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Future Pathways Policy Team Employment  
Ministry of Business, Innovation & Employment  
PO Box 1473  
Wellington 6140

Dear Sir/Madam

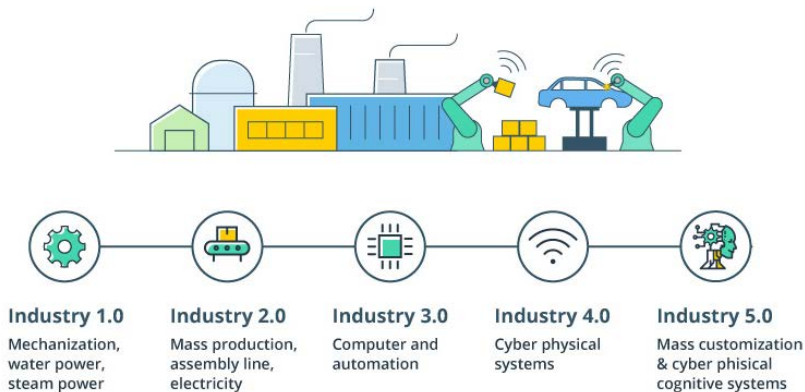
**To Future Pathways Policy Team, Ministry of Business, Innovation & Employment**

We would like to thank MBIE for this opportunity to submit on the discussion document, Te Ara Paerangi - Future Pathways. We welcome the invitation to provide further feedback on our submission.

We believe the Green Paper will provide a valuable first step towards creating an open innovation ecosystem for New Zealand. It may require a fundamental shift in mindset regarding NZ's "Innovation culture". We expect nation-wide strategic investment plans, policies, and a long-term innovation roadmap to operationalise MBIE's Industry Transformation Plans. To future-proof our economy, we must protect and grow our talents, intellectual property, research, and industry. Global communities and industries are rapidly preparing for the next generation of technological innovation.

***"Is New Zealand ready and moving towards Industry 5.0?"***

Industry 5.0 technologies — Mass customization of the customer experience through digital transformation



Source: [Furniturk Magazine Online — Ready for Industry 5.0](#)

CMIC was established in 2018, with support from the Tertiary Education Commission's Entrepreneurial Universities Initiative Programme, to strengthen and expand NZ's strong research and technical capability from the film and creative sector to emerging interactive-computational media sector. Our goals are to establish partnerships with overseas industries to showcase NZ's global impact in the creative sector, prepare for "Industry 5.0" (see "Is [New Zealand ready and moving towards Industry 5.0?](#)"), and deliver the benefits to NZ.

Please refer to our website for further details about our Research Centre:  
<https://www.wgtn.ac.nz/cmhc>

This submission focuses on our feedback regarding economic factors, topics related to media technology, platform technology research, industry engagement and international partnerships based on our experiences in these domains. Our general comments regarding the other aspects of the green paper have been integrated into the submission of our parent entity, Victoria University of Wellington.

### **Research Priorities, Te Tiriti, Mātauranga Māori, and Māori aspirations**

Research helps solve current complex issues and prepares us for the future. It also helps the nation to critically identify the extent of knowledge gaps, both domestically and globally. Priority-setting processes should be initiated with a systematically ranked importance of global impact, including our weaknesses, our strengths, and the benefits to New Zealand. The current Research, Science and Innovation (RSI) system has limitations to efficiently, proactively identify important areas for long-term investment; instead, it reacts to (often, short-term) areas that require immediate attention.

Priority-setting processes need to be transparent, efficient, and effective. A thorough background market analysis needs to be completed by the government, with a clear identification of target goals and key performance indicators related to the global impact and benefit to New Zealand. Any additional detailed technical consultations can be supported by inviting leading experts from across the world. During this technical consultation phase, opportunities for underinvested research priorities can be identified. Similarly, overinvested research priorities can be reviewed.

Identification of research priorities will need to align with global investment, research, and industry trends. This will generate long-term economic benefit to New Zealand and create pathways for New Zealand to export novel intellectual property. Many countries around the world have strategically invested in media and ICT sectors such as metaverse, Industry 5.0, digital twin, and AI, to show their leadership but to also add value to global ecosystems. However, New Zealand has not made significant strategic investment within these platform technologies - yet (e.g., no CRI in these areas).

Although New Zealand is not leading the race, the nation can still shine globally by strategically investing in platform technologies to advance ICT infrastructures. New Zealand can position itself as the *best partner* for conducting research; we have a niche opportunity to accelerate the global media and ICT platform technologies. We can work with global industries and research communities to establish a media technology hub in New Zealand to support the nation to identify research priorities, prototype future media platforms, and showcase the global impact with overseas partners to deliver benefits to NZ.

We highly value that the government is taking innovative approaches to interweave Mātauranga Māori into all aspects of the RSI policy. However, we recognise that there is a lack of capacity to communicate with Māori researchers and Māori experts to establish foundations for future innovation

within the Māori RSI community. This is often due to the significant number of requests and workload that our Māori partners receive from internal and external partners with tight timelines. We recommend that the government co-designs a set of mechanisms and practical timeline with Māori RSI community where sufficient time and resources are given to Māori partners with formal recognition of their contributions.

## **Funding & Institutions**

Currently, many New Zealand enterprises have capabilities to access R&D incentives. However, we have identified a lack of practical incentives for SMEs to work with CRIs or Universities. Over 90% of New Zealand companies are classified as SMEs. This has created unwanted cultural barriers for industry to collaborate with research organisations. We need practical mechanisms to reduce reliance on government research funding and to considerably increase non-government (domestic & international) research funding. A key challenge here is to create a set of incentives to enable active research participation from SMEs and large enterprises.

We suggest a regular review of innovation culture, framework, and partnership models for expanding research partnerships, conducted with relevant research leaders and stakeholders to identify challenges and suggestions. This review should also identify strategic directions for expanding international research partnerships that reflect global trends to create global impact.

The regular review should also include the latest benchmark investigation of how academia-government-industry partnerships are being funded and operationalised overseas. If feasible, a pilot funding programme can be introduced to test innovative funding models in New Zealand.

Newer, fewer, and larger organisations will greatly reduce unwanted competitive behaviour between CRIs and other research organisations. This is a global trend and allows efficient mechanisms for sharing knowledge. We strongly recommend that a new research entity will need to focus on platform technologies (e.g., metaverse), which can produce a foundation of advanced infrastructure for a wide range of application sectors that will benefit from the Industry 5.0, and where multiple research strands can be created.

## **Research Workforce**

It is deeply concerning that New Zealand is losing talent to other countries. We recommend that New Zealand strategically invest in research areas that reflect global industry trends. This will create ripple effects to maintain and grow research talents in New Zealand. We understand that these are being discussed in MBIE's Digital Industry Transformation plan (ITP). But, to reiterate, we need sustainable ways of upskilling, maintaining, and developing leadership within our research workforce.

Thank you for the opportunity to provide feedback on the paper. We are happy to engage further with MBIE to discuss our submission and provide any further guidance.

Yours Sincerely,

A handwritten signature in black ink, appearing to be 'Taehyun James Rhee', written in a cursive style.

A/Prof. Taehyun James Rhee  
**Director, CMIC**  
Victoria University of Wellington