BRITISH COUNCIL

SEMINAR CONCLUSIONS
MARCH 22ND-23RD 2017, VALPARAISO, CHILE

"STRENGTHENING THE INNOVATION ECOSYSTEMS OF THE PACIFIC ALLIANCE: PUTTING HIGHER EDUCATION AT THE HEART OF SUCCESSFUL INNOVATION POLICY AND PRACTICE"

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BACKGROUND

The British Council and the Foreign & Commonwealth Office of the United Kingdom, in partnership with the Global Innovation Policy Accelerator (GIPA) supported by the Newton Fund, organized a seminar entitled "Strengthening the innovation ecosystems of the Pacific Alliance: putting higher education at the heart of successful innovation policy and practice," which took place on the 22nd and 23rd of March 2017 in Valparaiso, Chile. Over 120 people participated in the seminar, which was inaugurated by the Chilean Minister of Economy, Mr. Luis Felipe Céspedes. Participants included policymakers from the UK and Pacific Alliance countries involved in promoting linkages between industry and higher education institutions (HEIs), including through the application of enabling frameworks for HEIs in the areas of research and innovation, and practitioners from HEIs, as well as representatives from businesses that have developed robust partnerships with HEIs.

The UK, through its research and higher education institutions, has an excellent track record of research and innovation. It is the world's third largest producer of research and ranks highly on indicators of quality. Moreover, the UK ranks second in the Global Innovation Index. The UK is also ranked one of the best countries in the world for university-business links with a national infrastructure which aims to create and exploit knowledge and to enable and support innovation. The Seminar sought to draw on the UK´s experience in this area, while also facilitating knowledge exchange among the four Pacific Alliance countries, each with its own approach, unique context and policy framework.

With the objective of maintaining the synergies created during the two days of the Seminar, the British Council invites participants to join a group in LinkedIn, which will facilitate further discussion around some of the topics covered during the seminar.

INTRODUCTION

This note extracts from the conference discussions the key areas of shared challenge and of potential future collaboration. It focuses specifically on the role of higher education in innovation and how that might be maximized, both through collaboration among Pacific Alliance countries and also between PA countries and the UK at policy and university level.

Challenges are grouped under three main themes that emerged as important to all countries. These are not mutually exclusive, and there is overlap and connection among them. Policy and institutional level actions are highlighted in all themes. While the balance of these differs in relation to particular challenges and contexts, participants agreed that for innovation to grow, these must be mutually re-enforcing rather than separate entities. Policy frameworks, for example, are critically important in developing an ecosystem where academia and industry can grow and innovation flourish. All countries described national policies for economic growth and innovation. However, it is not only the existence of policies that is important, but their quality and effectiveness in operation. The latter can be maximized by the co-ordination of policies across different government departments – and countries present different experiences here. One significant challenge that recurs across all themes is the need to change mindsets and cultures. This applies to universities, governments, agencies, businesses and productive sectors.

Katherine Hutter, Director British Council Chile, and Ian Underwood, Head of the Institute for Micro and Nano Systems (IMNS), University of Edinburgh.

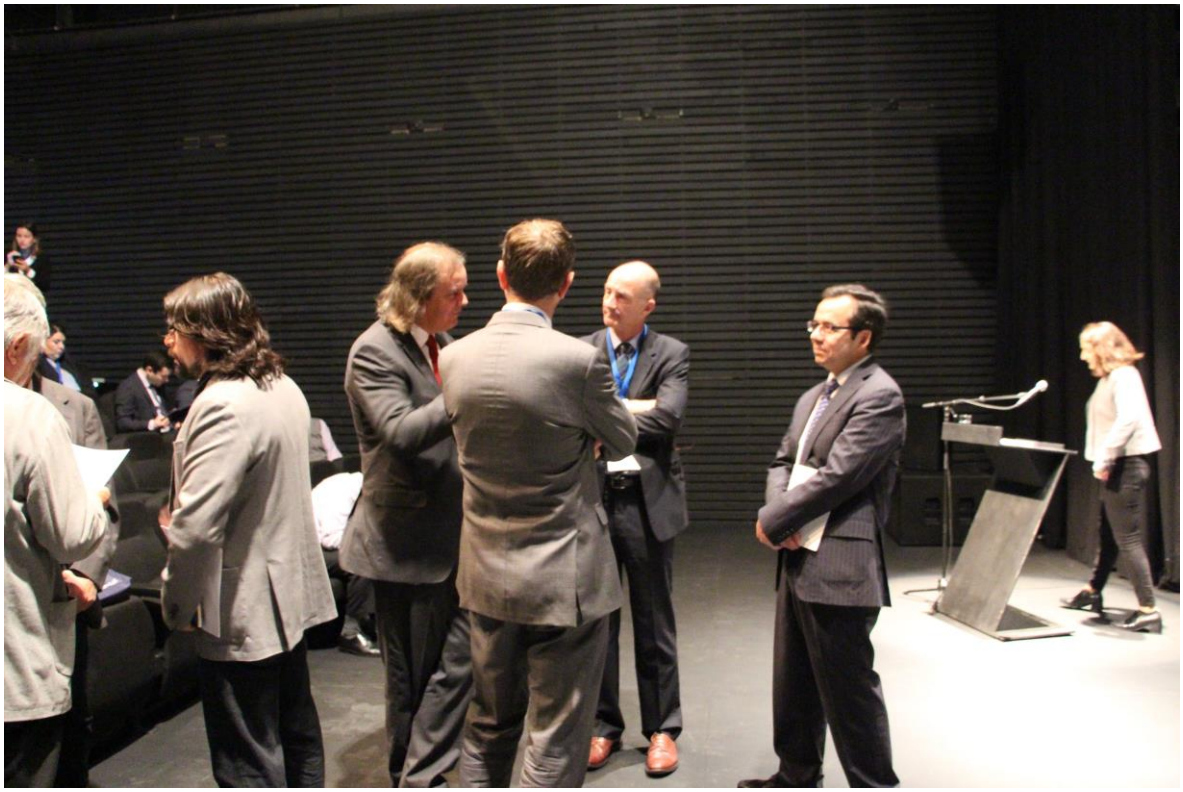
KEY THEMES

1. Research

Research will only provide a strong foundation for innovation, if it is relevant and of high quality. Interventions here are important at both policy and university level.

Policy: it was agreed that government policy and funding can be critical in encouraging relevance. Within their economic and growth policies, all countries identify priority industry sectors. Countries' national agencies allocate research funding largely in line with these. Scientific research is a major priority across PA countries as well as in the UK (where funding for science has consistently been protected from wider government funding cuts). For universities and researchers, government money is the major source of research funding – so its allocation can provide a powerful incentive for researchers to focus on areas of relevance to countries' priority sectors. Most countries have funds to encourage innovation – some include incentives for multidisciplinary and international collaborations.

Assessing research quality, particularly in terms of its impact on innovation and economic growth, is a major challenge for all countries. Citation indices are essentially academic measures of quality. While they measure the frequency with which research papers are cited by other journals, they are not designed to measure the frequency with which research leads to innovation or economic and societal impact. Developing metrics to capture this is challenging and complex - but exactly what is needed by funding agencies to inform their allocation decisions. The UK had done most work in this area, contributing its experience of developing the Research Excellence Framework, which seeks to measure the impact of research. This informs Higher Education Funding Councils' decisions on allocating funding. Impact measures are also used by UK Research Councils for awarding project funding on a competitive basis.



José Miguel Benavente, Division Chief of the Competitiveness and Innovation Division at the Inter-American Development Bank, Christopher Wade, Regional Director Americas at British Council, and Luis Céspedes Chilean Minister of Economy, Development and Tourism.

The level of government funding remains a challenge for all countries. It was noted that Latin America, as a region, has a history of low investment in research. Consequently, countries are facing a low base from which to grow the research capacity needed to fuel innovation. National funding is not limitless so sharing experiences and learning is of great value - "the challenge is not simply one of growth .... it's about thinking creatively". Collaboration on areas of shared challenge would be beneficial both to countries and the region.

Universities: institutional structures, strategies, cultures and networks were identified as important factors in producing relevant high quality research with the potential to seed innovation. An important consideration is that cutting edge research is at the boundaries of disciplines. If countries want innovation, universities need to ensure researchers are multidisciplinary. It was noted that national, international and regional funding agencies are already incentivising multidisciplinary research projects through their funding. However, this also requires universities to establish organisational structures and training that encourage and support interdisciplinary teams. They need to change traditional mindsets to achieve this. Examples from PA countries and the UK were offered as cases which could be shared and from which lessons could be learned.

Universities' corporate strategy can also be an important factor. Just as government funding provides incentives, so too do resource allocation models inside universities, including faculty time and funding. Discussions also pointed to the importance of human resource policies, particularly recruitment and promotion. Policy maker and university contributors pointed to the importance of university "third leg" strategies which drive universities' connections to local businesses and communities. These connections are crucial in universities' understanding of "customer" need – and it is that understanding that helps to drive and shape innovation.

Universities' research networks are important, both in changing mindsets and in providing researchers with access to global and regional research programmes designed to lead to innovation. A distinction was drawn between the existence of large numbers of MOUs and the much smaller number of high impact functioning collaborations. Policy makers emphasised the importance of researchers engaging in global challenges. Through this, they connect not just themselves, but also their countries, to the world.

Universities' training of researchers is a further critical factor (see 3 below).

2. University-business links

Universities and businesses are the two major players in innovation ecosystems. The gap between the two was seen as the greatest challenge facing countries and the "weakest link" in the system. "Closing the gap between academy and industry is ... hugely important".

Understanding the nature of the gap is essential if policy makers and universities are to address it.

The gap: while policy makers, universities and businesses had different perspectives on the gap, there was a high level of agreement that this includes:

- Lack of alignment between what universities supply and what businesses demand (plus a question about whether innovation is for the future or simply to solve a current problem)

- Barriers for businesses accessing universities – it is either difficult for businesses to make contact with the relevant research group, or no relevant research group exists (and businesses need to go to international universities). Barriers might conceivably be lessened by general networking – but networking is expensive for businesses (particularly SMEs)

- Universities' and businesses' lack of understanding of each other's operations and processes – including different timescales (immediate needs of businesses vs long timescales of research – "researchers think they have an eternity to research – they don't know when to stop!"); different

priorities (business solutions vs the need to publish); businesses don't understand research processes, and universities don't understand business processes; researchers don't know how to productise or commercialise research; universities don't understand different sectors and different types of business; some businesses don't assess their customers' needs, leaving universities with incomplete information

- Costs – universities applying 100% overheads regardless of the size of the business

- University bureaucracy vs. the need for business agility (researchers themselves often face barriers in the bureaucracy)

- Intellectual property – lack of clarity and unrealistic/aggressive demands by universities

- Lack of communication and lack of trust between universities and businesses – these underpin and re-enforce the gap

- Large companies and SMEs are different – but universities generally either do not understand, or do not take account of, that difference

- The gap is at its greatest between universities and SMEs. Yet, a very high proportion of businesses in countries are SMEs (e.g., around 90% in Colombia). In some sectors (e.g., the creative economies) small and micro businesses account for 99% of all businesses – and there is an extremely high failure rate after the first year. "Small businesses need resilience and universities are part of that." However, universities are either simply too slow to meet small businesses' needs (even in London where there are 20 universities) or have insufficient capacity to support them beyond providing first stage research.

So how might policy makers and universities address this gap? What bridging mechanisms could act as catalysts?

Policy makers have a crucial role in building and maintaining an ecosystem where academia and industry can function effectively together. Panelists agreed on the importance of structures and "serious agencies that are able to take a long-term view". With, perhaps, the longest track record in university-business links, the UK's experience pointed to the importance of government support in building the infrastructure for innovation. Policy interventions can be categorized into direct, incentives and broader frameworks. For the UK, direct action included the government establishing Innovate UK and a number of other bodies as part of the country's innovation ecosystem. Incentives include the Research Excellence Framework and its measurement of impact ("there are no incentives for academics to engage with businesses if their performance is measured just on the number of publications"). UK universities are also allowed to make money from their research and other activities, which provide an incentive at institutional level.

Higher Education Apprenticeships and Voucher schemes (aimed at SMEs) have potential to provide incentives for businesses to engage with universities. Broader frameworks include a legally enforceable intellectual property framework, which helps to provide confidence in a wide range of collaborations, as well as the government's industrial strategy and investment framework, which aims to provide greater clarity for sectors and businesses. Lessons from the UK's experience included the difficulty of measuring impact - initially this was too narrowly focused on quantitative measures (numbers of spin-out companies etc). Getting mobility between businesses and universities remains a significant challenge.

Bridging mechanisms: countries shared their experiences of a range of models – e.g., Technology Transfer Offices, Research Hubs, Open Innovation Platforms, Catapult Centres, Knowledge Transfer Networks, Voucher schemes. Some are situated inside universities; some are independent or government bodies. All aim to act as catalysts for innovation either by bringing together universities and businesses ("innovation is a contact sport") or by facilitating university 'spin-outs', helping

researchers to commercialize their offer and supporting them through the difficult first ("valley of death") years. TTOs in particular face very similar challenges in all countries, both in their relationships with university faculty and with businesses. While bridging models need to fit country contexts, it was agreed that continuing to share experiences and lessons would help to assess what worked and what didn't, as well as whether better models can be developed. One suggestion was that this could be done virtually across the PA countries and also with the UK.

Universities: as well as TTOs and other bridging mechanisms, universities offered examples of other approaches to building closer connections and better communication with businesses, increasing knowledge and understanding on both sides. Changing cultures and mindsets, particularly of faculty, is crucially important. University strategy can contribute to this by articulating a clear vision of "third leg" activities and university support for local businesses. Resource allocation inside universities can re-enforce the priority placed on this and incentivize faculty. Other mechanisms include university-employer advisory groups, business representation on university governing bodies and committees, business involvement in curriculum development, and the use of student placements in local businesses (it was suggested that placements in SMEs might be particularly helpful).

Mario Hamuy, President of CONICYT.

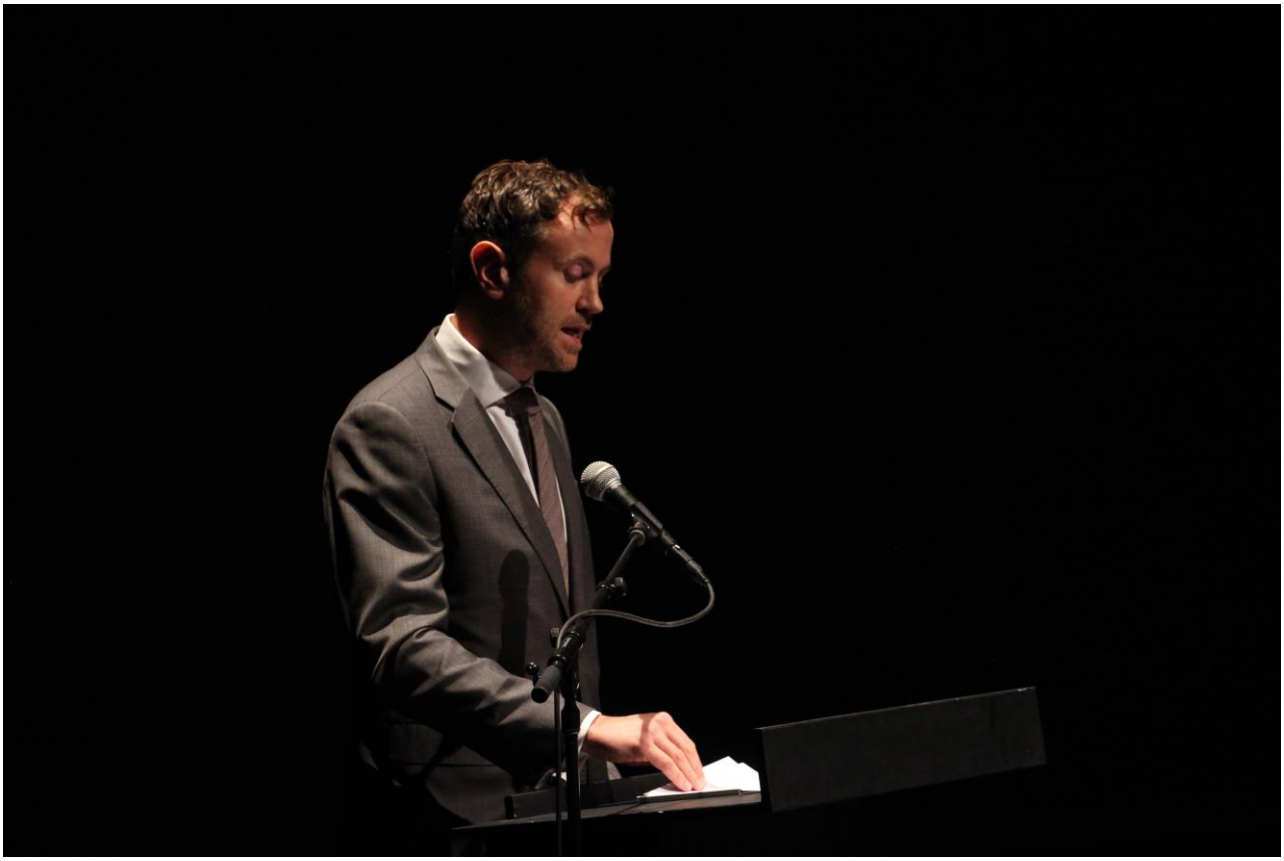
3. Entrepreneurial and innovative graduates

While research is the starting point of innovation, moving beyond that depends on graduates and researchers able to drive innovation. What skills do they require, how can these be developed and who should be responsible?

Countries agreed that developing relevant skills and mind-sets in graduates and young researchers was of paramount importance - “the innovation bottleneck is in skills”. This was still not always being addressed effectively. Fundación Chile, for example, had found that, while the entry to higher education had tripled, little progress had been made on improving workforce skills and competencies – “people of twenty-four have fewer competencies now than their predecessors had at that age”.

Businesses saw the main barriers to innovation as the lack of soft skills and competencies. This applies equally to graduate employees and to young researchers either working with existing businesses or setting up new ones. British Council in Mexico supported this, describing their recent research into the capacities needed to innovate.

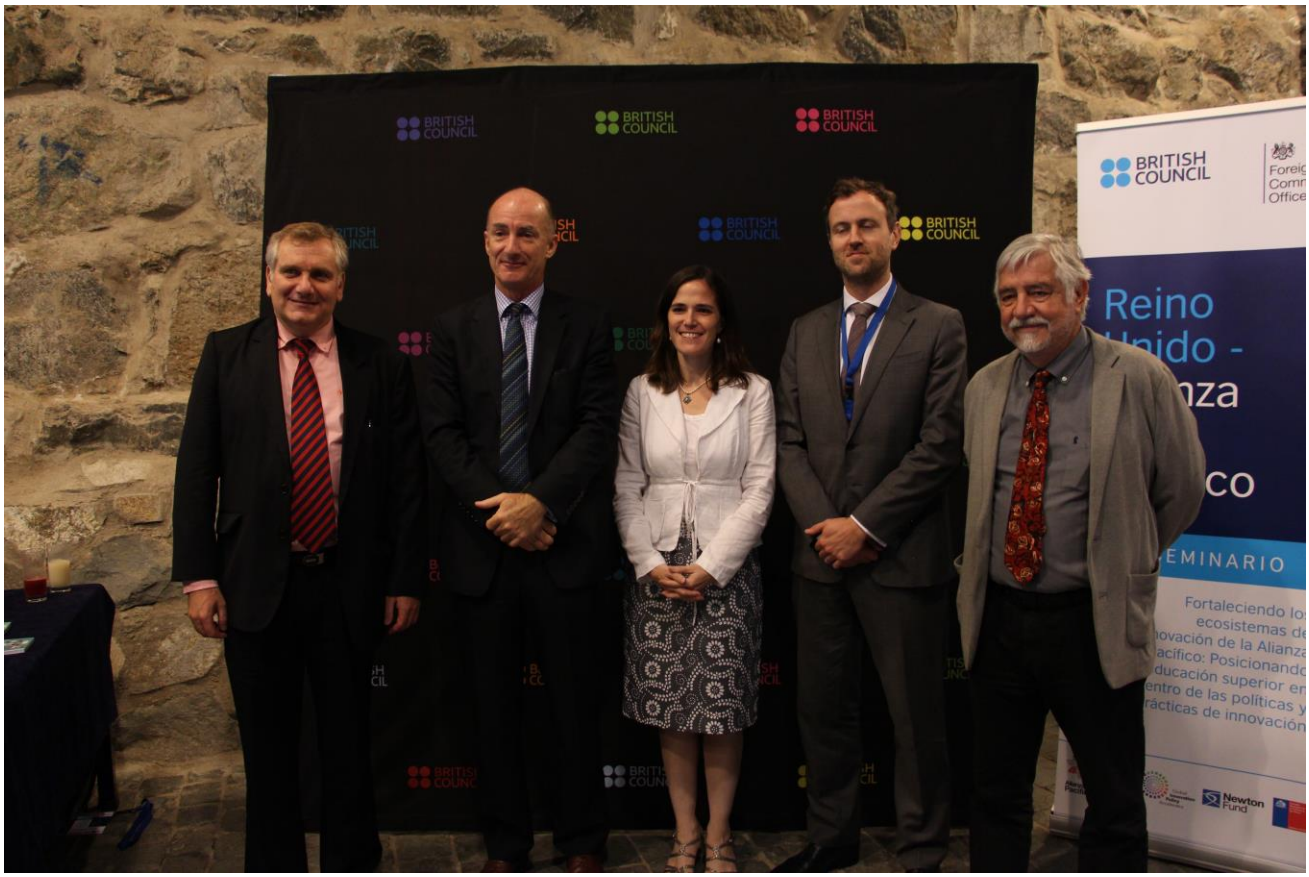
Policy level: examples of policy level initiatives included the use of funding for international scholarships for individuals; also funding for international research and institutional links which focused on developing early career researcher skills. Other policy initiatives focused on national ecosystems (Nesta is an example in the UK) and on research training funded by national agencies and research bodies.



Mal Green, Deputy Head of Mission at the British Embassy in Chile

Universities have a major responsibility to ensure that graduates are productive – “a university’s biggest contribution is to instill entrepreneurial and innovative mind-sets”. It was agreed that this needs to be reflected in universities’ programme offer as well as in the curriculum development of individual undergraduate and postgraduate courses. Ideally curriculum development should include employer contributions, and there are examples of good practice in countries linked mainly to professional qualifications (e.g., engineering). Universities can also make greater use of student placements in businesses as part of courses. The training of postgraduate and early career researchers is particularly important in ensuring scientific and high level research can lead to innovation. Critical skills here include management, communications and foreign language competencies (particularly English), and working with others as well as traditional research skills.

While some entrepreneurial skills are developed as part of formal learning (either in university or professional development programmes), some must be learned by doing. Mentoring was highlighted as an extremely valuable mechanism here. This may be provided by universities, professional bodies, businesses or a range of other agencies (the example presented was the ‘Leaders in Innovation Fellowships’ involving young innovators from a number of countries and run by the Royal Academy of Engineering in the UK).



Katherine Hutter, Director British Council Chile, Mario Hamuy, president of CONICYT, Christopher Wade, Regional Director Americas at British Council, Mal Green, Deputy Head of Mission at the British Embassy in Chile, and Jorge Coulón, Director Parque Cultural de Valparaíso.

CONCLUSIONS

All the countries represented at the conference faced very similar challenges. There was considerable agreement on the areas described above. Inevitably, countries were at different stages in addressing these challenges and in finding solutions that fit national contexts. However, it was agreed that a great deal could be learned by sharing experiences and lessons learned – and, in some areas, working collaboratively on solutions across (1) policy-makers, agencies, universities, businesses; (2) countries of the Pacific Alliance; and (3) PA countries and the UK. We should consider how to create a learning space (virtual or physical) to enable that to happen.