

INTRODUCTION

Wellington UniVentures appreciates the opportunity to provide input into the Te Ara Paerangi—Future Pathways Green Paper.

As the commercialisation office and wholly owned subsidiary of Te Herenga Waka—Victoria University of Wellington, Wellington UniVentures has been enabling impact from University research for 30 years.

While our response reflects the position of Wellington UniVentures, we have also had the opportunity to view and feedback on Te Herenga Waka—Victoria University of Wellington’s submission and participated in the Combined TTO submission alongside our colleagues at Otago Innovation, Massey Ventures, Auckland UniServices and AUT.

Contact:

Anne Barnett
CEO Wellington UniVentures
Privacy - 9(2)(a)

IN SUMMARY

Our review and feedback on the Te Ara Paerangi—Future Pathways Green Paper concentrates on the areas where we feel we can provide informed commentary and suggestions. Specifically we have concentrated on:

Part 1 - Knowledge Exchange and Research Impact

Referencing key questions and commentary in section 4.6: Ngā Pāpātanga Pai Ake – Te Whakawhiti mohiohio me ngā pāpātanga rangahau. Better Impact Delivery – Knowledge exchange and research impact.

1.1 Ngā ara whakaarumoni – Commercialisation Pathways

- Diversification of commercialisation pathway thinking
- Ownership and management of IP resulting from publicly funded research outputs
- Current commercialisation supports – collaboration and pooling of expertise
- Current commercialisation supports – funding and pooling of opportunities

1.2 Delivery of Research Impact

- The role of impact management and analysis within commercialisation and knowledge transfer
- For-Profit Public Good enterprise structures – a new opportunity

Part 2 – Funding

Referencing key questions and commentary in section 3.3.1 Ngāwhai wāhitanga ki ngā tauira tuku pūtea rerekē – Opportunities for different funding models.

Part 3 – Mātauranga Māori

Referencing key questions and commentary in section 2.3 Te whakamana me te whakahaumarū i te mātauranga Māori – Enabling and protecting mātauranga Māori.

SUMMARY OF FEEDBACK

- The current performance in research commercialisation and knowledge transfer in New Zealand across the sector should be viewed as a solid foundation providing an opportunity to leverage rather than reinvent. We recommend the Government focus any efforts on further scaling the commercialisation system by leveraging of existing organisations via a 'local-hub' model that delivers services through high-quality competition, rather than creation of a centralised service function which we believe would be duplicative and unnecessary.
- An ambitious goal for Aotearoa New Zealand to aspire towards is a set of high quality commercialisation offices acting at scale with effective on-call services available for smaller local offices.
- Effective and impactful knowledge transfer outcomes require a wider set of activities beyond 'traditional' commercialisation activities to be well resourced and connected to 'core' commercialisation functions in order to create a thriving system of knowledge transfer and impact. The current state of connectivity of these activities with commercialisation activities in New Zealand is variable and there are opportunities to increase the performance in this regard.
- The current degree of commercialisation/knowledge transfer funding is small relatively to both New Zealand's investment in fundamental and applied research as well as equivalent schemes off shore. There is an opportunity to increase the available funding and direct it towards mechanisms that are effective to maximising knowledge transfer outcomes. We provide a number of suggestions in our feedback in this regard.
- We suggest that in the commercialisation context, impact is viewed as a reinvestment prioritisation decision-making function. There is the opportunity for specific investment into impact analysis and management within the commercialisation setting that would elevate the professionalism of this activity nationally and ensure publicly generated benefits from commercialisation are reinvested for maximum future impact.
- We suggest the Government explore the opportunity for a formal legal structure in Aotearoa New Zealand to support the establishment of 'for-profit public good' enterprises, such as that exemplified through the Public Benefit Corporation (PB Corp) in the US or Community Interest Company (CIC) in the UK. This mechanism is currently absent in New Zealand, and could be a key enabler to make research innovations available to a wider range of stakeholders and markets (such as the public sector and community groups). The process of implementation of research outcomes for impact is non-trivial and enterprises formally dedicated to this task with explicit public benefit motives increase the likelihood of translating impact to scale. This mechanism sitting alongside impact professionals inside commercialisation offices would be a powerful combination.
- We support baseline funding models as outlined in section 3.3.1 Ngāwhai wāhitanga ki ngā tauira tuku pūtea rerekē – Opportunities for different funding models.
- We recognise there is a gap in both policy and operational performance in the RS&I system in Te whakamana me te whakahaumarū i te mātauranga Māori-Enabling and protecting mātauranga Māori.

PART 1 – KNOWLEDGE EXCHANGE AND RESEARCH IMPACT

[Referencing key questions and commentary in Section 4.6: Ngā Pāpātanga Pai Ake – Te Whakawhiti mohiohio me ngā pāpātanga rangahau. Better Impact Delivery – Knowledge exchange and research impact.]

While we support the need for significant reform in the Research and Innovation ecosystem, we also challenge the Future Pathways programme to deeply consider high-performing elements of the current ecosystem and how best practice is already being applied here in Aotearoa New Zealand, with the goal of maturing existing high-performing commercialisation and knowledge transfer organisations.

The ambitious goal for Aotearoa New Zealand should be a set of high quality commercialisation offices acting at scale with effective on-call services available for smaller offices.

The current New Zealand approach to research commercialisation, knowledge management and transfer from publicly funded research organisations (PROs) to end users has matured and consolidated particularly over the past 10 years. There has been demonstrated growth in commercialisation outputs from many institutions, with a number of commercialisation offices achieving 'scale' within their operations, demonstrated through consistent creation of new enterprises, transfer of innovation to existing third party companies via licensing and joint development relationships, as well as supporting entrepreneurship and the growth of commercial accumen within the research community.

Many commercialisation offices have successfully optimised resilient local operating models that suit the nexus of the research innovation pipeline available to them from their institution, as well as the risk appetite of their parent research organisation for 'commercialisation' activities.

There are a number of aspects of New Zealand's PRO commercialisation and knowledge transfer activities that could be further improved and innovated on. We provide commentary to this effect in the following section. We emphasise that the current performance in research commercialisation and knowledge transfer in New Zealand across the sector should be viewed as a solid foundation providing an opportunity to leverage rather than reinvent.

1.1 Ngā ara whakaarumoni: Commercialisation Pathways

Diversification of commercialisation pathway thinking

The subsection 4.6 entitled **Ngā ara whakaarumoni—Commercialisation Pathways of Te Ara Paerangi Future Pathways** poses the question as to 'whether an argument can be made for diversifying how we think about commercialisation pathways and therefore the kinds of support we have in place'. To that question we say a resounding 'Yes!'.

As well as our support for a more sophisticated approach to empower the development of impact-led social enterprises (as outlined in the section 1.2 below), the experience in the

US over many decades – as outlined in the seminal consensus study report **“Managing University Intellectual Property in the Public Interest”**¹ – points to the benefits of considering ‘commercialisation’ in a far broader sense and aligning it with a range of knowledge transfer processes. Other key mechanisms for knowledge transfer include:

- Supporting entrepreneurship in practice – through researcher participation in start up companies, and industry engagement through contract research and collaboration.
- The development of commercial acumen within the research community through training followed by experiential learning.
- Undertaking private and public sector contract research.
- Development of joint ventures and deep collaborative research partnerships with private industry.
- The movement of highly skilled students from training to private and public employment.

The US experience over four decades shows that effective and impactful knowledge transfer requires these wider activities to be well resourced and connected to ‘core’ commercialisation functions in order to create a thriving system of knowledge transfer and impact.

The current state of connectivity of these activities with commercialisation activities in New Zealand is variable. For example, many commercialisation offices in New Zealand do not manage both commercialisation and contract research activities. There is also a variability in the connectivity between a PRO’s activities directed towards entrepreneurship and development of commercial acumen (in its broadest sense) with commercialisation activities.

Commercialisation offices need to be supported to maximise the opportunities for knowledge transfer and impact generation from research by either spanning a wider remit or being closely aligned with other internal functions at their institutes that do span these activities. The important consequence is that the opportunities created through one knowledge transfer engagement activity can be leveraged to lead to a plurality of outcomes (for example the relationship built through a technology license to an industry partner creates flow on opportunities for joint research, student exchange etc).

We encourage the Government to ensure that incentives are designed to allow as many knowledge transfer mechanisms to be in play as possible and for these to be well connected. The US experience demonstrates this is the optimal way to achieve impact at scale from knowledge transfer and commercialisation. The CPN network also provides a natural grouping across which to leverage networks and relationships between different institutions and can be used to support this engagement.

Ownership and management of IP resulting from publicly funded research outputs

At times there is much debate around how IP resulting from publicly funded research outputs should be owned and managed. However there is clear evidence from the United

¹ <https://www.nap.edu/catalog/13001/managing-university-intellectual-property-in-the-public-interest#rights>

States on which model of IP ownership and management represents best practice and there should be little debate to be had.

Federal policy in the United States underwent a major change through the Bayh-Dole Act of 1980, which fostered greater uniformity in the way research agencies treat inventions arising from the work they sponsor. Before the Act, if government agencies funded university research, the funding agency retained ownership of the knowledge and technologies that resulted. As a result, very little federally funded research was actually commercialised and knowledge transfer and impact outcomes were not optimised. As a result of the Act's passage, patenting and licensing activity from such research accelerated and significant knowledge transfer and impact has resulted both financially and through other kinds of social impact.

The previously referenced seminal consensus study report **“Managing University Intellectual Property in the Public Interest”** was produced following a comprehensive review of the impact of the performance of the commercialisation, knowledge transfer and impact generation functions under a ‘institute owns’ model. The report produced a number of clear findings. To quote those relevant here:

“FINDING 3: THE SYSTEM PUT IN PLACE BY THE BAYH-DOLE ACT, THAT IS, UNIVERSITY OWNERSHIP OF INVENTIONS FROM PUBLICLY FUNDED RESEARCH AND LATITUDE IN EXERCISING ASSOCIATED IP RIGHTS SUBJECT TO CERTAIN CONDITIONS AND LIMITATIONS, IS UNQUESTIONABLY MORE EFFECTIVE THAN ITS PREDECESSOR SYSTEM – GOVERNMENT OWNERSHIP SUBJECT TO WAIVER IN CIRCUMSTANCES THAT VARIED FROM AGENCY TO AGENCY – IN MAKING RESEARCH ADVANCES AVAILABLE TO THE PUBLIC.”

Also considering alternatives that are popularly referenced as ‘fixing’ perceived issues around IP ownership and management:

“FINDING 5: A PERSUASIVE CASE HAS NOT BEEN MADE FOR CONVERTING TO AN INVENTOR OWNERSHIP OR ‘FREE AGENCY’ SYSTEM IN WHICH INVENTORS ARE ABLE TO DISPOSE OF THEIR INVENTIONS WITHOUT UNIVERSITY ADMINISTRATION APPROVAL.”

The report particularly notes that in the old system (government ownership model), uncertainty and complexity were high. There was no incentive for institutions to hire personnel to support (or directly invest in) knowledge transfer and commercialisation activities. The introduction of the Bayh-Dole Act removed these uncertainties and resulted in a surge in patenting and licensing activity as well as growth in university’s capacity to undertake the activity and drive knowledge transfer and impact outcomes.

We believe a similar situation would result from an ‘inventor owns’ model and the consistency of support for development and translation to market of research created innovations in what is a genuinely ‘pre commercial’ environment would dissipate. The private sector is not willing to invest at the early stage of initial invention and only the most driven researchers would pursue commercialisation and knowledge transfer activities. Much of the IP and innovation currently managed and commercialised by New Zealand’s commercialisation offices would be ‘left on the shelf’ or simply published.

We understand that other submissions contend there needs to be a lengthy debate in this area, but we contend that the evidence from the decades long experience of IP ownership and management principles from the United States is clear and compelling in this regard.

In addition, research institutes and commercialisation offices are the only party currently entitled to receive benefits from commercialisation outcomes of PRO innovations that have the ability to reinvest those returns for the wider benefit to New Zealand. We argue later in this response paper that the development of impact models relevant to New Zealand's impact goals from research can be used to further inform the manner in which these returns are reinvested by commercialisation offices and institutions and extend our current reinvestment practice.

Any other IP ownership and management model than that we are currently working within in New Zealand has the potential to create a moral hazard where the gains are privatised and the losses socialised.

Current commercialisation supports – collaboration and pooling of expertise

Addressing specifically the approach to commercialisation within Aotearoa New Zealand and the question as to 'whether current commercialisation supports are at the right scale and how we can enable greater collaboration and pooling of expertise and opportunities'.

We recommend the Government focus any efforts on further scaling the commercialisation system through leveraging of existing organisations. There is the opportunity to recognise the significant investment that has already gone in to building up commercialisation capability and capacity in New Zealand (both through government investment via CPN and PSAF, as well as local institute investment in supporting their commercialisation offices).

There has been a suggestion that for some parts of the commercialisation system, a centralised service model may be appropriate (for research institutions who have struggled to attain scale of activity, for a variety of reasons).

The New Zealand experience over the past decade shows that developing a commercialisation operation at scale here requires significant time, money, and investment particularly in relationships both within the research institute as well as with a wide range of external organisations. It is not trivial, nor quick, to set up a commercialisation office at scale.

We believe the most effective opportunity at this point is to leverage the existing 'at scale' operations through a service 'hub' model rather than setting about the creation of another larger service provider located centrally. The existing number of larger potential providers within the system is an asset to New Zealand and offers a degree of choice for organisations with smaller local commercialisation functions to access services. Larger commercialisation offices have enough financial and resource resilience to be able to provide specialist services at the point in time that they are required, and that are aligned enough to the client institution to make them genuinely fit for purpose/personalised.

Maintaining at least a small localised commercialisation office function at each research institution is critical. Local offices are best placed to focus on required core business such as forming strong, trusted relationships with their researchers, sourcing and nurturing early stage innovation opportunities and undertaking specialised management of intellectual property owned by their institutions.

This suggested approach allows a degree of trust and empowerment for institutions to develop operating models that will work best for them and ensures that unique institutional requirements can be well managed locally. Having a suite of available 'at-scale' commercialisation providers also maintains choice within the ecosystem, encourages efficiency and perhaps specialisation of capabilities through a 'coopetition' approach. Additionally, it encourages natural collaboration and cooperation within the commercialisation ecosystem, a process that is happening inherently now but which could be amplified through a more facilitative model. It also allows for currently smaller commercialisation offices to expand and reach their own scale over time, if their research institute's innovation pipelines and risk appetite allow for this.

To support this model, increasing the pool of PSAF funding available to smaller commercialisation offices to enable their access to the services of 'at-scale' providers is one approach that would be simple to implement immediately. Another complementary approach is to enable co-development of innovations either through (a) commercial arrangements between institutions or (b) sharing of resources and the resulting commercialisation benefits regardless of the organisation from which the project has its genesis. Risk and benefit sharing models – such as the SCaRAB™ model which Wellington UniVentures has developed and used for this purpose – are innovative and enabling approaches facilitate a resource sharing approach.

To summarise, we recommend the Government directly leverage the at-scale commercialisation capability that New Zealand has effectively spent over a decade investing in building within its institutions. The ambitious and aspirational goal for Aotearoa New Zealand should be a set of high quality commercialisation offices acting at scale and able to provide effective on-call services for smaller local offices.

Current commercialisation supports – funding and pooling of opportunities

We note that one area where scale could be in question is the degree of funding available to support knowledge transfer and commercialisation. The consistency and structure of both the CPN and PSAF schemes have been a core driver of the scale and success thus far, to take another step up in scale will require a significant step up in funding to manage the translation activities.

In the current funding settings, translation is limited to a project-by-project approach with a lack of mechanisms directed at incentivising more significant initiatives that could unlock impact at scale. There remains a 'valley of death' void in New Zealand of enterprises at technology readiness level (TRL) 4-6+ stage. It remains challenging to scale into this stage off the back of a research invention, and there is a lack of incentive to

commercialisation offices to work to assemble synergistic innovations and talent to create more inherently scaled enterprises.

Whilst there are a number of investment oriented mechanisms to support scaling into this space (via Callaghan Innovation and NZGCP for example), we suggest the Government could consider creating a dedicated additional PSAF-like fund specifically designed to incentivise more substantive enterprise formation from public research than is currently happening. Investors for example tend to stay well clear of genuinely large platform opportunities, which, if progressed at all, are often broken down into single vertical applications to facilitate investment (for understandable and pragmatic reasons given the typical investment tranches in New Zealand).

Dedicated funding could be directed to combining public research innovations (potentially alongside private sector innovations) or to invest in broadly unlocking large platform technologies, to create new enterprises or joint ventures that have significant scale and address identified gaps in the value chains of importance to New Zealand industry. The work required to assemble these opportunities is considerable and beyond the 'usual' scope of business conducted within commercialisation offices. Helpfully, the innovations and commercialisation skill sets are already present within commercialisation offices to undertake larger enterprise building, and a funding mechanism that incentivises this resource to be directed towards platform and large scale enterprise generation could be particularly beneficial in removing some of the current risk barriers.

1.2 Delivery of Research Impact

The role of impact management and analysis within commercialisation and knowledge transfer

In our opinion, there is a significant opportunity for Aotearoa New Zealand to professionalise our approach to impact creation, measurement and feedback. We recommend a well designed impact model with an underpinning decision-making mechanism for future research priority setting activities. This will create a strong cycle of co-creation – (measurement, review, feedback) – co-creation which places impact outcomes at the centre of our research activities. We acknowledge the work done to date by the Government in this regard through the MBIE 2019—Impact of Research position paper.

We agree that a 'pipeline' conceptualisation as described in Section 4.6 of the report fails to recognise the complexities of generating impact from a research system. An issue with the 'linear model' is that it inherently results in the benefits sitting outside the ecosystem that funded it. We believe the system needs increased maturity around the use of **impact** and **social enterprise** to create a more circular model both in the research development phase and at the point of reinvesting benefits. In practice, a linear model of innovation is important when you're thinking about the individual progression of an idea, but it's key that universities and commercialisation offices are viewed as reinvestors on behalf of the New Zealand public that fund the research, circulating benefits back through the system via the investment of returns for impact. This relies on creating a commercialisation

environment that genuinely values **more** than just the financial benefits of commercialisation, but also social, cultural, academic and environmental.

We propose that we need to be thinking more broadly than science as being the only source of innovation and explore the depths that social sciences offer for innovative approaches that genuinely respond to societal issues. Wellington UniVentures has had success with multi-disciplinary innovations that draw from research expertise across the University to resolve social issues with “tech plus social” solutions.

There is the opportunity for Government to make a specific investment into impact analysis and management within the commercialisation offices that would elevate the professionalism of this activity nationally and ensure publicly generated returns to institutes from commercialisation activities are reinvested for maximum future impact for public good. We suggest additional funding via the CPN or PSAF mechanisms dedicated to impact assessment professionals.

In summary, we recommend investment into impact management within commercialisation offices. When impact is viewed as more than a deep understanding of the goal of a research programme or the measurement and articulation of an impact goal, impact measures can support robust future-focused decision making particularly around reinvestment of returns from commercialisation activities. Specifically we recommend the Government incentivises circular models where funds are reinvested by institutions back into future impact-defined opportunities.

For-Profit Public Good enterprise structures – a new opportunity

There is a wealth of established and emerging best practice focusing not only on impact measurement, but also the formal structures that enable the implementation and delivery of impact.

We have observed the sophistication of formal enterprise models that support social impact outcomes explicitly in other jurisdictions and the opportunity being missed in Aotearoa New Zealand through lack of an equivalent formal entity structure. For example in Delaware, Public Benefit Corporations (PB Corps based on legislation enacted in that state in 2013), enables the establishment of a for-profit entity that is intended to produce a public benefit for a set of people or other entities that are not shareholders in the company. The public benefit is explicitly stated in the certificate of incorporation and there is a requirement to report on the corporation’s progress in this area whilst it is also able to operate in a for profit framework. Similarly in the UK, a Community Interest Company (CIC) provides a structure that empowers a company to explicitly link its activities to public benefit beyond its direct shareholders. The United States also provides the option of a Low Profit limited liability company (L3C). The well-known Benefit Corporation (B Corp) programme provides a standards framework around which any company can demonstrate their social and environmental impact credentials through a certification programme, although the ability of smaller enterprises in practice to undertake the certification may be limited.

The lack of a formal legal structure in Aotearoa New Zealand to empower the establishment of for-profit enterprises with an explicitly stated public benefit impact that is a core part of the organisation's strategy and performance metrics, is a gap in the mechanisms available to support the translation of New Zealand's publicly funded research for explicitly stated and targeted impact.

Correspondingly, there is an opportunity for the Government to establish a formal legal enterprise structure to empower impact implementation and delivery. The availability of a legal structure itself would establish a framework for a viable impact-driven enterprise model, that is often currently seen as 'too hard' or 'not commercial' enough to be considered by the majority of the investment community or research institutes. As a result, impact-driven enterprises are often discarded as a viable approach to impact generation from research.

However, it is expected that a for-profit public benefit model of enterprise would be well positioned to bring to market a wide variety of innovative research outcomes in forms that would be more easily adopted and able to drive uptake at scale. For-profit public benefit enterprises will have an inherent motivation to provide solutions that are accessible and with lower barriers to adoption within the wider community, particularly by public sector partners and community groups.

If Wellington UniVentures (and other TTOs) had access to a legal social enterprise structure as described above, we would expect an associated increase in the creation of explicitly impact oriented enterprises, and a significant scaling up of the creation of impact from a broader range of New Zealand's publicly funded research.

PART 2 - FUNDING

[Referencing key questions and commentary in section 3.3.1: Ngāwhai wāhitanga ki ngā taurira tuku pūtea rerekē – Opportunities for different funding models]

We are strongly supportive of base grant funding to manage wider overhead costs associated with research activity at PROs via a specific grant for this purpose (or other dedicated mechanism), as outlined in section 3.3.1. This approach will not only ensure that necessary supporting infrastructure (in its broadest sense), is available, but will ensure that the focus and energy that is put into selection and submission of research funding proposals is oriented towards priority research areas as well as their innovation and impact opportunities for Aotearoa New Zealand, rather than decisions being skewed towards research areas where a driver to maintain baseline overhead support could be an unhelpful distraction.

As noted in the Green Paper, a base grant funding model creates significant resilience behind a given research programme and provides an increased degree of funding stability within the research organisation. Increased certainty around any aspect of the research funding system (such as baseline funding for overheads and infrastructure) will have the flow on effect of enabling institutions to increase their risk appetite for activities in other areas, such as increasing their investment in commercialisation and innovation translation for impact for example.

The relative stability and reliability of funding in the commercialisation space (both CPN and PSAF), is an example of the effect of consistent and reliable funding. The endurance of the CPN programme and PSAF scheme has provided a degree of resilience within that part of the research and innovation system and allowed it to flourish thus far from a small base of initial activity.

Part 3 – Mātauranga Māori

[Referencing key questions and commentary in section 2.3: Te whakamana me te whakahaumarū i te mātauranga māori - Enabling and protecting mātauranga Māori]

As reflected in the Te Herenga Waka—Victoria University of Wellington submission we agree it is critical that Aotearoa New Zealand takes this opportunity to design a coherent and integrated research system, that embeds Te Tiriti o Waitangi as its foundation and establishes a new way of operating. The creation of a framework that is based in robust system-design thinking and approach will support these changes, while helping to ensure new policies, initiatives and schemes align to the outcomes we are seeking.

Acknowledgement and enablement of mātauranga Māori in all aspects of knowledge transfer and commercialisation is critical to giving effect to the obligations and opportunities embodied in Article 3 of Te Tiriti. This includes ensuring that specific expression is given to the relationship between intellectual property and mātauranga Māori by research institutions and their commercialisation offices. The level of sophistication in research organisations in this space in both policy settings and practice needs to be lifted across the board.

In particular it needs to be ensured that:

- There is clarity over the ownership of intellectual property (IP) developed by researchers and learners that incorporates mātauranga Māori;
- Any activities undertaken in a commercialisation setting foster and empower individual and collective innovation by recognising and respecting pre-existing rights and responsibilities in relation to mātauranga Māori;
- Operational practices within the commercialisation and knowledge transfer functions encourage the sharing of mātauranga Māori by recognising and respecting rights and responsibilities in relation to mātauranga Māori; and
- Research institutes have clear guidelines for commercialisation of IP incorporating mātauranga Māori.

We note that in 2021 a collaborative review began between the commercialisation offices nationally to review and critique our performance in giving expression to the relationship between intellectual property and mātauranga Māori with a view to moving towards a consistent approach and sharing best practice learnings.