines and sub-disciplines, including infrastructure, engineering, construction, science and technology, and economics (for an exhaustive list, see Chart 4, page 10).

"We were particularly interested in the institutes that aligned with our interest in projects and programme-related research"

In Phase 2 of the research, we sought to refine the core list of 67 institutes into a smaller sample, with increasing prioritisation given to institutes encapsulating the 'triple helix' of research, education and engagement priorities. We were particularly interested in the institutes that aligned with our interest in projects and programme-related research. Following this refinement process, we identified 15 institutes which we deemed suitable for further investigation, as listed in Appendix B.

In Phase 3 of the data collection, we selected four institutes from the 'shortlist' of 15 for illustrative case studies: the John Grill Institute of Project Leadership, Australia; the Stanford Global Projects Center, US; the Concept Programme, Norway; and the ESRC Complex Product Systems (CoPS) Innovation Centre, (formerly) UK. To develop these case studies, we conducted primary data collection in the form of semi-structured interviews with senior members from those institutes. During these interviews, we also captured additional contextual aspects using field notes. The semi-structured interviews were based on the themes contained in Figure 2 below and were iteratively refined.

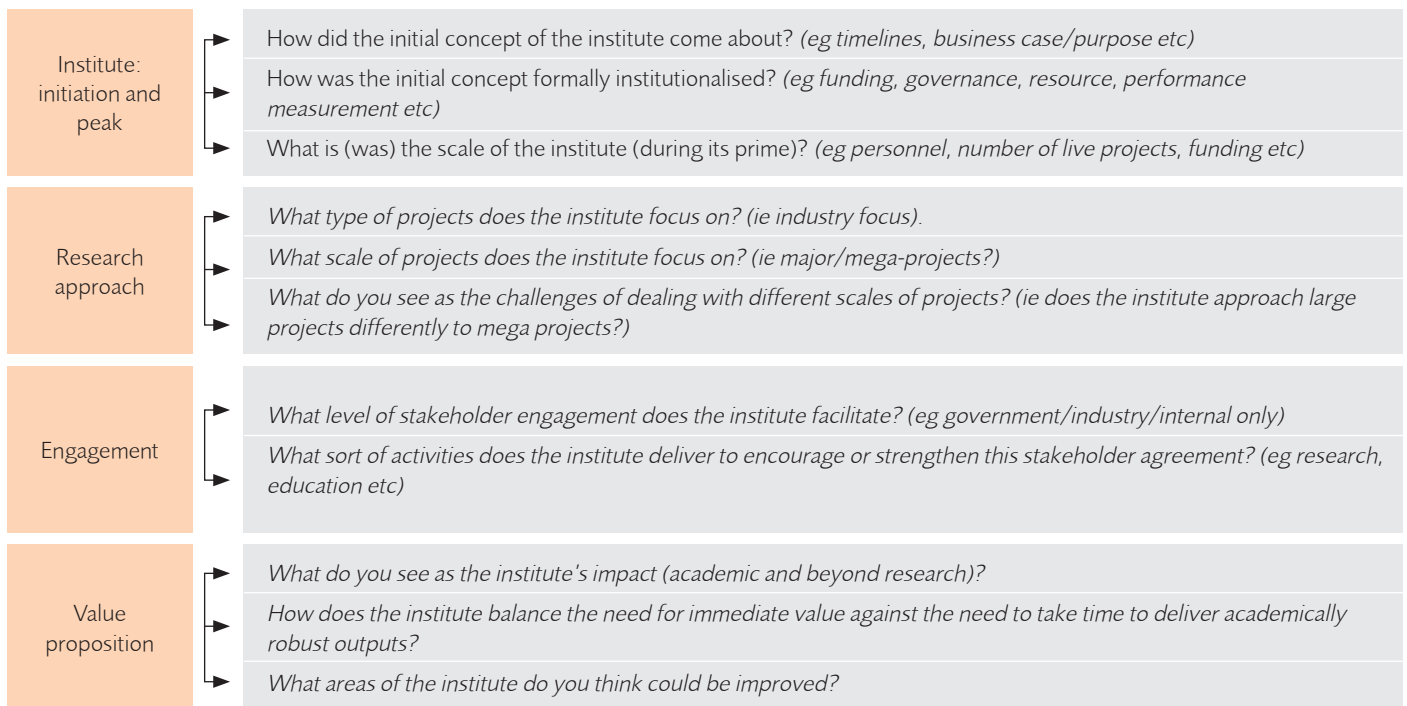


Figure 2: Semi-structured interview questions

Crucially, the interviews were undertaken via virtual-conferencing tools, as opposed to face-to-face, given the limits on international travel in light of the COVID-19 pandemic. While it is acknowledged that the use of teleconferencing and associated tools will limit the richness of the data collected, at this point it is unavoidable. Field notes were therefore especially important to partially relieve this shortfall and reinforce interview data by noting non-verbal features of communication, such as facial expressions, body posture and gestures, for example. Moreover, the authors factored in additional time for the comparison of field notes following each interview.

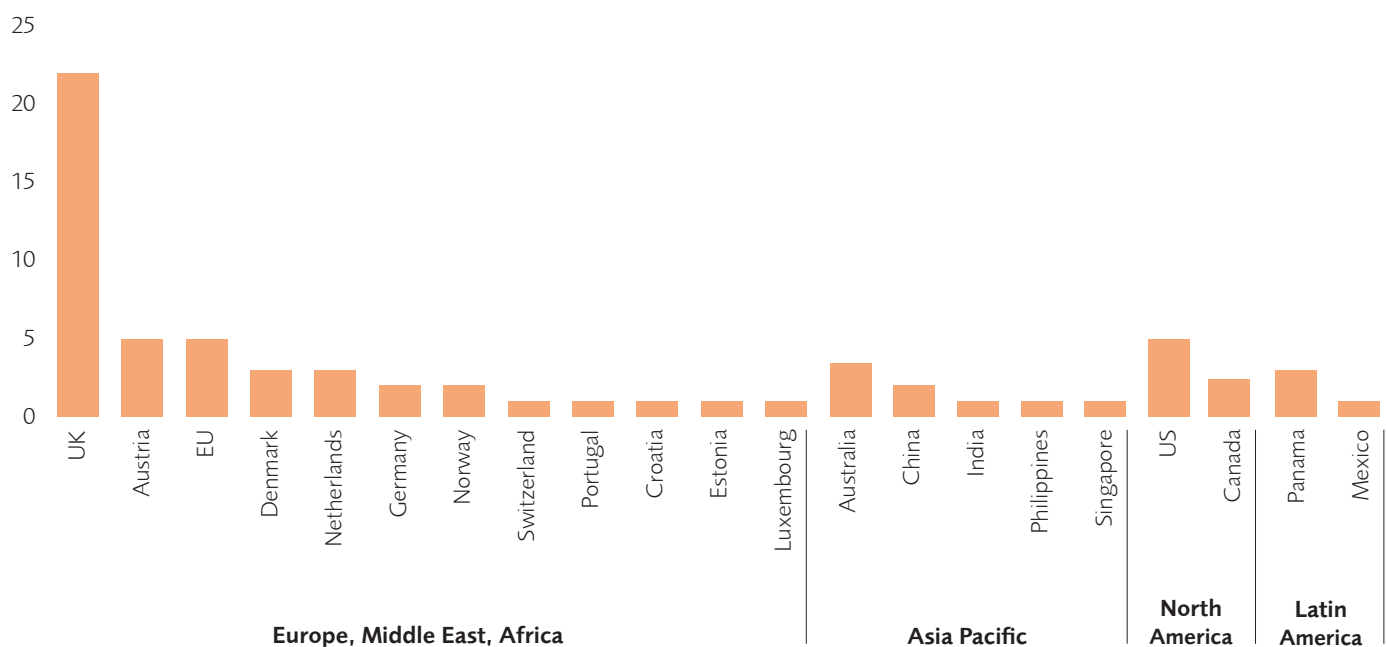


Chart 1: The geographical distribution of project/programme institutes

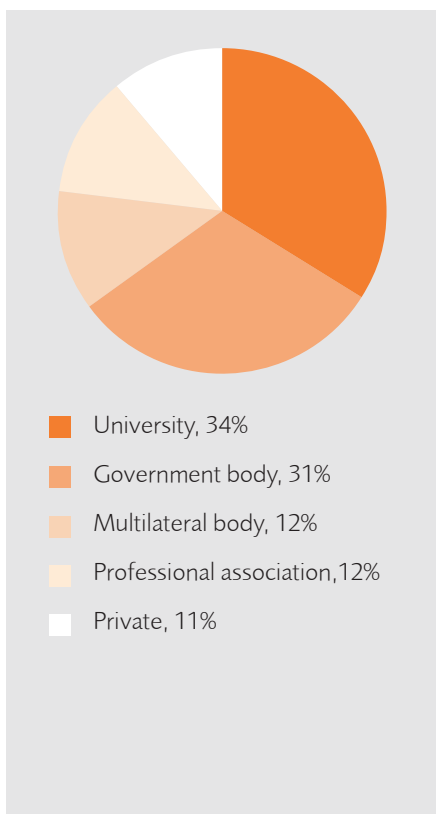


Chart 2: Institute affiliations.

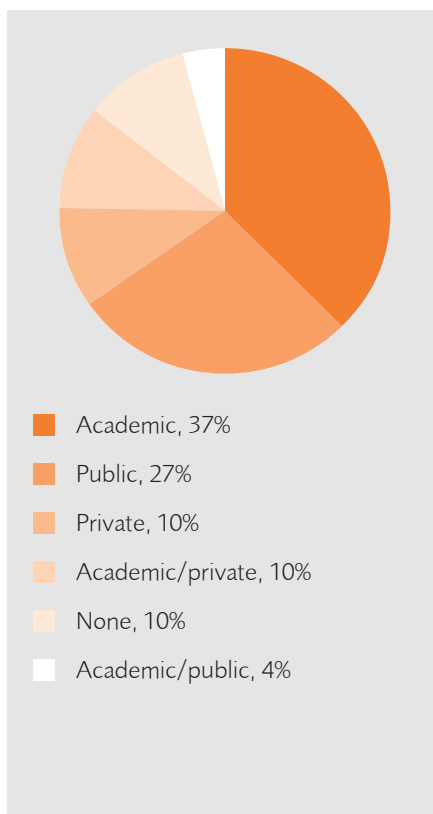


Chart 3: Research priorities of the institutes

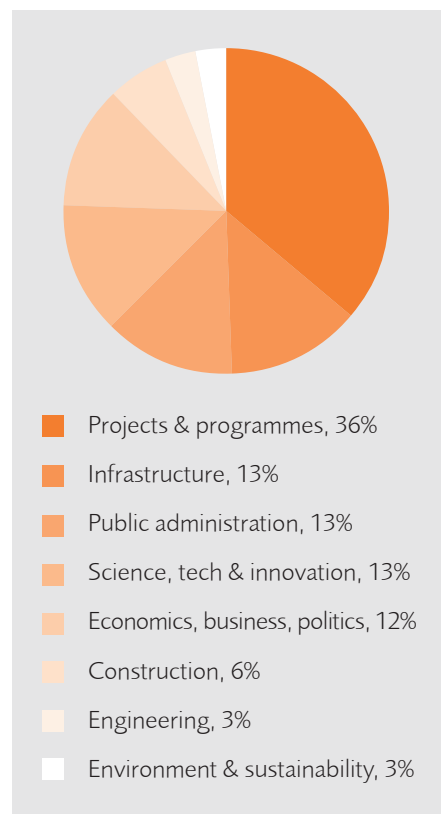


Chart 4: Sectoral focus of the institutes

4. In-depth cases

The iterative and structured nature of the sifting and selection process ensured that all criteria were considered in the identification of institutes and that these aligned with the criteria determined *ex ante*. By undertaking this process, the authors selected four case studies to undergo further investigation, two institutes with a strong project orientation and two with a strong policy and project orientation. The in-depth case studies presented here provide insight into some of the different strategic and structural characteristics embodied in research organisations. Moreover, they highlight that these organisations typically exist as project-related knowledge ecosystems rather than as stand-alone institutes.

The sample of four case studies consists of knowledge ecosystems from every stage of the organisational life cycle (which, given their semi-permanent features, is a close replica of the project life cycle, except that there is often an option to 'reinvent' the institute, as well as terminate the project towards the end of its life).

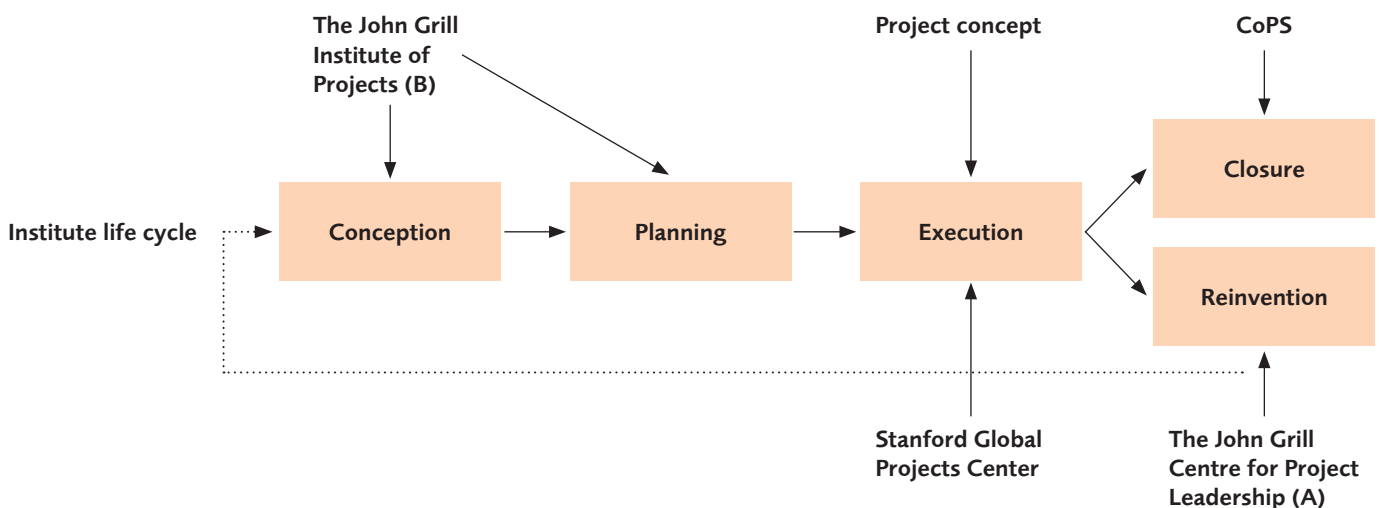


Figure 3: Institute life cycle

“Both the John Grill Institute and the Stanford Global Projects Center are characterised by evolution and reinvention”

The John Grill Institute of Project Leadership and the Stanford Global Projects Center provide two examples of formal organisations with a focus on projects. Based in Australia and the US, respectively, both groups were developed to advance the study of projects, albeit at different scales. Researchers at the John Grill Institute have studied all scales of projects, programmes and portfolios. However, as the name suggests, researchers at the Stanford Global Projects Center have primarily focused on large-scale, global public infrastructure projects. Both the John Grill Institute and the Stanford Global Projects Center are characterised by evolution and reinvention. The John Grill Institute, for example, is currently undergoing a structural reinvention that sees it formed out of two former institutes: the John Grill Centre for Project Leadership, and the Project Management Programme at the University of Sydney. In contrast, the Stanford Global Projects Center has transitioned to a new research focus – on digital cities – which is its second transition of this kind.

The Concept Programme in Norway and CoPS offer two examples of organisations – in the broad sense – at the interface of policy and practice. With no ambitions of being a formal institute or institution, Concept is a research programme funded by the Norwegian Ministry of Finance with a public sector focus. In contrast, over the course of its lifetime, CoPS developed into a centre underpinned by collaboration between the University of Sussex and the University of Brighton. With an industry-heavy focus, CoPS was able to contribute to both policy and practice debates around both innovation and projects.

	PROJECT/PROGRAMME		POLICY & PROJECT/PROGRAMME	
	The John Grill Institute of Project Leadership	Stanford Global Projects Center	Concept Programme	CoPS
Affiliation	University of Sydney	University of Stanford	Norwegian University of Science and Technology	University of Sussex/ University of Brighton
Year of conception	2005	2003	2001	1994
Life cycle stage	Reinvention/planning	Execution	Execution	Closed
Focus	Provide research, education and knowledge exchange to generate better project/programme leaders and to drive enhanced performance of major projects.	To develop a better understanding of the dimensions of cross-cultural difference and the subsequent effects of these on major projects and programmes.	Improving choice of concept and use of resources, and enhancing the effects of major public investments and public projects/programmes.	Delivering new, practical insights at the policy/project and programme management interface, making contributions to technology and innovation management.

Table 1: The representative case studies selected for in-depth investigation

4.1.1. Case study: The John Grill Institute of Project Leadership

Background, formation and structure

The John Grill Institute of Project Leadership, based at the University of Sydney, is in an early conception phase. The Institute is transitioning from the John Grill Centre for Project Leadership, founded in 2012 and created to develop a pipeline of talent through a focus on executive education, thought leadership and bespoke and residential training programmes. This followed a large endowment from John Grill, the chair of Worley Parsons, a global engineering services company, who saw a large gap in Australian senior project leadership capabilities, particularly but not exclusively around capital infrastructure projects.

Whereas the John Grill Centre was semi-independent, the John Grill Institute is a Level 3 institute of the university, which sits within the Faculty of Engineering and engages with people across the university. The Institute is the result of bringing together the former John Grill Centre and the Project Management Programme to form the John Grill Institute of Project Leadership within a new School of Project Management. Through this merger, the John Grill Institute has a chance to grow in a way that it has not previously enjoyed and to explore new synergies between government engagement, short courses, continuing education, academic degree programmes and traditional academic research with an interdisciplinary project management focus.

“The John Grill Institute has a chance to grow in a way that it has not previously enjoyed and to explore new synergies”

At present, the primary challenge for the John Grill Institute is that it currently has ‘more plans than people’. Thus, in the coming years, and beyond the current COVID-19 hiring freeze, the Institute is looking to raise its headcount to a level that is at least commensurate with the significant number of students being brought on to undergraduate and postgraduate programmes. The proposed headcount will rise to approximately 23 academic staff members, from the current nine. While the School of Project Management will formally employ staff, the general expectation is that all staff in the school are also members of the Institute.

The Institute also faces a major challenge, with increased pressure to focus on winning external grants and funding, and conducting pure academic research. Thus, an increased headcount will improve the capability to apply for external government grants and research contracts. In addition to grant funding, it is anticipated that the Institute will continue to generate its funding from a range of sources, namely: student revenue, university funding, new training programmes, research consultancies and continued income from the John Grill gift.

“The majority of our output has been industry agnostic... most of the work done has been trying to build project, programme and portfolio management as an integrated discipline which can be applied across all industries”

Associate professor
Julien Pollack, interim director,
John Grill Institute of
Project Leadership

Research approach

The John Grill Institute has a diverse range of academics and approximately 20 PhD students all focused on different aspects of project, programme and portfolio management at various scales. To better understand the project field, the Institute takes an 'industry agnostic' approach, drawing insights from infrastructure, energy, aviation, mining, telecommunications, defence, information technology, banking and finance. This approach is seen as an advantage, particularly when interrogating the question: what constitutes a project? By working with a range of industries, the John Grill Institute is also able to contribute a whole programme of research and share lessons between industries, thereby circumventing the general tendency for both industries and academics to work in silos and to overemphasise their disparities. Going forward, the Institute's research will explore the following themes:

- **Teams and team development** – how people work effectively in a project environment and how to develop that as effectively as possible.
- **Project methodology** – how to draw in aspects of systems thinking, complexity theory and change management to improve the project process.
- **Stakeholder engagement and management.**
- **Value** – particularly in the portfolio process.
- **Social network analysis** – how this can be used to understand both individual and team development and possible links to phenomena in the social network, and how these link to project performance.
- **Project manager capabilities** – the careers of project managers, how they develop over time and how their capabilities and competence can be developed.

Engagement

Firmly grounded in the prior work established by the John Grill Centre, the Institute begins its transition with a host of committed stakeholders and contacts from the resident academics. Going forward, the Institute plans to extend this network by providing a safe space for organisations to come together and share stories from both within and across their industries, so that they can cross-fertilise experiences in practice.

Stakeholder engagement will also be enhanced to deliver measurable impact. While impact measurement is still only in its infancy in Australian higher education, the Institute will strengthen its impact by becoming deeply involved in external organisations in a range of ways. In addition to academic connections held, the Institute intends to reach stakeholders through its teaching programmes: sending students to organisations to facilitate internship engagements; providing training as a standard package to organisations; providing more PhD research that directly addresses problems that organisations face; and facilitating a safe space for senior project practitioners to discuss, explore and solve the common problems experienced in their day-to-day working environments.

Value proposition

In its transition to a more established position within the University of Sydney, the John Grill Institute will cater for a different audience – and, ultimately, in line with the university's standard metrics, it will have to adhere to new and more constrained performance measures. Although part of this space is still undefined, the Institute will be predominantly measured against the usual base metrics: publications, citations, its ability to bring in research income and impact (as detailed previously).

The Institute recognises that a big part of this is to focus on addressing real problems and challenges and to keep all stakeholders in mind while doing so. In this way, it is easier to provide value for collaborators during short-term engagements that inform research that provides longer-term value to the university system through journal and academic research outputs.

In terms of addressing the challenges associated with balancing the practitioners' need for immediate value against the need to take time to deliver academically robust outputs, the Institute is relatively unfazed. Instead, challenges centre around timely ethics approvals, confidentiality and legal agreements that enable academic staff to collect and utilise the data obtained in their short-term engagements for longer-term research. To counteract these sorts of challenges, part of the Institute's strategy will require advanced contingency planning and having the required approvals in place to use the data when engaging with academia, government and industry.

Lessons learnt

The John Grill Institute is building on the lessons learnt in its prior structure as it advances into its new form. This transformation will allow for the implementation of strategic improvements through a variety of amendments: ie a change in structure (combining the Project Management Programme and John Grill Centre), development of thematic interests and increases in headcount.

4.1.2. Case study: The Stanford Global Projects Center

"The Stanford Global Projects Center exists as a 'temporary impulse' within Stanford University... it exists for as long as there is sufficient funding to maintain it"

Background, formation and structure

The Stanford Global Projects Center was founded in 2003 by professor Ray Levitt to develop a better understanding of the dimensions of cross-cultural difference and the subsequent effects of these on major projects. The centre was initially based in the civil engineering department at Stanford University; however, as the research focus has evolved, it has since moved to the Jerry Yang and Akiko Yamazaki Environment and Energy Building, which houses cross-disciplinary teams and programmes with a focus on teaching and research on sustainability. This evolution has led the research focus through three topic areas: cross-cultural projects, cross-sectoral projects and digital cities.

The Stanford Global Projects Center exists as a 'temporary impulse' within Stanford University. This means that it does not offer degree programmes or have permanent status; it exists for as long as there is sufficient funding to maintain it. The majority of this funding comes from industry sponsors, who pay an annual fee, and the rest comes from government organisations or grant funding.

The centre directly employs approximately eight people; this includes three or four research associates, an executive director and three other administrative staff members. Academic staff choose to affiliate from departments around the university but are not based in the centre. Staff who choose to affiliate are based in a range of disciplines, including engineering, sociology, economics and history. The departments involved in the centre evolve with the research themes, and more recent additions to the centre include staff from the law and IT departments.

Research approach

The Global Projects Center has evolved twice and is now on its third research focus. The first research focus was cross-cultural projects. This research focused on public infrastructure projects, funded by governments, the World Bank or large international development agencies. The projects studied were all large enough to have geopolitical impacts and political opposition, and had budgets of at least £1bn.

The second research focus was cross-sectoral projects. This research looked at implementing public-private partnerships in the US and focused predominantly on infrastructure projects. It also incorporated the study of non-profit and local organisations which mobilised to oppose large projects.

The third and current research focus is digital cities. This research looks at how to use data in cities to produce useful insights and brings together cross-discipline expertise including data analytics and institutional investment on urban sustainability to explore how emerging technologies will change the way we think about business model development for government and enterprises engaged in digital cities.

"This was absolutely like a university start-up: recruiting the talent, recruiting the funding, finding the product-market fit. It's very much like a start-up, but you have to do it inside a university structure, which is a little bit cumbersome. Stanford has some things which make it easier for us to do this. For example, if a company gives us an annual subscription, the university treats that as a gift and doesn't charge university indirect costs. Whereas with a research grant, you pay all the salaries and benefits and then you pay another 60 per cent on top of that. So, the gifts to the centre are not 'taxed' by the university... Stanford has a history of encouraging these kinds of centres because they really do solve real-world problems"

Professor Ray Levitt, founder and former director, Stanford Global Projects Center

Engagement

The centre's primary area of engagement is with industry sponsors. Different industry sponsors have different levels of engagement with the centre. The lowest level of engagement allows these businesses to have access to published reports and biannual meetings of all sponsors. Engagement at higher levels includes: allowing researchers to have access to projects 'as research labs', sponsoring student internships, and organisations sending someone to contribute to the research full time on the Stanford campus.

The Stanford Global Projects Center also engages with other universities, for example hosting post-doctoral researchers from Scandinavian universities, and providing executive education services on a small scale. Moreover, the centre has collaborated with government departments when researching PPP projects, including the Virginia Department of Transportation's PPP Group and the California Department of Transportation.

Value proposition

Sponsor companies receive two main benefits from the centre. The first is the more tangible access to research and reports produced for the centre, while the second is the networks and connections created between sponsor companies. Recognising the importance of networking for the sponsor companies means that it is essential for the Stanford Global Projects Center to bring on the right organisations and convene meaningful roundtables and conferences for them to attend.

The interdisciplinary nature of the Global Projects Center means that the impact can be seen across the university, with new academic courses and research content developed in several departments. The centre also published two well-reviewed and widely read books: *Global Projects: Institutional and Political Challenges* by professors Richard Scott, Ray Levitt and Dr Ryan Orr; and *Public-Private Partnerships for Infrastructure Development: Finance, Stakeholder Alignment, Governance*, edited by professors Ray Levitt, Richard Scott and Michael Garvin of Virginia Tech, a collaborating university.

Lessons learnt

A key lesson for the Stanford Global Projects Center is the importance of maintaining the existing focus of an institute when it goes through periods of reinvention. Not aggressively recruiting scholars with a primary interest in the governance of projects and organisation theory, for example, has meant that the centre in its current iteration has little resemblance to its previous forms. As a result, it is possible that, with time, a completely new centre will emerge with little in common with the Global Projects Center.

4.1.3. Case study: The Concept Programme

Background, formation and structure

In 2000, the Norwegian Ministry of Finance established a quality assurance (QA) scheme, also referred to as the State Project Model for major public investments. In the same year, professor Knut Samset was appointed as chair in project management for the Norwegian University of Science and Technology (NTNU) and applied for research council funds to follow that scheme. In 2002, the Minister of Finance decided to finance the research effort and included the Concept Programme in Norway's Whitebook. Since then, Concept has had a line in the National Budget and receives funding of NOK11m (roughly £1m) each year. This funding goes towards monitoring and analysing data from projects under the QA scheme and contributing to its continuous improvement.

Concept receives its funding from the Ministry of Finance on an annual basis, which makes long-term planning difficult. However, absent the need to negotiate with many different parties, Concept is very simple to administer and to date has not encountered any funding-related obstacles. While the ideas central to the Concept Programme are mostly produced in-house, Concept also demonstrates an innate sense of openness towards ideas generation by inviting and receiving new ideas from its stakeholders. This approach has been effective in keeping the programme relevant.

With a view to always involving the best scholars in their respective fields, Concept invites specialist researchers from other universities on an ad hoc basis. At its core, however, the Concept team has always been small and centralised. Since 2011, the core team has consisted of five members at most, guided by its research director Dr Gro Holst Volden, who continues to lead Concept's research agenda, ensuring that the programme delivers exceptionally high-quality research outputs; and in addition, a small steering group headed by the Ministry of Finance, which includes a total of three people. Beyond that, Concept also has a group of approximately 15 associated researchers whom it relies on as an ad hoc resource.

"We can be laid off immediately, and that's not a problem. It's just a challenge. And I also think it's a success factor what this small group who work on the Concept Programme 100 per cent [have been able to achieve]"
Professor Knut Samset, founder and director, the Concept Programme

Research approach

In total, Concept researches between 20–30 projects a year. The programme's work is limited to public or state-funded projects, particularly those that undergo the Ministry of Finance's QA scheme. Typically, these projects are valued beyond a threshold of approximately £100,000 and represent the largest projects in Norway. While admittedly small by British standards, for example, some projects that Concept researches are complex in nature – ICT, transformation and transport and road projects, for example. Defence projects, on the other hand, are both large and complex.

The main challenge for Concept is that it cannot get people involved on a long-term basis. The annual funding model adopted by the Ministry of Finance means that the programme is unable to offer researchers permanent positions. To work around this, when studies are initiated, they are often split into multiple smaller studies that can be carried out over a one-year basis.

Engagement

In carrying out research, Concept scholars balance two main target groups: (1) Norwegian ministries, agencies and quality assurers; and (2) the academic research community. Scholars study what the former do, identify what does and doesn't work, and try to identify best practices from which to give them advice. Concept also has a process where, each autumn, the steering group discusses relevant and timely research ideas and activities, while also using its whole network to try to pick up ideas and challenges.

In terms of dissemination, Concept scholars present findings about Norwegian schemes in academic publications. Moreover, since 2003, the programme has hosted the Concept Symposium on Project Governance with the Ministry of Finance, a biennial event concerned with project investments and their outcome and long-term effects.

"The Ministry of Finance reports that the research produced by the programme is used across the Norwegian government"

Value proposition

Over the years, Concept has trained several thousand students enrolled in master's degree programmes at NTNU, in turn exposing them to the programme's research. Students have gone on to both the public and private sector, which contributes to the dissemination of ideas and also creates an ever-expanding network. The phenomenon of front-end management and conceptual appraisal has not been institutionalised outside of Norway's Ministry of Finance. However, it has recently started to pick up among municipalities and in different sectors. This demonstrates the tremendous spill-over effects of such training.

While Concept's impact on society is difficult to measure because it is intangible, the programme has been very well received and has managed to stay relevant over the years. Despite its small size, it is well known in Norway; the reports that it publishes and posts on its website are extensively downloaded; many people sign up for the programme's newsletter, and the team is constantly asked for advice. To provide one example, the PMI-published systematic literature review on the front end of projects (Williams et al, 2019) contains approximately 700 citations within the paper. Astonishingly, over a quarter of the references belong to 17 of Concept's researchers, further demonstrating Concept's significant international outreach. Furthermore, based on conversations with other ministries, the Ministry of Finance also reports that the research produced by the programme is used across the Norwegian government.

Lessons learnt

Considering the size of the Concept Programme, the core team is proud of the impact that it has had, both in Norway and abroad. To keep Concept relevant, Dr Gro Holst Volden, who will take over as the programme's director when professor Knut Samset, the founding director, retires, intends for Concept to look into portfolio management, which it hasn't done before. Additionally, Concept will focus more on benefits management, which is relevant for the front end of projects, but also throughout the whole project life cycle.

4.1.4. Case study: The ESRC Complex Product Systems (CoPS) Innovation Centre

Background, formation and structure

The initial concept for the CoPS Innovation Centre was underpinned by work carried out in the early 1990s by professor Michael Hobday at the Science Policy Research Unit (SPRU) at the University of Sussex in collaboration with professor Roger Miller. This led to a three-year grant under the Engineering and Physical Sciences Research Council's (EPSRC's) Management of Technology Initiative in 1994. The project, called Complex Product Systems (CPS) at the time, focused on innovation and technology management, and capital goods producers in particular. These producers presented a conundrum, as their form of production was within a project, which did not fit into the mass production paradigm that dominated the innovation theory perspective of the day.

The CPS project brought together a core team from both SPRU and the Centre for Change, Entrepreneurship and Innovation Management (CENTRIM) at the University of Brighton. The team would carry out research with a primary focus on complex technology projects with large teams in different worlds, both geographically and technically. Coupled with external pressures, these team characteristics made coordination and management on such projects challenging.

This core team included professors Michael Hobday and Andrew Davies from SPRU and professors Howard Rush and Tim Brady from CENTRIM. SPRU provided a more policy-oriented perspective, while CENTRIM provided a more management-oriented one. Coming together for CPS formed the basis of a long collaboration between the University of Sussex and the University of Brighton that continues to this day.

“Ericsson was busy doing new kinds of projects and didn't really have time to think about what they'd done. So, they used us to write a narrative about what had gone on, and we used that to create a tool – the Turnkey Project Start-up Guide – in collaboration with various people. And we turned that into a *Research Policy* and an *Organization Studies* paper”

Professor Andrew Davies,
former co-director, CoPS

To advance the ideas from CPS, which were subsequently published in *Research Policy* (Hobday, 1998), the core team responded to an Economic and Social Research Council (ESRC) call for centres for innovation. The ESRC CoPS Innovation Centre was thus formed and funded for five years in the first instance, and subsequently for another five years. While size-wise CoPS was constantly in flux, at its largest, there were approximately 30 people peripherally involved with the centre.

Research approach

The CoPS approach to research was one of engaged scholarship. Building on the EPSRC-funded CPS, CoPS scholars maintained a deep level of involvement with the technology firms with which they had high-level contact. The first three firms from CPS in particular – Ericsson, Cable and Wireless, and Thales Training and Simulation, which was acquired by Thomson-CSF in 1990 – formed part of the longest and most impactful work carried out by CoPS. To maintain access to these firms, CoPS scholars fostered trust with counterparts there and actively developed robust relationships over time. CoPS scholars also produced management and technical tools relevant to each collaborating firm.

As with CPS, CoPS scholars developed a qualitative case-study protocol for in-depth cases. The idea was that two project cases would be produced for each firm that researchers were involved with. In preparing these cases, CoPS scholars worked with firms to identify key projects that they thought were challenging in various ways and framed emerging problems using literature. To balance its short and longer-term (academic) objectives, researchers adopted the Kolb learning cycle, introduced by professor John Bessant. This entailed spending time reflecting on what one had observed, trying to apply it within a firm and then seeing the outcome over the course of multiple cycles. This approach allowed both researchers and their firm-level counterparts to learn continually from what had been done.

Engagement

The primary area of engagement for CoPS was with the firms it collaborated with. A crucial aspect of this engagement was a so-called user-needs analysis. This helped to determine what outputs researchers would produce for each firm at the technical or managerial level. For example, Thomson wanted to improve the software development process on flight simulators, and so CPS/CoPS scholars interviewed people around the firm as internal consultants would do. Through the exercise, they were able to uncover three versions of project management tools that were being used in the firm: the officially documented approach to project management, how people actually did projects, and a third set, which was how project team members made what they actually did look like what was officially documented. Similarly, CoPS researchers were able to produce the Turnkey Project Start-up Guide for Ericsson, and develop tools around learning based on the centre's pioneering work on knowledge capture and transfer.

Another aspect of engagement involved advancing project-related ideas by engaging with scholars across Europe, North America and Japan, through conferences such as International Research Network on Organizing by Projects (IRNOP), the European Academy of Management and the American Academy of Management. Involvement in the IRNOP conference, spearheaded by professor Tim Brady, was especially crucial because it put CoPS in the centre of the project management community. When he joined Imperial College, professor Andrew Davies recruited people into what was then called the Project Business Research Group. When he joined UCL, he continued to raise awareness about the value and importance of projects. Beyond conferences, the work was also spread through visiting research professorship positions and visiting roles in Europe and Australia.

"With mass production, you have a design freeze before you move into production. You do your R&D and your development work etc, then you fix everything and then you total up the mass production. However, with a project, you don't actually freeze the design until much later on, because you have to negotiate things. There are many more firms involved. There are lots of decisions that you have to take, lots of paths you can take and high levels of uncertainty all associated with this. This is how eventually we got into projects, because that was the form of production"

Professor Tim Brady, former deputy co-director, CoPS

Value proposition

Beyond the centre's notable impact in the area of technology and innovation management, CoPS made a significant impact on the study of projects. This legacy was underpinned by collaborative work between the University of Sussex and the University of Brighton, starting with the original EPSRC projects, progressing to the ESRC Centre and beyond that into the Joint Infrastructure Fund (JIF) between the two universities. The latter directly informed the creation of the Freeman Centre, a modern research institute designed specifically for collaborative research across the entirety of both universities – a quite radical undertaking at the time.

Over the centre's lifetime, scholars in CoPS produced many publications in mainstream journals. In addition, they published a range of book chapters and books on projects and project management. Notable books include two which won the PMI David Cleland Award: *Managing and Working in Project Society*, co-authored² by professor Tim Brady, and *Projects: A Very Short Introduction* by professor Andrew Davies. In addition, *The Business of Projects* by professors Andrew Davies and Michael Hobday was ground-breaking when first published in 2005, by showing how leading businesses create and implement projects to drive strategy and innovation. CoPS scholars were also very involved in the editorial aspect of publishing, holding editorial positions with the *Project Management Journal* and the *International Journal of Project Management*. Each of these strands was very important for publicising ideas that were less known in the project's community.

Mentoring and research capability building at CoPS has created a whole generation of researchers working at the interface of projects and innovation. Many scholars who connected with the centre through direct employment, as visiting scholars or through postgraduate studies have gone on to have illustrious careers. These scholars have contributed to advancing the field of project management, and their international network remains strong, as is reflected in co-authored papers and the continued support between CoPS-affiliated scholars in the US, Australia, Scandinavia, Italy and beyond.

In practice, CoPS was influential in getting APM to look beyond the nuts and bolts of project management research and to fund larger-scale projects, as PMI had traditionally done. APM support was especially important in this regard because, at the time, project management was seen by many as beneath the threshold of research stardom required to be an academic in some universities. As such, it was tough to get it funded. Therefore, the creation by APM of a dedicated research team led by Daniel Nicholls and embedded as one of the APM five strategic objectives was an important attempt to align academic research with a commitment to funding, dissemination, debate and application by project professionals.

Lessons learnt

Despite the wide success that CoPS enjoyed, with hindsight, there are a number of potential areas where the centre could have been improved. First, getting all researchers to systematically document their cases would have made for rich and comparable datasets. Instead, protocols weren't always closely followed, which meant cases were neither systematically written nor comparable. Second, junior scholars should have had more exposure to strategic decision-making, including board meetings or critical meetings at the political level with policy stakeholders, research stakeholders or sponsors. Instead, for the most part, they were excluded from these meetings, from proposal writing and particularly from discussions around the centre's budget. Mentorship at this level would have been extremely beneficial not just for the scholars themselves, but also for the centre, as it would have ensured that there was a generation of scholars below the leadership team who could take the reins.



²Other co-authors include professors Rolf A Lundin, Niklas Arvidsson, Tim Brady, Eskil Ekstedt, Christophe Midler and Jörg Sydow.

5. Key lessons

In this research report, we set out to identify institutes that are independent and semi-permanent, collect useful data on government projects and research that data to come to useful conclusions. The approach taken was to consider such institutions, on a global scale, as identified by academics and professional associations such as APM, IPMA and PMI. Sixty-seven such institutes were identified in total across the public, private and not-for-profit sectors. The organisational forms that we identified varied in their focus on policy or project-related issues, as well as the disciplines and sub-disciplines that underpinned them.

The four cases selected for in-depth case studies show that project-related knowledge ecosystems have contributed significantly to academic outputs. Concept, for example, has provided notable advancements to the study of quality assurance. While it is difficult to quantify the programme's direct impact, its vast database of knowledge is used across government departments, industry and increasingly at the local level. Similarly, there is a whole generation of eminent scholars working at the interface of projects and innovation with direct links to CoPS.

Beyond academic research, these project-related knowledge ecosystems have also impacted policy and practice. The John Grill Institute of Project Leadership, for example, builds on the John Grill Centre for Project Leadership, which has contributed towards the leadership of major projects in Australia, strengthening the pipeline for future project leaders. The Stanford Global Projects Center has advanced our understanding of the implications of cross-cultural differences on global projects. Moreover, scholars at Stanford have commercialised various software tools, including one for modelling information flow between heterogeneous project parties.

The legacy of such institutes and their related knowledge ecosystems will emerge over a long period. Therefore, this report serves at least two purposes: first, as set out initially, to provide an overview of the projects landscape, for both academics and practitioners; second, to build a repository for future research into the evolution of project-related knowledge ecosystems and their implications for research and practice. Based on an examination of these four cases, our key observations are as follows:

■ Collaboration

Establishing and maintaining collaborative relationships across the 'golden triangle' of business, government and academia is key to the success of project-related institutes, programmes and centres. These relationships can be mutually beneficial through the co-creation of outputs that contribute to each party's strategic objectives and reputational footprint. Crucially, collaboration can take a variety of forms at both inter- or intra-organisational levels. CoPS, for example, operated as a pan-university structure between the universities of Sussex and Brighton, while Stanford's Global Project Center was underpinned by inter-departmental collaboration. It is therefore imperative that a variety of collaborative forms are considered, explored and harnessed to suit the strategic priorities of all involved.

The importance of co-locating collaborating groups, whether over short or long periods, is also seen across the cases. For Concept, this means periodically meeting with key stakeholders to brainstorm relevant research ideas. In contrast, CoPS and the Stanford Global Projects Center provide examples of co-location over a more extended period, as the centres had assigned physical spaces which allowed collaborators to work closely together and ultimately determine whether they could work together. Such integration forms the basis for establishing trust, which is especially important when doing collaborative project work.

While national collaboration dominated the cases, international collaboration is equally important for the success of PPR institutes. This is in part because understanding what international colleagues are doing allows researchers within institutes to refine how they approach things. Through collaboration with Scandinavian scholars, for example, CoPS scholars were exposed to industrial engineering management schools. These schools differed from the norm in the UK, which was to separate industrial engineering and management. Moreover, Scandinavian scholars were tightly embedded with their industry counterparts, which strongly influenced the 'engaged scholarship' approach that CoPS became widely known for. Through their interactions, CoPS scholars were also able to introduce

"The four cases selected for in-depth case studies show that project-related knowledge ecosystems have contributed significantly to academic outputs"

"University performance measures, including the Research Excellence Framework in the UK, tend to favour a narrow research focus"

their Scandinavian counterparts to economics-related insights. These long-term symbiotic exchanges spurred a melting pot of ideas with important implications for the study and management of projects, as well as for firms and industry partners.

■ **Interdisciplinary work**

The cases demonstrate how working across intellectual boundaries or fields can deepen and expand the potential for innovative knowledge creation with benefits for both academia and practice. For the Stanford Global Projects Center, this included initially working across the boundaries of engineering and sociology, and later history and political science. This work can be mutually enriching, as demonstrated by the fact that, for sociology professor Richard Scott, the opportunity to be part of the Stanford Global Projects Center was an exciting one. It allowed him to move beyond traditional sociology, which describes how the world works, to working on some real-world problems. Similarly, CoPS was able to advance the Management of Projects perspective pioneered by professor Peter Morris at UCL by merging it with an innovation perspective from the study of complex product systems. Based on his experience in CoPS and Imperial College, professor Andrew Davies was appointed as chair of the Management of Projects in honour of Peter Morris.

For project management scholarship, the importance of interdisciplinary work lies in the fact that, for many years, the field was dominated by tools and techniques, underpinned by the assumption that by simply working out the boundaries and specifications of a project, it can be managed through milestones along the way. However, real-world experience within firms and public sector organisations suggests that things are more complex. The challenge for professors Andrew Davies and Tim Brady at CoPS was, therefore, to persuade people that the textbook project management approach is akin to neoclassical economics in terms of interpreting the real world. Such a reality is not always easily grasped by those embedded within a field.

In embarking on interdisciplinary work, a supportive institutional environment is vital. University performance measures, including the Research Excellence Framework in the UK, tend to favour a narrow research focus. In turn, this creates an incentive for academics to make only incremental changes and get published in their respective fields, rather than being open to a wide range of ideas from other fields. These rules of the game, though arguably necessary, can also stifle interdisciplinary work and further highlight the importance of institutional support. At Stanford University, for example, such support is given when centres are created, because it is with the expectation that they will take on real-world problems and identify the various, often siloed disciplines from across the university that can contribute to solving identified problems.

■ **Balancing long-term/short-term outputs**

A fundamental tension exists between an institution's long-term and short-term demands for output where both collaborative and interdisciplinary work is undertaken at the interface of academia and practice. There appears to be no clear-cut or directly replicable strategy for balancing the two types of output. Instead it must be aligned and periodically managed against the organisation's mission. While there is no blueprint for managing the tension between short-term and long-term demands, in general, influential institutes in the PPR field, such as those examined in this report, provide some guidance.

A key lesson from the John Grill Institute of Project Leadership is to focus on relevant research, because to do so means that the institute is addressing real problems, which will, therefore, give it credibility. We see this also with the Concept Programme, which keeps in good contact with ministries and agencies of quality assurance, contributing contemporary ideas to Concept's research agenda. As a result of this approach, many of Concept's studies are based on ideas from stakeholders. In the short term, outputs provide value to these stakeholders in the form of practical insights and, in the longer term, they lead to academic publications. Approaching engagements in this way and delivering value to all involved requires strategic thinking, preparation and organisation.

The cases also provide insights into a range of strategies for developing and maintaining the relationships necessary to gain access to data for short- and long-term commitments. These strategies include understanding the problems that organisations face, collaboratively framing related research projects and embedding researchers and students within organisations to contribute to addressing

these problems. Through the latter, students can deliver direct value to organisations while laying the foundation for possible recruitment in the future. Providing training services as standard packages, access to research findings and executive education are other ways to go about this. The latter is especially important, as it allows senior leadership from organisations to reflect on their experiences away from their day-to-day pressures. Concurrently, scholars gain access to rich, real-world insights.

As with interdisciplinary research, it is always critical to work within existing constraints when carrying out both basic and practice-facing research. As much as possible, this requires that scholars frame everything to meet multiple targets. Crucially, however, whenever engaging with practitioners, it is important to constantly keep the longer term in mind, as an excessive focus on short-term outputs risks blurring the lines between academia and consultancy. It is equally important when engaging with organisations to get ethics approval and confidentiality agreements up-front to guarantee that data collected from government or industry can be used for publication purposes. A good understanding of the university approvals process is also key, since this can be cumbersome and can ultimately affect an institute's research timeline.

■ Mentorship and leadership training

The cases demonstrate that harnessing the capacity of a future generation of strategic decision-makers is crucial for the continuity of PPR organisations. At the Stanford Global Projects Center, the approach taken was to encourage students to write scholarship proposals, because applying for their own funds encouraged them to develop grant-proposal writing skills. Additionally, their bringing in funds contributed towards the centre's resources. Students were also encouraged to apply for peer-reviewed grants, which gave them visibility outside the university. This was especially important for younger faculty, who when seeking tenure would require reference letters from peer institutions. For similar reasons, junior colleagues were encouraged to take active roles within professional associations.

The practice at Stanford University differs from the practice at CoPS, where junior colleagues were excluded from proposal writing and particularly discussions around the centre's budget. Mentorship at this level would have been extremely beneficial not only for the scholars themselves, but also for the centre, as it would have ensured that there was a generation of scholars below the leadership team who could take the reins. A related lesson from CoPS is the importance of exposing junior colleagues to strategic decision-making forums, including board meetings, or key meetings at the political level with policy stakeholders, research stakeholders or sponsors. Over time, such exposure prepares early career researchers for leadership positions, which could be essential for a centre's handover strategy.

“Mentorship and leadership training are important to avoid an unintentional break-up of the teams and research discontinuity”

As in entrepreneurial ventures, there is a tendency in big centres for those in leadership positions to stay on longer than is beneficial to the group. Empowering the next generation of leaders in proposal writing, budget development and strategic and political decision-making, however, reduces the extent to which such institutes are dependent on a single person or group of people and therefore the likelihood that without those people the institute will disintegrate. Mentorship and leadership training are therefore important to avoid an unintentional break-up of the teams and research discontinuity. They can also provide junior scholars with a sense of security, by allowing them to leverage an institute's accumulated social and intellectual capital in applying for funding, for example, even if only as an exit strategy while decommissioning a centre.

■ Entrepreneurial funding generation

The importance of funding is evident across all of the cases. It is most pronounced at conception and thematic reinvention, when the project ecosystem embodies an 'entrepreneurial spirit' to stay relevant. Typically, the initial research that leads to a centre is funded by government through a national research council grant, which can continue over the lifetime of an entity. Alternatively, following the initial grant funding, institutes can be funded by industry, as was the case with the Stanford Global Projects Center; directly by the government, as was the case with Concept; or through an endowment, as was the case with the John Grill Institute. Crucially, when institutes do not have a permanent status, their status continues only for as long as they can fund their activities. It is, therefore, imperative that their research is relevant to those funding it.

"The process of seeking company contributions requires someone to lead it – ideally somebody proactive with a strong network"

For the Stanford Global Projects Center, the primary source of funding is annual contributions that range between \$15,000 and \$100,000. The process of seeking company contributions requires someone to lead it – ideally somebody proactive with a strong network. In the case of Stanford's Global Projects Center, this was the programme director, Dr Julie Kim, who had previously worked with marketing and consulting firms. Dr Kim drew on her network to round up the first group of companies, which collectively funded the centre by annual subscriptions for an initial period of three years. To continue attracting this funding, the centre positioned itself as a bridge between the basic research that government would typically fund and the kinds of development that companies are interested in – translating basic research into a language that industry understood.

The absence of long-term funding highlights the importance of relevant research work. For Concept, which receives annual funding from the Norwegian government, this means operating with the understanding that funding is not guaranteed. Annual funding presents challenges for long-term planning and for getting people involved on a long-term basis; therefore, Concept typically initiates studies that can be carried out in a year. Similarly, with no guaranteed funding, CoPS scholars often worked on a lag, i.e. writing future grant proposals while on existing grants. Sometimes, this meant prioritising proposal writing instead of paper writing in order to stay employed. Whether this approach is feasible today will depend largely on the institutional environment within which an institute is embedded.

■ Network convening

Ultimately, PPR institutes convene networks across business, government and academia, which requires that the right people show up at the right time. Internally, it is therefore important that institutes, programmes or centres attract people who find the problems being explored interesting and are not simply using it for financial support or as a stepping stone. A key lesson from the cases in this report is that people invested in an institute's success significantly contribute to valuable outputs and outcomes. However, as previously stated, the incentives within the broader institutional environment pose a significant constraint, particularly in a business school environment, where performance is measured strictly by academic publications.

The cases also demonstrate that institutes can be thinly staffed and still produce rich research insights with extended networks of affiliated staff. Outputs and outcomes can be especially rich when networks consist of diverse scholars from a range of departments or fields contributing towards the development of innovative courses and research content. Encouraging students to take courses in different departments or at different universities is yet another way to grow a network. At the Stanford Global Projects Center, for example, engineering students were encouraged to take sociology courses and learn enough about the subject to communicate with sociology students.

The network convening aspect of these institutes, programmes and centres is especially important for keeping organisations engaged. The key here is to get the right organisations involved early on, in order to attract others that want to talk to them. Providing a safe environment for organisations to network with each other and share insights both within and across industries is valuable for both individuals and organisations. Curating these events so that diverse groups of organisations with similar challenges, in risk management, governance or contracting models, for example, can connect can also go a long way. Often through these initiatives, organisations are encouraged to contribute to the PPR institutes either monetarily or in-kind.

Engaging with professional bodies such as PMI and IPMA and its member associations, like APM, is another key aspect when convening networks. These bodies play a significant role in disseminating research insights to their members and facilitating connections at conferences and workshops. Moreover, through grant funding calls, they draw attention to research problems that are increasingly relevant for their members. Therefore, actively involving such bodies in research centres is beneficial across the board.

6. Summary and next steps

This report provides insight into the global landscape of PPR organisations and related knowledge ecosystems. We develop a consolidated list of PPR institutes that encompass the full 'triple helix' of research, education and stakeholder engagement activity within a public or not-for-profit organisational setting. Four in-depth case studies reveal further characteristics relating to the structural developments, extant form and motivations of such organisations.

This study was motivated by the noticeable absence of a single-source of publicly available information about the profile of PPR institutes across the world. While the list contained in the report is not an exhaustive source of influential project and programme institutes, it does provide a starting point towards gaining a better understanding of the characteristics that underpin and embody a sample of institutes in this area. Future research is therefore required to develop a more definitive list of influencers in the PPR institute setting, particularly in geographic regions where the response rate was low. Such a list would allow for a greater understanding of the global profile of PPR institutes and, with it, more generalisable and categorical conclusions could be drawn, including those that pertain to project-related knowledge ecosystems.

Through this study, we have identified the potential for further research on the management of programmes and portfolios. We conjecture that such research will further illuminate the complex dynamics within which projects are embedded and related opportunities and challenges. As demonstrated by the cases in this report, addressing such real-world problems beyond the scope of individual projects presents an opportunity to develop rich interdisciplinary insights with impact in both academia and practice.

Beyond the cases presented in this report, there also exist project-related knowledge ecosystems, which are set up temporarily. For example, the Rethinking Project Management Network existed from 2004 to 2006 with the principal vision of developing a research agenda aimed at extending and enriching mainstream project management ideas in relation to the developing practice. In contrast, other institutes, such as Concept, have been more sustained. Exploring why this is the case, including the evolution, reinvention and splits that take place, is important not only for a deeper understanding of these knowledge ecosystems but also because it is integral to our understanding of the study of projects and programmes.

Further research should also explore the invaluable contribution that professional bodies play in shaping the research ecosystem. Both APM and PMI, for example, have a significant influence on the focus of academic research and training. Professional bodies also contribute to the practical application of research by disseminating it widely. An in-depth look into these dynamics is, therefore, key to raising the profile of project management research and also the relevance of future research for industry.

“Addressing real-world problems beyond the scope of individual projects presents an opportunity to develop rich interdisciplinary insights with impact in both academia and practice”

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Appendices

Appendix A: A list of global project professional bodies contacted in Phase 1 (responses indicated in orange).

Name	Country	Prof. Body
Algerian Project Management Association	Algeria	IPMA
Asociacion de Gestion de Proyectos de Argentina	Argentina	IPMA
Australian Institute of Project Management	Australia	IPMA
Project Management Austria	Austria	IPMA
Azerbaijan Project Management Association	Azerbaijan	IPMA
Bolivian Association of Project Management	Bolivia	IPMA
Association for Project Management in Bosnia and Herzegovina	Bosnia and Herzegovina	IPMA
International Project Management Association Brazil	Brazil	IPMA
Bulgarian Project Management Association	Bulgaria	IPMA
Project Management Association Canada	Canada	IPMA
Chilean Corporation Project Management	Chile	IPMA
Project Management Research Committee China	China	IPMA
Asociacion Para El Progreso de la Direccion de Proyectos de Colombia	Colombia	IPMA
Asociacion de Direccion de Proyectos de Costa Rica	Costa Rica	IPMA
Croatian Association for Project Management	Croatia	IPMA
Cyprus Project Management Society	Cyprus	IPMA
IPMA Czech Republic	Czech Republic	IPMA
Dansk Projektledelse	Denmark	IPMA
Dominican Association of Project Management	Dominican Republic	IPMA
Corporacion Ecuatoriana de Direccion de Proyesctos Ecuador	Ecuador	IPMA
Management Engineering Society	Egypt	IPMA
Estonian Project Managers Association	Estonia	IPMA
Project Management Association Finland	Finland	IPMA
Association Francaise pour l'avancement du Management de Projet	France	IPMA
Georgia Project Management Association	Georgia	IPMA
GPM Deutsche Gesellschaft fur Projectmanagement e.V	Germany	IPMA
PM Greece	Greece	IPMA
Asociación de Project Management de Guatemala	Guatemala	IPMA
Project Management Association Hungary	Hungary	IPMA
Project Management Association of Iceland	Iceland	IPMA
Project Management Associates India	India	IPMA
Indonesian Society of Project Management Professionals	Indonesia	IPMA
Iran Project Management Association	Iran	IPMA
Institute of Project Management Ireland	Ireland	IPMA
Associazione Nazionale di Implantistica Industriale Italy	Italy	IPMA

Name	Country	Prof. Body
The Society of Project Management Japan	Japan	IPMA
Kazakhstan Association of Project Management	Kazakhstan	IPMA
Kosovo Association for Management	Kosovo	IPMA
Latvian National Project Management Association	Latvia	IPMA
Lithuanian Project Management Association	Lithuania	IPMA
Malaysian Association of Project Management	Malaysia	IPMA
Asociacion Mexicana de Ingenieria de Proyectos a.c.	Mexico	IPMA
Montenegrin Project Management Association	Montenegro	IPMA
Moroccan Project Management Association	Morocco	IPMA
Project Management Association of Nepal	Nepal	IPMA
IPMA Nederland	Netherlands	IPMA
Project Managers Development Association of Nigeria	Nigeria	IPMA
Norwegian Association of Project Management	Norway	IPMA
Asociacion Panamena de Gestion de Proyectos	Panama	IPMA
Asociacion de Gestion de Proyectos del Paraguay	Paraguay	IPMA
Asociacion Peruana de Direccion de Proyectos	Peru	IPMA
Philippine Society of Project and Program Management	Philippines	IPMA
International Project Management Association Polska	Poland	IPMA
Associacao Portuguesa de Gestao de Projectos	Portugal	IPMA
Project Management Romania	Romania	IPMA
Project Management Association SOVNET	Russia	IPMA
Serbian Project Management Association	Serbia	IPMA
Project Management Association of Singapore	Singapore	IPMA
Project Management Association of Slovakia	Slovakia	IPMA
Slovenian Project Management Association	Slovenia	IPMA
Association for Project Management South Africa	South Africa	IPMA
International Project Management Association Korea	South Korea	IPMA
Asociacion Espanola de Ingenieria de Proyectos Spain	Spain	IPMA
Svenskt ProjectForum Sweden	Sweden	IPMA
Swiss Project Management Association	Switzerland	IPMA
Taiwan Project Management Association	Taiwan	IPMA
Turkish Project Management Association	Turkey	IPMA
Association for Project Management (APM)	UK	IPMA
Ukrainian Project Management Association	Ukraine	IPMA
Asociacion de Gestion de Proyectos del Uruguay	Uruguay	IPMA
IPMA USA	US	IPMA
Association of Project Management of Uzbekistan	Uzbekistan	IPMA
PMI Angola	Angola	PMI
PMI Argentina	Argentina	PMI
PMI Armenia	Armenia	PMI
PMI Australia	Australia	PMI
PMI Austria	Austria	PMI

Name	Country	Prof. Body
PMI Azerbaijan	Azerbaijan	PMI
PMI Bangladesh	Bangladesh	PMI
PMI Belgium	Belgium	PMI
PMI Bolivia	Bolivia	PMI
PMI Bosnia and Herzegovina	Bosnia and Herzegovina	PMI
PMI Botswana	Botswana	PMI
PMI Brazil	Brazil	PMI
PMI Bulgaria	Bulgaria	PMI
PMI Cameroon	Cameroon	PMI
PMI Canada	Canada	PMI
PMI Chile	Chile	PMI
PMI China	China	PMI
PMI Colombia	Colombia	PMI
PMI Costa Rica	Costa Rica	PMI
PMI Croatia	Croatia	PMI
PMI Cyprus	Cyprus	PMI
PMI Czech Republic	Czech Republic	PMI
PMI Democratic Republic of the Congo	Democratic Republic of the Congo	PMI
PMI Denmark	Denmark	PMI
PMI Dominican Republic	Dominican Republic	PMI
PMI Ecuador	Ecuador	PMI
PMI El Salvador	El Salvador	PMI
PMI Finland	Finland	PMI
PMI France	France	PMI
PMI Georgia	Georgia	PMI
PMI Germany	Germany	PMI
PMI Ghana	Ghana	PMI
PMI Greece	Greece	PMI
PMI Guatemala	Guatemala	PMI
PMI Honduras	Honduras	PMI
PMI Hong Kong	Hong Kong	PMI
PMI Hungary	Hungary	PMI
PMI India	India	PMI
PMI Indonesia	Indonesia	PMI
PMI Ireland	Ireland	PMI
PMI Israel	Israel	PMI
PMI Italy	Italy	PMI
PMI Ivory Coast	Ivory Coast	PMI
PMI Jamaica	Jamaica	PMI
PMI Japan	Japan	PMI

Name	Country	Prof. Body
PMI Jordan	Jordan	PMI
PMI Kazakhstan	Kazakhstan	PMI
PMI Kenya	Kenya	PMI
PMI Lebanon	Lebanon	PMI
PMI Lithuania	Lithuania	PMI
PMI Luxembourg	Luxembourg	PMI
PMI Macedonia	Macedonia	PMI
PMI Malaysia	Malaysia	PMI
PMI Mauritius	Mauritius	PMI
PMI Mexico	Mexico	PMI
PMI Mongolia	Mongolia	PMI
PMI Morocco	Morocco	PMI
PMI Netherlands	Netherlands	PMI
PMI New Zealand	New Zealand	PMI
PMI Nicaragua	Nicaragua	PMI
PMI Nigeria	Nigeria	PMI
PMI Norway	Norway	PMI
PMI Pakistan	Pakistan	PMI
PMI Panama	Panama	PMI
PMI Paraguay	Paraguay	PMI
PMI Peru	Peru	PMI
PMI Philippines	Philippines	PMI
PMI Poland	Poland	PMI
PMI Portugal	Portugal	PMI
PMI Puerto Rico	Puerto Rico	PMI
PMI Romania	Romania	PMI
PMI Russia	Russia	PMI
PMI Rwanda	Rwanda	PMI
PMI Saudi Arabia	Saudi Arabia	PMI
PMI Senegal	Senegal	PMI
PMI Serbia	Serbia	PMI
PMI Singapore	Singapore	PMI
PMI Slovakia	Slovakia	PMI
PMI Slovenia	Slovenia	PMI
PMI South Africa	South Africa	PMI
PMI South Korea	South Korea	PMI
PMI Spain	Spain	PMI
PMI Sri Lanka	Sri Lanka	PMI
PMI Sweden	Sweden	PMI
PMI Switzerland	Switzerland	PMI
PMI Taiwan	Taiwan	PMI
PMI Tanzania	Tanzania	PMI

Name	Country	Prof. Body
PMI Thailand	Thailand	PMI
PMI Trinidad and Tobago	Trinidad and Tobago	PMI
PMI Tunisia	Tunisia	PMI
PMI Turkey	Turkey	PMI
PMI Uganda	Uganda	PMI
PMI Ukraine	Ukraine	PMI
PMI United Arab Emirates	United Arab Emirates	PMI
PMI United Kingdom	UK	PMI
PMI Uruguay	Uruguay	PMI
PMI US	US	PMI
PMI Venezuela	Venezuela	PMI
PMI Vietnam	Vietnam	PMI
PMI Zimbabwe	Zimbabwe	PMI

Appendices

Appendix B: Shortlisted institutes.

Institution	Criteria	Details
BT Centre for Major Programme Management (dissolved)	Affiliation:	Saïd Business School, University of Oxford
	Focus:	Projects and programmes – undertaking interdisciplinary research on the management of major programmes and megaprojects.
	Sectors:	The centre's research agenda focused on a broad and deep understanding of major programmes in a variety of areas, such as construction megaprojects, sporting events, IT projects, and major science programmes.
	Collaboration:	Interdisciplinary engagement at both an inter-organisational (industry) and intra-organisational (across Oxford University departments) level.
	Education:	The centre ran a two-year MSc course in major programme management, educating managers of major programmes to equip them with the required knowledge of systems engineering, commercial and contract law, life cycle planning, risk management, programmatics, organisational leadership and communication.
Centre for Programme Management	Affiliation:	University of Cranfield
	Focus:	Technology and management in various sectors, including aerospace, defence and security, energy and power, environment and agrifood, manufacturing, transport systems and water.
	Collaboration:	Industry, government and business.
	Education:	Master's and PhD.
CoPS (dissolved).	Affiliation:	See Section 4.1.4. of this report for a detailed case study.
	Focus:	
	Collaboration:	
	Education:	
Management of Projects Group, MACE	Affiliation:	University of Manchester
	Focus:	Projects and programmes – The Management of Projects group at MACE undertakes research activities in five principal areas, covering: the principles of managing projects, people and professional practice, product-service systems, political economy and pedagogical practices. The sectoral focus of the group spans engineering, infrastructure and technology disciplines.
	Collaboration:	Various multi-disciplinary research centres, industry and government.
	Education:	Undergraduate, master's, PhD.
Megaproject Management Research Group	Affiliation:	Saïd Business School, University of Oxford
	Focus:	Projects and programmes – The group's research and teaching seek to identify new ways of understanding the challenges associated with megaprojects in order to help business, government and society to overcome them. Members of the group conduct leading-edge, multidisciplinary research on megaproject management, bringing together expertise in business, policy, engineering, computer science, economics, law, planning, the environment and more. As well as carrying out research in this field, the group offers an MSc in major programme management, the first of its kind in the world. The teaching team also delivers executive education, tailor-made for corporate and government clients. (Source: www.sbs.ox.ac.uk/research/research-areas/megaproject-management).
	Collaboration:	The group interacts with a range of stakeholders from within and outside the University. As such, knowledge is exchanged and disseminated with both eminent industry and government practitioners, who also represent a proportion of faculty headcount.
	Education:	Members of the group teach on degree (MSc major programme management) and executive education programmes (Major Projects Leadership Academy, Oxford Leading Strategic Projects Programme).

Institution	Criteria	Details
Concept Programme	Affiliation:	<i>See Section 4.1.3. of this report for a detailed case study.</i>
	Focus:	
	Collaboration:	
	Education:	
The Thomas Ashton Institute	Affiliation:	The University of Manchester
	Focus:	Engineering.
	Collaboration:	The institute comprises a collaborative partnership between the University of Manchester and the UK government's Health and Safety Executive. As such, the Thomas Ashton Institute engages with stakeholders from government, industry, the workforce and academic partners to deliver relevant and impactful outcomes.
	Education:	The Thomas Ashton Institute is establishing a postgraduate educational programme, together with education opportunities for professional development, which will be offered to industrial partners.
Department of Civil Engineering	Affiliation:	Indian Institute of Technology Madras
	Focus:	The Department of Civil Engineering at the Indian Institute of Technology Madras specialises in all major areas of structural engineering, grouping its faculty into specialist divisions: Building Technology and Construction Management, Environmental and Water Resources Engineering, Geotechnical Engineering, Structural Engineering and Transportation Engineering. Among these core research areas, the department incorporates themes of project management, applying it to the construction and infrastructure context.
	Collaboration:	The department and associated centres engage with both the public sector and industry, offering consultancy services underpinned by cutting-edge research.
	Education:	The Department of Civil Engineering offers technical courses for industry partners, together with higher education at undergraduate, master's and PhD level.
HPC Supply Chain Innovation Lab	Affiliation:	The University of Bath
	Focus:	The HPC Supply Chain Innovation Lab is principally focused on the fields of supply chain, innovation and complex capital projects and programmes.
	Collaboration:	The HPC Supply Chain Innovation Lab is a partnership established between the University of Bath and Hinkley Point C (HPC). The lab seeks to provide a platform for international thought leadership to connect business leaders, policymakers and academics.
	Education:	The HPC Supply Chain Innovation Lab disseminates its research throughout the University of Bath's School of Management, teaching students interested in the field and related fields of information, decision and operations.
The John Grill Institute of Project Leadership	Affiliation:	<i>See Section 4.1.1. of this report for a detailed case study.</i>
	Focus:	
	Collaboration:	
	Education:	
Project and Supply Chain Management Group	Affiliation:	Smeal College of Business, Penn State University
	Focus:	Project and programme management – Within the Smeal College of Business at Penn State University, a proportion of scholars group together to form expert knowledge in a range of project-related sub-disciplines, including commercial and procurement law; corporate and business strategy in project management; cost control, planning and resource management; human relations and project teams; and organisation theory in project management.
	Collaboration:	The research, education and knowledge exchange activities undertaken by the academics who constitute this project-centric group collaborate across the business school's departments, particularly in the areas of management and project and supply chain management. Knowledge exchange is a prevalent activity within this hub of scholarly project research, and many academics have consulting experience with a number of major organisations.
	Education:	The group is positioned within the Smeal College of Business, and therefore offers a wide range of degree programmes at graduate, master's and doctorate level. In addition, the college is PMI-accredited and offers training to stakeholders located in industry.

Institution	Criteria	Details
Project Management Group, School of Civil Engineering	Affiliation:	The University of Leeds
	Focus:	The research within the group focuses primarily on infrastructure projects of various scales, with a large focus on nuclear decommissioning projects. Historically the research was primarily on construction projects, but it is moving towards a more interdisciplinary project management approach, with current research also looking at social science themes within construction infrastructure projects, such as sexism, corruption and the circular economy. The projects that are considered across these research themes are complex projects, and even where the projects studied appear to be 'regular construction projects', for example flood protection or sanitation projects, there are complexities in the project delivery.
	Collaboration:	The Project Management Group at the University of Leeds works in collaboration with a variety of stakeholders, with the main ones being the International Atomic Energy Agency and the UK government. Through the IAEA it has also worked with international governments who use the IAEA to get in contact with experts to investigate specific issues.
	Education:	The group teaches at graduate and postgraduate levels, disseminated by its seven full-time members and four part-time members of staff, ranging from lecturers to associate professors, and professors.
Stanford Global Projects Center	Affiliation:	<i>See Section 4.1.2. of this report for a detailed case study.</i>
	Focus:	
	Collaboration:	
	Education:	
The OMEGA Centre for Mega Infrastructure and Development	Affiliation:	The Bartlett School of Planning, University College London
	Focus:	Projects and programmes – The OMEGA Centre focuses its research and related activities on aspects of planning, appraisal and the delivery of megaprojects worldwide.
	Collaboration:	Initially, the OMEGA Centre was set-up in collaboration and with funding from the Volvo Research and Education Foundations. A central component to the strategy of the OMEGA Centre surrounds its consultancy activities, which include various collaborations with government and industry organisations. Further, the centre operates more broadly across the various departments of UCL's Bartlett Faculty, with intra-organisational collaboration spanning the wider university structure.
	Education:	The OMEGA Centre for Mega Infrastructure and Development contributes to three postgraduate courses, inclusive of an MSc in infrastructure planning, appraisal and development (flagship programme), MSc in mega infrastructure planning, appraisal and delivery (OMEGA Basal Legacy Programme), and MPhil/PhD planning studies.
Project Management Group	Affiliation:	University of Vienna
	Focus:	Sustainable work; macroeconomics and environment; climate economics and finance; global resource use; socio-ecological transformation; projects; ecological economics, project-oriented management/project management theory and methods.
	Collaboration:	Co-creation approach and cooperation with practitioners, other researchers, educators and consultants; certification agreement with Project Management Austria.
	Education:	Bachelor's, master's, PhD, professional MBA.

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